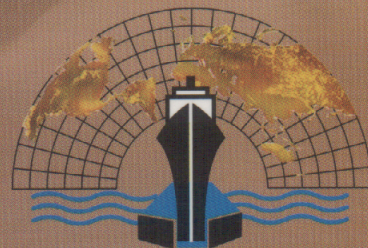


# Proceedings

7-10 September - 1997, ATLAPA Convention Center, Panama City



UNIVERSAL CONGRESS  
OF THE PANAMA CANAL

## V



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## PROLOGUE

It is a great pleasure for me to present this Record which collects papers submitted for the Universal Congress of the Panama Canal held in the ATLAPA Convention Center in Panama City on September 7-10, 1997.

The Congress was convened by the President of the Republic of Panama, Dr. Ernesto Perez Balladares, on January 25, 1995 to inform the international community and especially the users of the Canal concerning matters related to the preparations by Panama to assume the total responsibility for the administration of the Panama Canal. Subsequently that objective was broadened to include a prospective look at the 21st century to determine the role to be played by the Canal and the challenges it will face; the investment opportunities in support activities for vessels utilizing the Canal and world transportation and commerce; the areas that are utilized by the military services of the United States that are adjacent to the Panama Canal that have reverted or are to be reverted to Panama; and the Panamanian strategy for the maritime sector. The Congress was organized bearing in mind the important role played by the Canal in the economies of many nations and in world maritime transportation and commerce, and was attended by over 1,300 persons, including ministers concerned with economics, high level government officials responsible for the maritime sector, shipping companies, associations of shipowners, shipping agents, cargo owners, chambers of commerce, associations of importers and exporters, port administrators, bankers, lawyers, representatives of international agencies, and representatives of the civil society, comprised of professionals, union leaders, academicians, students and non-governmental organization leaders. It was an event characterized by frank and open dialogue that allowed the participants to express themselves freely. It was an ample opportunity for those responsible for the transition and for planning for the maintenance of an efficient, cost effective, competitive Canal with sufficient capacity to satisfy future demands, to listen first hand to the opinions, criticisms, comments and suggestions of the users and clients.

This Record is submitted as a contribution towards continuing consultation, the exchange of information and the reflection initiated at the Congress. The contributions made at the event enriched the knowledge about the Canal, its infrastructure and its commercial function.

**F. Manfredo Jr.**

*High Commissioner of the Republic of Panama*

*President of the Organizing Commission of the Universal Congress of the Panama Canal*

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## INTRODUCTION

This Record includes the documents containing the presentations by the speakers, a brief summary or the transcript of the discussions that followed the presentation of the four major subjects, the complete discussions during the Users' Forum held during the afternoon session of Wednesday September 10, as well as the speeches made at the inaugural ceremony.

Regrettably it was impossible in all cases to publish in their entirety the many hours of discussions among the participants, speakers and panelists that followed the presentations by the principal speakers and that added flavor to the event. In the summary which we have prepared we hope we have highlighted some of the more important matters dealt with.

Also, for the benefit of clarity and in order to economize space, we have eliminated the protocol portions. The titling of the various papers is our responsibility.



**INAUGURAL CEREMONY**

Honorable Presidents, Lee Teng Hui, Carlos Roberto Reina and Arnolando Aleman; Ladies and Gentlemen:

During the preparatory meetings that preceded the invitations to this Congress, there was debate as to whether it should be described as the second or the first, inasmuch as in Paris in 1879 the International Congress on Studies of the Inter-oceanic Canal was convened to determine the viability of a canal through Central America. Regardless of what the experts and historians may have decided concerning its designation, if that Congress (of 1879) towards the end of the 19th century defined the route, this one at the end of the 20th century shall have an influence on the future of the Canal in the next millennium.

I appreciate the presence at this ceremony of the distinguished leaders Lee, Aleman, and Reina, as well as the ministers, delegates from friendly governments, representatives of the users of the canal, and experts on the subject of the Canal. The contributions that they will make to the deliberations of this congress shall last for many years, and without a doubt will contribute to forging the future of a great structure that is already rich in history. I begin these welcoming remarks with one of the lesser known chapters of that history, but which bears a curious coincidence with today's date.

At 3:30 in the morning of September 7, 1882, this city was shaken by the biggest earthquake to have ever occurred in Panama. One of the towers of the cathedral fell on its roof, and the neighboring buildings, one of which will house the Inter-oceanic Museum, suffered severe damage. It could have been the end of the dream of constructing a canal: the malaria, the overflowing of the rivers, the yellow fever and the torrential rains were already almost insurmountable obstacles. Adding the danger of earthquakes was the equivalent of canceling, perhaps forever, the Panama route. However, Ferdinand de Lesseps was able to dispel the doubts that immediately surfaced in Paris concerning the viability of the Panama project, promising what only he -- and in some measure God -- could guarantee: he told them simply that there would be no more earthquakes. And in fact there have been none.

As incredible as it may seem, that is how this odyssey began, one of whose stellar pages we are now writing.

It was on September 7, 95 years later -- in 1977, but this time in the afternoon -- another event shook Panama once more. Except this time it was not the buildings that were affected, but the spirit and the conscience of the nation itself. On that day, Omar Torrijos and Jimmy Carter agreed that the Canal Zone would disappear and that the Canal would be transferred to Panama at noon on December 31, 1999.

For those of us who had grown with the trauma that Panama would never assume complete jurisdiction over all of its territory -- the governing treaty was in perpetuity -- it appeared unbelievable that eternity was being reduced to 22 years, just as it must have been unbelievable to the French in the century before that a mere mortal could guarantee that there would be no new earthquakes in Panama.

It is just that the history of the Panama Canal and everything that surrounds it are veiled in a halo of fascination, mystery, fantasy, pain and hopes.

Between that earthquake in 1882 and the signing of the Canal treaties in 1977, more than 25,000 people died in the effort to cut through the isthmus; an untold number of Frenchmen were financially ruined watching their savings disappear in Culebra Cut; the hero who had built the Suez Canal, his son and the famous engineer Eiffel were condemned in court; France was shaken to its foundations by an unprecedented scandal; Panama obtained its independence; a president of the United States left his country while in office for the first time, for the sole purpose of inspecting the construction project being undertaken thousands of miles to the south; 539,340 vessels from all over the world crossed from one ocean to the other; and many young Panamanians died in the streets of their country demanding that only one flag should fly over their territory.

Because of the regime that was created surrounding the Canal, the relations between Panama and the United States went from being a virtual protectorate at one extreme, to the other extreme of this small country becoming the only country



of the continent to have severed diplomatic relations with the most powerful nation on earth.

Which other public work in any part of the world can claim such a historical background? It would certainly be difficult to find one. The Panama Canal became a symbol for the aspirations of many people and also became interchangeable with the Panamanian national spirit, to the point where it has been said, and rightly so, that aside from being a modern engineering marvel, the Canal has developed a soul of its own. And even if it has not, at least many of the events in its history have contributed to molding the soul of the Panamanians.

But it is not the earthquake of September 7, 1882, or what occurred thereafter that has gathered us here in Panama. What has brought us together are the events following the signing of the treaties on September 7, 1977, and more importantly, what will take place from now until well into the 21st century.

Three years ago, on this very stage, after swearing to comply with the constitution and the laws of the Republic, I announced to the country that I would convene a congress on this date in order that the users of the Canal may learn first hand of the advances made by Panama in preparation for assuming the responsibility of administering the Canal. It was an announcement as well as a challenge: if we were not ready we could not convene the congress, and by not convening the congress we were in fact admitting our failure.

Beginning on that day we have worked hard and tirelessly in order to be able to say today, as I now declare, with legitimate pride as a Panamanian: Panama is ready to administer the Canal.

I am not proclaiming this as a personal achievement or as an accomplishment by my government. I have kept matters pertaining to the Panama Canal out of the political arena and all discussions and analyses concerning its future have always been given the broadest consultation and examination.

In Panama, as in all democracies, there are many differences of ideas and the frequent political confrontations overshadow the infrequent agreements reached. The Canal enjoys the unusual privilege of being the root of conflicts and at the

same time the source of agreements. Two administrations of opposing political positions and two legislative assemblies elected in different periods and with different majorities, approved a constitutional reform which guarantees financial and administrative autonomy to the entity that will manage the Canal after the year 2000.

Even more encouraging was the approval of the organic law governing the Panama Canal Authority which you will learn about in greater detail beginning tomorrow. Following a prolonged process of consultations with all the political forces, with the organized civil society, and with the labor organizations existing at the present time in the Canal, the legislation that will govern the operation and administration of the Canal after the year 2000 was unanimously adopted by the Legislative Assembly.

While in Panama, those of you who become aware of the political divisions that exist here and the variety of philosophies participating in debates, will find it difficult to comprehend how unanimity could be achieved on such a difficult subject.

The only explanation is the following: when openly and frankly debating matters concerning the Canal, Panamanians are able to set aside our differences and work together to find the best solutions.

I could go on at length about Panama's preparation for assuming control of the interoceanic waterway: about the highly qualified work force -- 92 percent of which is already Panamanian -- about the new authorities -- members of the Board of Directors and the Administrator -- about the future investments, or about modernization programs. But all of these subjects will be dealt with in detail during the next few days.

It is more important for me to take advantage of this extraordinary and unique forum, to emphasize what the statistics or the laws are unable to reflect: Panama, as a nation, as a collective society, and as a State is ready to administer the Canal. The more than 450 years that have passed since a Spanish monarch thought of shortening the distance between Cadiz and Cathay -- between Europe and China -- by crossing the isthmus, have been imperceptibly accumulated in the soul of the Panamanian people. The 115 years since that last





earthquake, which could have obliterated the hope of constructing a canal, and the 20 years that have passed since the signing of the treaty that guarantees its transference to Panama, have strengthened our sense of destiny and historic responsibility.

From that September 7, 1977, Panama has become convinced that once its national aspiration became a reality -- the disappearance of the old Canal Zone -- the only thing left to do was to meet its destiny and administer the interoceanic route for the benefit of world commerce and its own economic development, and strengthen its identity as a nation.

To do so, it was necessary to understand that the era of confrontations with the United States had given way to an era of understanding and cooperation that will facilitate an orderly and imperceptible transfer of the Canal before the year 2000. The users of the Canal will not notice that a change has taken place, but the Panamanians will experience a sense of relief after achieving a dream that has eluded us for 500 years, but began to take shape with clear and well defined features 20 years ago today.

In the next century, after many years of efficient Panamanian administration, when a modern and neutral canal operates every day to the satisfaction of its users, today's date will be perceived with the same historic respect with which we look at that Congress of Paris in 1879 when the experts of that time concluded that the construction of a sea level canal through Panama was feasible.

I am sure that at some future time someone will be tempted to remember that on a September 7 -- the one in 1997 -- presidents, ministers, businessmen and experts from all the continents met in Panama to discuss the existence in the 21st century of the project that began when a French dreamer decided -- on a September 7 -- that there would be no more earthquakes here, and its transfer to its legitimate owner began when an American President and a Panamanian Chief of Government decided -- on another September 7 -- that eternity could be reduced to 22 years, of which there remain today only 845 days.



It is with great satisfaction that I visit the Republic of Panama invited by Panama President Ernesto Perez Balladares, and participate in this transcendental and historic Universal Congress of the Panama Canal.

The construction of the Panama Canal represents the main accomplishment of technology and human intellect, the meaning and historical repercussion of which has been immense, not only for the level of difficulty and dimension of the work, but because of the advantages and wealth that it has brought to humanity. The Panama Canal shortened the geographic gap between the Pacific and Atlantic oceans, and has been a great contribution to world shipping, commercial development and economic progress.

The Panama Canal will enter a new historical era at the end of this century, when the transition process between the United States and Panama will be completed and the Canal transferred to Panamanian stewardship. We are confident that under the wise supervision of President Perez Balladares, and the meticulous dedication of the Panamanian people, the Panama Canal will experience a completely new phase of its administration and operation, and will provide even more efficient service to world shipping, economy and commerce.

We understand that the main purpose of this Congress has been to analyze the continued administration of the Panama Canal beyond the year 2000. We believe that through our effort and dedication, all of us being government leaders, specialists or academicians, we will reach to viable conclusions that will allow the Canal to better adapt to the needs of international commerce and economy in benefit of the world.

The Republic of China has always been interested in participating in international activities in order to assume its responsibility and obligations to the international community. As a loyal friend of the Republic of Panama and one of the Canal's main customers, our nation wishes to offer all the cooperation needed along with the different governments of the international community, to make a joint contribution to the sustained administration of the Panama Canal.

In this spirit of fraternity and solidarity I express my best wishes for the success of this Congress and for the personal health and well-being of all present.



Two distinguished men from America, Simon Bolivar, spiritual father of integration, and Jose Cecilio Del Valle, a distinguished Honduran, foresaw over 150 years ago, the very important role that Panama would play as a result of its privileged geographic position.

Over 500 years ago, Vasco Nuñez de Balboa discovered the Pacific Ocean, which opened new roads to adventure and hope. This historic event was the beginning of transisthmian travel, with Portobelo as the Atlantic terminal and the noble and loyal city of Panama as its counterpart on the Pacific Ocean.

No other nation on the planet has been so closely tied to its geography as Panama. It has been a way station for over five centuries. On November 18, 1903, a treaty was signed between the United States and Panama for the construction by the former of a canal across the isthmus that would join the two oceans. This impressive feat of engineering, as stated by James Bryes, is the greatest liberty that man has taken with nature.

The Universal Congress, for which we have gathered here today, has received the backing of the International Community. On November 7, 1995, the United Nations General Assembly unanimously adopted Resolution 50/12 on the Universal Congress of the Panama Canal, exhorting its Member States to provide their generous support for this event.

As a result of the Torrijos-Carter accords signed on September 7, 1977, at noon on Friday, December 31, 1999, the Republic of Panama will assume the administration of this important waterway. Thousands of men from many nations worked and died in the construction of this route, which is dedicated to all humanity.

Bolivar and Del Valle were not wrong. As we come to the end of the century, this region of the hemisphere of this globalized world is called upon to serve as the bridge of brotherhood between the nations of the earth.

Honorable Presidents, and friends, we are convinced that the Panama Canal shall always be an area of peace. But more importantly, I have no doubt that the Panamanians, the Panamanian

People and its Government, will be equal to this historic challenge that history has placed before them, and will fulfill their responsibility with efficiency and with dignity.

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When my good friend, the President of Panama, Doctor Ernesto Perez Balladares, invited me to participate in the Universal Congress of the Panama Canal, which we inaugurate today, I accepted with great pleasure and without the slightest hesitation. This is not only a well deserved vote of confidence regarding the government of Panama's capacity to independently and completely manage an enterprise as difficult and complex as the interoceanic waterway, but also a demonstration by Latin Americans that we can assume great responsibilities in this world of globalization and interdependence.

Also, by supporting Panama, we are strengthening our credibility as Central Americans and invigorating the recent Managua Declaration, which proclaimed the first steps towards the political integration of the countries of the isthmus. It has been an struggle and a goal, which had the continuous and fraternal support of Panama.

Let me, therefore, wish the greatest success for the endeavor which today begins the countdown towards the control of the Isthmian Canal by Panama, placing it at the service of world commerce, with efficiency and responsibility. As Central Americans we are proud of the Panamanian government and of its leader, Doctor Ernesto Perez Balladares who is steering the ship of State with a firm hand.



It is a great pleasure and an honor for me to participate in the inaugural ceremony of this Universal Congress of the Panama Canal, which is being held a little more than two years before the historic moment established in the Torrijos-Carter Treaties, when the Government of Panama will assume full responsibility and jurisdiction over the Canal.

Panama, the most important bridge between two oceans and between two subcontinents, regains definitive possession of its political, strategic and international economic role.

I have accepted with great pleasure the kind invitation offered by President Perez Balladares to participate in the Universal Congress, in order to set forth the political and economic interest that, as one of the Canal's most important users, Europe has concerning its future.

Everyone knows that the Canal plays a strategic role in the commercial trade that Europe has not only with Asia, but also with the entire Pacific Rim. The Canal also plays a strategic role in the trade between Europe and Latin America, and its efficient operation is fundamental to the economies of the Latin American countries. Therefore, Europe as the second commercial partner of Latin America, based on the importance of the interoceanic waterway, must adopt a position regarding Panama that is consistent with this importance.

The Canal constitutes an indisputable relative advantage for Panama and its future status offers, without a doubt, a great opportunity for the development of the country. In addition, there is no doubt whatsoever that under its new law, this geopolitical area will become the center of interest for Governments, financial institutions and the private sector.

Europe is called on to play a part in light of the historic ties that unite our two regions. The Isthmus and Europe share a common heritage, generated by the confluence of historic, cultural and commercial factors that go back in time. Also, the Canal shall always be associated with the creative genius of de Lesseps. This relationship acquires a new perspective in this decade.

After the democratization of Panama, the European Union set in motion an initiative of signifi-

cant cooperation with the general objective of supporting the development of the country.

In the last two years special attention has been given to matters regarding the Canal for the purpose of supporting the Panamanian authorities in this important phase of transition and at the same time to reinforce the European presence in the region.

A year and a half ago, Mr. President, as part of your official visit to Brussels, we organized a round table on "The European Union and the Panama Canal on the Verge of the Year 2000," with the participation of representatives of the European private sector. At this event we presented the results of a study financed by the European Union concerning the new investment opportunities offered by Panama.

Since then, the growing interest of Europe in the future of the Canal has led to the support of the organization of this Congress that gathers us here today.

The European Union's cooperation has also permitted the creation of the Panama Canal Museum, whose permanent display will show how the Canal, in addition to being a great engineering feat that consolidated the interoceanic route, is an accomplishment that has decisively influenced the history, the society, the culture, the economy and the environment of Panama.

As of now, two important and fascinating challenges face Panama:

On the one hand, to adapt the present Canal to the new demands of international maritime transportation. On the other, the adaptation of the "Reverted Areas" that previously had a primarily military function, for civilian use.

The first of these challenges affects particularly the future prospects of the Canal. Towards this end and in the interest of choosing an alternative for development of the Canal, the European Union has financed a study of the long range maritime traffic projections.

Starting with the review and updating of the results of the study conducted between 1986 and 1993 by the Tripartite Commission formed by Panama, the United States and Japan, the long



range development trends and the anticipated evolution of the world fleet were evaluated. The results indicate that the expansion of the Canal must be in place, not in the year 2020 as had been projected, but instead will have to be brought forward a certain period of time.

On the other hand, these results confirm that the most viable option for expanding the capacity of the Canal is a third set of locks that will permit the transit of vessels of up to 150,000 tons.

This means that we will be faced with projects of great magnitude that will have to be completed in a relatively short period of time. As Mr. Manfredo indicated, this will be a crucial point in the discussions in the next few days.

Regarding the adaptation of the Canal Zone to civilian use, the overall Panamanian initiative in this regard is based on a strategy that involves four key elements: maritime activities, processing zones for exportation, tourism and the creation of the "City of Knowledge".

The European Union has supported this last element in particular, by means of a definition of the scope of the "technological park" that would be the nerve center of the private investments in advanced technologies. It should be pointed out that the "City of Knowledge" could result in Panama becoming an international center for services in the fields of education, research and innovation.

Honorable Presidents, Honorable Ministers,  
The process that has been undertaken, with all of its ramifications, updates and opens new perspectives for the development of the Panamanian economy, and it can once again count on the European Union as an active and respectful partner in the development of this new reality which will undoubtedly be for the benefit of the country



Thank you and good evening. President Balladares, Heads of State, Ladies and Gentlemen. It is an honor to be here on behalf of President Clinton. And thank you, Mr. President, for hosting this important Universal Congress on the Panama Canal. Distinguished guests, and representatives of the global maritime industry, please know that I am also pleased to join Mack McLarty, the President's Counselor and Special Envoy to the Americas, as the co-leader of our U.S. delegation.

We are clearly living in a time of tremendous hope for the peoples of the Western hemisphere. The United States has many friends and allies around the world. But there is no more closer alliance, no more natural partnership, than here at home with our fellow Americans.

Democracy, open markets, and a commitment to peace are the common values that now rule our hemisphere.

In Latin America, where just a decade ago we saw civil wars and only the barest of reforms, we now see peace agreements and irreversible economic reforms. Today we see more spending on education than on military might.

Thirty-four of our 35 nations are democratic. From the Barrow Point of Alaska to Tierra del Fuego in Argentina, we are a market of 800 million people.

We generate over \$9 trillion dollars in economic activity. And every day, in every way, we grow closer by more liberal rules of investment and trade, rules which are creating trade opportunities that will benefit our people.

This is an exciting time for our region. We have "dazzling opportunity to build a community of nations," as President Clinton likes to say, for we are partners, standing shoulder-to-shoulder at a defining moment in history.

The Miami Summit in 1994 created an unprecedented framework for cooperation. I joined Mr. McLarty with the President in April of this year as we strengthened our partnership in Mexico, Costa Rica and the Caribbean. And we'll do so again next month in South America and later in Santiago at the Summit next March.

Mr. McLarty announced earlier today that our First Lady, Hillary Rodham Clinton, will attend the Hemispheric First Ladies' Summit in Panama next

month to continue to build on this powerful, and growing, and positive relationship.

Today we come together exactly on the day, 20 years ago, that a new era of understanding and friendship opened with the signing of the Panama Canal Treaty.

And I believe President Carter was right when he said, as he prepared to sign the treaty, that the agreement was "a symbol for the world of the mutual respect and cooperation among all our nations."

And that is the spirit we're seeing as Panamanians prepare to take over control of canal operations from the United States on the last day of the 20th century.

I toured the canal this afternoon, along with Mr. McLarty and others. And I talked with Panamanian and American officials. I saw some of the results of the billion dollar program to update the canal for the challenges of a new century, a new millennium. I was impressed with the progress. And I am convinced, Panama will be ready to take charge.

For 83 years, the Panama Canal has been open to all nations, providing a cost effective route for thousands of ships every year. And our Panamanian partners, as you, too, will learn, are prepared to keep it that way in the future.

The canal is a global asset. It is a vital transportation artery, known by mariners as the best short cut in the world. Some 4 percent of global, ship-borne commerce passes through the canal.

Transportation is the tie that binds. It is the means by which we pursue happiness and access to opportunity. And the canal binds our nations and our economies together as one.

But governments cannot do it alone. We need you, the users of the canal. We need you as our partners to work with us, to tell us of your needs, to help us make the canal—your canal—as efficient and as well run as it can be.

So we look forward to working with you during these meetings, and in the months and years ahead, to ensure that our best days and the best days of this canal, the Panama Canal, the world canal, are yet ahead.



I am delighted to have this opportunity to bring greetings on behalf of the President and to represent the U.S. government before the people of the Republic of Panama, representatives of the world's maritime nations and community, and the workforce of the Panama Canal. With our distinguished Secretary of Transportation Rodney Slater as co-head of the U.S. delegation, we have come to celebrate 20 years as well.

Mr. President, distinguished guests — we find ourselves truly at a unique moment in time. Our hemisphere is growing together at a pace once unimagined. As we celebrated at the 1994 Summit of the Americas in Miami, all countries in our hemisphere—with one obvious exception—have agreed to a common agenda of shared values and common interests. And we are working hard to ensure that the upcoming Summit of the Americas in Santiago de Chile will solidify hemispheric relations and cement our common future.

As all of you so well know, our world is changing, and with it the lives of men and women across the hemisphere. For the first time, millions of people newly enjoy expanding opportunities under democratic governments, open markets, and increasing respect for human rights and the rule of law. And as the Free Trade of the Americas will expand trade and deepen relations, we believe the Panama Canal—the crossroads of the Americas—will be a key to our continued growth and economic success.

The people of the United States have always viewed the Canal as a symbol and as an example of what men and women of determination can achieve in the name of peacetime enterprise and commerce. As you saw earlier workers from North and South America, the Caribbean Basin, Asia, and Europe came together as one to literally move mountains, creating a magnificent path between two mighty oceans. It is a legacy, an enduring legacy of the very best the people of the United States and the world have to offer.

Those of you who are attending as representatives of the international shipping community will understand the growing interdependence of the global economy and the Canal's continued value to world trade. As you participate in this historic conference in the coming days, you will find that

Americans and Panamanians together have diligently labored to ensure the waterway is fully adapted to the needs of the onrushing 21st century.

In a little more than two years, the responsibility for the Canal will pass to the Government of Panama. We are confident you will receive the same world-class service under Panamanian administration as you have come to know and expect under the Panama Canal Commission. And, as we committed to do when the Treaties were adopted, the Government of the United States will continue to work closely with the Government of Panama in the coming years—and with all interested parties—to ensure the Canal remains open at all times to shipping from across the world.

As we move into the new millennium, our attendance at the Universal Congress is a tangible and important expression of our resolve. We join together this week to clearly and confidently define the future.





Address by H.E. Madame **MICHELE DEMESSINE**, Vice Minister of Tourism  
at the Ministry of Public Works, Transportation and Housing of the French Republic

It is a great honor for me to participate at the Universal Congress to discuss the future of the Panama Canal.

I understand the importance of this interoceanic way for world economy and fast maritime exchange, but also for harmony amongst peoples.

France has played an important role in the construction of the Canal, more than one hundred years ago, at the Paris Universal Congress in August 1879. Our fellow country man Ferdinand de Lesseps determined the work and began construction. It was a hard task. It was filled with multiple obstacles, since in addition to weather conditions, there were land slides, diseases, an earthquake in 1882, as well as insurrection at Colon in 1885. A great number of Frenchmen gave their lives to accomplish this difficult task.

In 1904 the United States continued the search for a route through the Central American isthmus and completed the work. The United States has remarkably administered the transit of vessels since 1914. The Canal is for the benefit of the whole world, as the Panamanians say, it was the result of the "era of progress."

At this time of globalization, this waterway will have to be modernized and adapted to the continuous evolution of transportation.

France encourages all initiatives to modernize the Canal and I am satisfied with the idea of holding this Congress, which summons the majority of users of the interoceanic canal. They are willing to participate in the decision making process, organized by Panamanian leaders in order to face the new demands of world seaborne trade and increased traffic, due to the increase in vessel size.

It is a great challenge I am sure Panama will be able to face to maintain the Canal for the rest of the 21st century as one of the privileges of international trade.

I noted with interest the different projects that are taking place for the benefit of trade and the modernization of other transportation means, such as, the renovation of the railroad that runs along the Canal that will allow from now to the year 2000 the passage of approximately one million containers.

We would like to congratulate the number of projects to be implemented at the "reverted areas,"

such as the "City of Knowledge," which shall assemble various research institutes and which I am sure will contribute with their knowledge to the continuation of the modernization of the interoceanic way.

This international Canal requires independence and neutrality. France is confident that the transmission will be harmonious. Furthermore, there is the guarantee made by the United States of America and the Republic of Panama, in keeping with article IV of the treaty, to decisively contribute with a permanent state of neutrality of the Canal. France has signed the adhesion instrument to the treaty's Protocol, signed by General Omar Torrijos and President Jimmy Carter on September 7, 1977.

I would like to thank you Mr. President, on behalf of the President of the Republic and Government of France, for inviting us to this important event, which I do not doubt will be a success.



As the High Commissioner and President of the Organizing Committee appointed by the President of the Republic of Panama, Dr. Ernesto Perez Balladares, it is my honor and privilege to welcome you to the first Universal Congress of the Panama Canal. The tight agenda includes the transition of the Panama Canal and its transfer to total Panamanian jurisdiction, the current status of the waterway; the role it will play in the 21st century, the challenges created by this new century, the capacity to meet the projected long range traffic demands, the opportunities offered by the areas and installations adjacent to the Canal, the use and ownership of which are reverting to the Panamanian state and jurisdiction opening a broad range of activities and services that our Isthmus can offer to world transportation and commerce.

The Universal Congress of the Panama Canal is the beginning of a democratic and open dialogue that designs the model and style of management of the Panama Canal under Panamanian jurisdiction: maintaining permanent contact with the clients and users of the canal.

Beginning tomorrow, we will embark on three days of intense work developing the topics and sub-topics of an agenda that was prepared, following broad consultations. To ensure that no important topic is overlooked, on the final day of meetings there will be an open users' forum, to give everyone present the opportunity to ask whatever questions they may have or request any clarifications on the administration of the Canal by Panamanians. It is our profound wish, and this was a specific task assigned by President Perez Balladares, to ensure that you will leave here and return to your countries entirely convinced that the time and resources you contributed in attending this event were well spent; that any doubts you may have had before coming here have been favorably resolved; that you have had the opportunity to contribute your knowledge and experience in the future planning of the Canal; that you have been alerted to the challenges that shall face the waterway in the future; that you will be able to plan the movement of your cargo knowing that the Canal will continue to guarantee the shortest, safest and most economical route, for successfully competing in the international markets; that the wa-

terway will have the capacity to meet the traffic needs of the 21st century; that the change in administration on December 31, 1999, will in no way affect its efficiency or its cost effectiveness; that there exists in Panama a commitment by the government, the civilian sector and the political sector to continually strengthen the democracy of our country, and to keep the Canal free from partisan politics.

Because of time constraints, some of the topics will be dealt with in a general way. However, we have made sure that their presentation and debate will be such that you will be satisfied. However, if at the end it is concluded that a topic requires more time, we will explore together the mechanisms that will allow us to continue dialogues after the Congress. This is only the first of these events. We visualize many more in the future. The experience we will gain on this occasion will allow us to make it better each time.

This inaugural ceremony is being held on the date when, twenty years ago, two world leaders, Brigadier General Omar Torrijos Herrera, then head of government of Panama, and Jimmy Carter, then President of the United States, signed the Panama Canal treaties in which it was established that at noon on December 31, 1999, the administration of the Panama Canal and all of its assets will be transferred to Panama. That historic event corrected a situation that had become obsolete with the passing years and had become a source of permanent conflict between the two countries. During the last twenty years the Republic of Panama and the United States have been engaged in a harmonious relationship and in a spirit of mutual cooperation in order that the transition be imperceptible to the users and clients of the waterway. The treaties provided the bases for the efficient operation of the Canal under stewardship of the United States until the end of the century and for Panamanian administration thereafter. The treaties ensure that over the long range the Canal will have an effective administration, a qualified labor force and a healthy financial base, which are three essential elements for the success of any industrial enterprise. In the next three days you will become aware of how these three objectives have been achieved.



To the many recognitions that will be made to the French and Americans during the Congress, we must include a very special one to the men and women that came from the West Indies by the thousands to dig the "big ditch." They were the men who had to bear the rigors of the burning sun and torrential rains, the clouds of dust in the dry season, the deafening noise made by the constantly working locomotives, and being constantly exposed to premature dynamite explosions, land and rock slides and overflowing rivers. These men have a special place in the Canal and in our hearts.

On behalf of all of us who participated in the organization of the Congress, we extend to all of you our most cordial welcome. We wish you a very pleasant stay in our country, and we augur all of you three days of productive dialogue.





In his speech yesterday President Perez Balladares stated very clearly that Panama is prepared to efficiently administer the Canal. Throughout the next three days we will expand and explain the scope and importance of that statement, for the benefit of our visitors as well as for Panamanians interested in the future of the interoceanic waterway.

This Congress has been convened to commemorate twenty years of the Torrijos-Carter Treaties and in recognition of those who made the dream of joining the two oceans a reality. That recognition is directed at all who participated in the project: the workers who came from the Caribbean islands and the thousands of anonymous heroes who left their sweat, their innocence, their experiences and in many cases, their lives in Panama. Although there is no way to adequately summarize the magnitude of the construction of the Canal, the United States and France, in a way, sum it up by the determining importance of the role they played in the execution of the project. For that reason I applaud the presence today at this first working session of the delegation that came from France, headed by the Vice Minister of Tourism, Public Works, Transportation and Housing, Michelle Demessine.

From a strictly legal point of view, the Canal is today an American government agency. The governing statutes, aside from the Treaties, are American. Therefore, what will occur at noon on December 31, 1999 is that the American statutes will be replaced by Panamanian laws and regulations. The transfer is that simple, and yet that complicated. The same employees working on December 31, 1999, will be there on January 1, of the year 2000. The same professionalism and the same standards of excellence of safety will continue. Only the rules will be different. For that reason, while the Canal Commission was taking internal administrative steps to guarantee an imperceptible transfer of the waterway, the Panamanian government concentrated its efforts in providing the Canal with the legal infrastructure that would allow it to operate after the year 2000. We have been at this task for over five years.

Nine new articles were added to the Political Constitution of Panama in 1994 to guarantee that

the Canal Authority would have administrative and financial autonomy, that the conditions of employment of the workers would not be affected, that its budget would be separate and apart from the national budget, and that traffic through the Canal could not be interrupted for any reason. The constitution also provides that only laws of a general nature concerning the Canal could be established, which would subsequently be implemented by means of resolutions by the Board of Directors.

This provision is unique and extremely important. Laws in Panama are regulated by the Executive Branch. Those pertaining to the Canal will be regulated by the Board of Directors of the Canal Authority, which has been conceived in such a way that in the future no government will have the authority to designate the Board in its entirety. Joining us today are distinguished members of the Board of Directors of the Authority whom I would like to introduce to you.

I would like to emphasize that the President of the Republic and the Cabinet Council have agreed that the four Panamanians that are currently members of the Panama Canal Commission, as well as the three members of the Consultative Committee -- a binational consulting entity created by the Torrijos-Carter Treaties -- have been designated for the new Board for the purpose of providing continuity to the work we perform jointly with the United States and which in the future will be the sole responsibility of Panama.

Implementing the constitutional provision, on June 11 of this year the Legislative Assembly unanimously approved the organic law for the Canal Authority. That law, which consists of only 133 articles, establishes the general guidelines which, I repeat, will be subsequently regulated by the Board of Directors.

As you might expect, the law covers all the different aspects of the operation, maintenance and protection of the Canal, and it is, therefore, impossible to explain them all in these introductory remarks. However, I would like to refer to certain aspects of the law which are essential to the confidence and trust of the users.

In the first place, the labor strikes. The new law establishes mechanisms for resolving labor conflicts and absolutely prohibits labor strikes. In



the long process of consultation that we undertook before the law was approved, it was clearly established that on this point there would be no compromise. We understood -- and we continue to understand -- that the constitutional provision leaves no room for errors. The constitution states: REGARDING ESSENTIAL PUBLIC INTERNATIONAL SERVICE PROVIDED BY THE CANAL, ITS OPERATION CANNOT BE INTERRUPTED FOR ANY REASON, and from that language it is concluded that labor strikes are not an acceptable mechanism for resolving labor conflicts that could arise in the Canal.

No less important is the procedure established in the law for setting tolls. The Neutrality Treaty signed by Panama and the United States and adhered to by many countries -- the most recent being France which did it yesterday -- established that THE TOLLS AND OTHER RELATED TRANSIT SERVICES SHALL BE FAIR, REASONABLE, EQUITABLE, AND CONSISTENT WITH THE PRINCIPLES OF INTERNATIONAL LAW. In accordance with our constitutional provision, the tolls shall be set by the Board of Directors, subject to the final approval of the Cabinet Council. What the law has established, in order to maintain the system which has been in effect until now, is the obligation to conduct public hearings with the users before modifying the tolls or the admeasurement rules for vessels. The Panamanian directors have witnessed the advantage of the consultation process and the convenience of broadly publicizing proposed modifications prior to being made effective, in order to give interested parties the opportunity to express their opinions.

Of course, this Congress does not intend to discuss the tolls policy that will prevail after the year 2000, inasmuch as that is a responsibility to be exercised in the future by the Board of Directors of the Canal Authority. However, I believe that this is an appropriate opportunity to listen to opinions concerning the consultation mechanism, its effectiveness, its inconveniences and ways to improve it.

The need to maintain permanent contact with the international maritime community, with the users and clients, caused the new legislation to include the creation of an Advisory Board of the Ca-

nal Authority. We expect that it will serve as a conduit that will allow the Canal to receive the benefits of the experience and the knowledge of men and women throughout the world who are willing to share them.

I would like to limit my comments to these three interesting aspects of the law; however, I will be happy to respond to any questions you may have concerning these and any other subjects.

Having approved the law two and a half years before the transfer will permit not only its broad publication, but will also provide sufficient time for the new Board of Directors to adopt the necessary regulations for the operation of the Canal which will replace all of the current governing American legislation.

One final word. It is true that the transfer of the Canal will occur at a precise moment and that, in summary, it will only represent a change in legislation. Whatever occurs before noon on December 31, 1999 will be governed by American law, whatever occurs after that date will fall under Panamanian law. The matter is as simple and yet as complex as that.

But the transfer of the Canal to Panamanian hands is much more than the change from one jurisdiction to the other, or as might be stated in more commercial terms, the substitution of employer of the change of owner.

Assumption of the total administration of the Canal has for Panamanians a much more profound significance, which has to do with our national self-esteem, with our identity, with our history and with our future. Panama no longer sees the Canal as a source of confrontation with the United States. No longer does it perceive the Canal as a panacea for all of its needs. Perhaps the best demonstration of this feeling is contained in the instruction which President Perez Balladares gave the Panamanian directors towards the end of 1995. That year, the operation of the Canal showed a significant difference between the budgeted income and what was finally obtained. Based on the terms of the Treaty, that excess was to have been turned over to Panama. But in spite of the many budget limitations and unsatisfied needs that exist in Panama, President Perez Balladares ordered that the totality of that excess was to be used to accelerate the modern-



ization programs of the Canal, that they should be reinvested in the Canal. And that was done, and I saw it as my duty to emphasize this because of the importance that decision should have for the users of the international waterway.

The twenty years that have passed since the signing of the Torrijos-Carter Treaties -- that many considered as perpetuity in disguise -- has served for Panamanians to give the Canal the place it deserves and in accordance with the expectations that the international maritime community has concerning the Canal.

When the Canal Treaties were being debated, there were political factions which asked the people to vote against them. One third of the voters did so. Today, all political parties, including those that requested a negative vote when the Treaties were submitted to a referendum, demand their strict compliance, in tacit recognition of their benefits. But at the heart of that demand lies the intimate conviction of all Panamanians that in effect, and as President Perez Balladares proclaimed yesterday, Panama is ready to administer the Canal responsibly and efficiently.

*• H.E. Dr. Jorge Eduardo Ritter is Minister of State for Canal Affairs, Member of the Board of Directors of the Panama Canal Commission and Chairman of the Board of Directors of the Panama Canal Authority*

844 days from today—at high noon on December 31, 1999—85 years after it first opened to traffic, the Panama Canal will transfer to the Republic of Panama. This past July 1st, the world witnessed a similar historic moment for another maritime hub by the transfer of Hong Kong to the People's Republic of China after 150 years of British rule.

Hong Kong was news because in our global economy, that transition affects shareholders and stakeholders around the world. The hong kong transfer was an enormous effort, accompanied by much scrutiny. Likewise, the closer we get to the millenium, the more nations will focus on the Panama Canal's transfer and on Panamanian stewardship. Economic, political and media interest is already tremendous—and the stakes are high. For some—Ecuador, Peru and Chile—they are critical.

Businesses, markets and investments are affected by bottom line decisions based on customer confidence in the outcome of the transition. Just as important, the credibility of the United States and Panama are at stake. With this transition, there will be no second chance.

Today, we meet in the second Panama Canal congress in history, the first in this century. The first congress in Paris in 1879 convened to determine where and how to build the Canal. The 1879 congress decided the right answer was to build a sea-level Canal. As you saw in the wonderful video at the opening ceremony last night, after a truly heroic french-led effort that completed some of the most difficult excavation at a cost of 20,000 lives, it became clear that a sea level Canal would not work -- that locks would be required. So we got a second chance and built three sets of locks.

Sometimes we get a second chance. Last year early one Saturday morning when she was 4 years old, my little daughter Kelsey brought a book to me and asked: Daddy, would you read me this story?" — sorry to tell you this, but my answer was: "why don't you ask Mummy?" — so Kelsey went to her mom and asked: Mummy, can Daddy read me this story?"

So I got a second chance. With this transition, we know we only have one chance to get it right.

Permit me to focus on three aspects of this transfer — political, national security, and eco-

nomc — and highlight specific initiatives undertaken to achieve a smooth transfer, and promote success in the 21st century.

Politically, except for the North American Free Trade Agreement (NAFTA), no U.S. treaties are more visible in the Western Hemisphere than our treaties with Panama.

Every American administration since President Carter's has reaffirmed our commitment to a successful transition of the Canal. To that end we will honor the letter and spirit of the Panama Canal Treaty and the Neutrality Treaty. Both countries are focused, firmly committed, and on track to a successful Canal transfer in little more than two years' time.

Turning to the national security aspect, while the Canal has importance to certain aspects of our national military strategy, use of the Canal is no longer vital to that strategy. There are no foreseeable military threats to the Canal. In the very unlikely event such a threat were to materialize, both the United States and Panama are committed by the neutrality treaty to defend the Canal.

We can, however, foresee nonmilitary threats — terrorists for one, or transnational criminal organizations for another. The Canal is well protected by a highly trained security force and an extensive state-of-the-art surveillance system to guard against those threats. But no asset is immune, as the world was sadly reminded by the World Trade Center in New York City, the subways of Tokyo, and Oklahoma City. We can never afford to relax our vigilance.

The bottom line is the United States and Panama are committed to Canal neutrality [as Doctor Jorge Ritter stressed]. For 83 years the United States has delivered neutrality and non-discriminatory access to this Canal for all nations. The Panamanian organic law preserves this cornerstone.

It's important to realize that the Treaty-mandated return of U.S. military properties and facilities to Panama is a completely separate process from the turnover of the Canal. It's also fundamentally different in nature.

The turnover of U.S. Military properties more resembles an entity that's going out of business. Panama is finding new, non-military, commercial





uses for those lands and facilities. In contrast, the Panama Canal will transfer as a going concern. The Canal will continue to operate as a commercial enterprise, and provide the same core service to the same customer base.

The Canal's economic importance, especially to the United States, is clear. To highlight just a few key facts:

- Over sixty-five percent of all cargo transited comes from or is destined for the United States.
- Over the last decade [1986-1996], the dollar value of U.S. exports to Latin America — much of them transiting the Canal — grew at an annual average of thirteen percent, a growth rate more than three times that of the dollar value of U.S. exports to Europe.

Heavy Canal users include key Far East and Pacific Rim trading partners of the United States. In terms of total cargo transited in Fiscal Year 96, Japan ranked second; the People's Republic of China, fifth; the Republic of Korea, seventh; and Taiwan was ninth.

Tomorrow morning Alberto Aleman will be addressing global maritime commerce in some detail.

Efficient Canal operation is critical to U.S. trade, and absolutely vital to the maritime commerce and economies of many nations. More than eighty international trade routes transit the Canal.

For the past two fiscal years, the Canal has achieved record cargo levels — 190 million long tons in 1995 and over 198 million long tons in 1996.

We fully expect worldwide economic growth to stimulate Canal traffic well above the historical trend, due primarily to expanding markets in Latin America and the Pacific Rim.

One final point on the economics of the Canal. The Panama Canal does not depend on, indeed does not even use, any U.S. taxpayer funds. Since its inception, the Canal has been entirely financially self-sufficient.

Let me turn now to what the Panama Canal Commission, as a U.S. governmental entity, has done and is doing to transition this Canal so that it operates even more efficiently in the next century.

First, I would note that we are executing a comprehensive transition milestone plan which is available to everyone to see, and we are empha-

sizing much greater openness to our customers -- and much greater responsiveness to customer input.

The 1977 Treaty specifies the Panama Canal "...shall be turned over in operating condition and free of liens and debts, except as the two parties may otherwise agree."

So our first requirement is tested and met literally every day. The Commission's core focus is providing safe, reliable, high quality, cost-effective transit every day. The Canal maintains a high throughput of vessels, and in eighty-two years has never closed -- not one down day since 1915 for maintenance. No other transportation artery in the world comes close to that record of continuous service.

We're constantly performing long-term strategic and transition tasks, but never at the expense of our laser focus on day-to-day transiting operations. We have one operational aim — perform routine maintenance and improve future capacity without disrupting shippers' schedules.

That robust maintenance requires careful planning and execution. This important topic will be covered in detail in session two, but I'll make just a few points here. The magnificent engineering marvel known as the Panama Canal has been overhauled and refurbished many times. The U.S. Army Corps of Engineers helped plan and construct the Canal. In 1995, the Commission initiated a ten-month infrastructure audit by the Army Corps of Engineers to review the pace and substance of our ongoing capital program.

The Corps of Engineers worked hand-in-hand with a blue-ribbon panel of Panamanian engineers. This joint, ten month study confirmed the overall sound condition of the Canal, and helped us refine the pace and priorities of our billion dollar capital improvement program over the next seven years of operation.

Our biggest undertaking is to widen the narrowest eight-mile stretch of the Canal known as the Gaillard Cut — a major step in improving traffic flow and Canal capacity. Tom Drohan of the PCC will cover this project in full this afternoon. The original target date for completion was 2014. Because of our traffic projections, we have accelerated the completion date to 2002.

The capital improvement maintenance and modernization programs comprehensively address all aspects of Canal infrastructure. Ultimately, with the other improvements, by 2002 Canal capacity will increase by twenty percent, and provide average Canal water time under twenty-four hours.

As to our second requirement — “...free of liens and debts” — the Commission is exceeding Treaty requirements. For example, the Commission adjusted tolls -- an increase that was frankly unpopular — to ensure the Canal would accommodate future shipping needs under Panamanian stewardship. We did not pass on to Panama a hidden debt in the form of an unfunded need. This increase generates the additional funds for the modernization and capital improvement program, and maintains the “break even” fiscal policy of PCC Canal operations. The Commission has also developed reserves for other foreseeable contingencies.

Responding to the Commission, the U.S. Congress passed legislation in February 1996 that changed the Commission from a U.S. government agency to a government corporation -- a profound change in organizational character and management. The legislation eases transfer of the Canal to Panama, and allows the Canal to employ the best modern business practices.

Additional U.S. legislation enhances continuity. It permits Mr. Aleman, the Commission's Chief Executive Officer, to continue as administrator of the Panama Canal Authority, the PCA. It establishes a Board of Contract Appeals to begin functioning in 1999 and continue under the PCA. It allows U.S. government agencies to continue supporting the PCA on a cost-reimbursable basis after 1999.

The Commission conducted a top-to-bottom reorganization study and manpower assessment, and is now making changes to streamline the organization.

Those and other efficiency initiatives save money, and ensure the Commission optimizes revenues to give customers the quality service they pay for and have every right to expect.

Panama, in full partnership with the United States, has matched Commission efforts to achieve a smooth transition and continued world-class ser-

vice. You just heard from Dr. Jorge Ritter, Chairman of the Panama Canal Authority, about Panama's enactment of the organic law that will govern the PCA. The Commission strongly endorses that landmark legislation, and the very inclusive process by which it was developed.

Key provisions of this law include preservation of:

1. the personnel merit system;
2. the competitive “best product for best price contract and procurement policies; and
3. autonomy of the Canal organization, to include a Canal budget separate from the government's budget.

Most important of all, the law maintains the Canal's historic neutral, non-discriminatory status as a truly international waterway, a waterway open to the commerce of all nations. In that regard, I think the Organizing Commission deserves credit for inviting all of the world's maritime nations to this open forum to discuss and review the operation and future of the Panama Canal.

The bottom line is that the Commission and Panama remain firmly on track for a successful transition. The importance of that fully binational effort can be captured in one word -- continuity. The goal -- a goal that I am very confident will be achieved — is a change in stewardship that will be invisible to customers in terms of Canal operations and management.

In many respects, much of the transition has already occurred. Ninety-two percent of the Commission's employees are Panamanian. The Commission has a great binational leadership team, both on the Board and in management.

In short, Panamanian leadership and management is in place now. They are well-versed in Canal affairs and well-experienced, and committed to continuity of operations. At the top is Dr. Jorge Ritter, my fellow Board member and Panama's Minister for Canal Affairs.

He will be joined by other Panamanian leaders with whom the Commission has worked closely. The nine other nominees to the PCA Board of Directors, include the other three Panamanian PCA Board members, one previous Board member from the labor sector, three distinguished Panamanians who have served for several years on both the Con-



sultative Committee for Canal-related treaty matters and on Panama's Transition Commission for the Canal, and also a member of the Blue Ribbon Commission that teamed with the Corps of Engineers infrastructure study.

The continuity of that board is enhanced by a top-notch Panamanian management team led by Administrator Alberto Aleman, one of Latin America's most distinguished construction engineers.

In closing, two final points. At this first Universal Congress since the Canal's construction, as we discuss modern day concerns and future issues, it is important to remember what it cost to build this magnificent "path between the seas."

Workers from almost one hundred nations labored for thirty-two years — twenty-two years under the French effort and ten years under the American effort — under incredibly challenging conditions, to remove 310 million cubic yards of earth from the isthmus, enough earth to fill a string of railroad cars stretching more than four times around the earth. Fully one-fourth of that dirt and rock -- 30 million cubic yards of it along the final Canal route — was dug during the French-led effort. 25,000 people died in that thirty-two year, Herculean effort. The Canal remains a living, working monument to their sacrifice. Perhaps man's most extraordinary engineering accomplishment to date — one that has brought immense benefit to hundreds of millions of people. To keep it in continuous operation for eighty-three years has required tremendous diligence.

Now -- today -- we look to the future. Panama is fully engaged. To fulfill its vision for the Canal of the 21st century, Panama has asked you, the customers, to help shape that vision.

After serving three years as chairman of the Panama Canal Commission, working closely with the brilliant, high-energy Panamanian leadership, my assessment is that the Canal will operate better in the next century than it has in this century. As the great statesman, Simon Bolivar put it, however "No nos quedemos deslumbrados con las victorias que el destino nos da. Tenemos todavía mucho que hacer." [in English: "Let us not be dazzled by the victories that fate gives us. We have still much to do."] Throughout these last two years

of transition the Commission will continue to work in close harmony with Panama. Our motto has been and will remain, "Un equipo, una misión" — one team, one mission.

In terms of the United States' unfolding legacy, I believe history will record that the world's sole remaining superpower transferred control of a magnificent global asset in good faith, in good condition, and in good partnership based upon mutual respect between two sovereign nations. I am fully confident our two democracies will remain firm friends united by common interests in the 21st century. To paraphrase Thomas Jefferson, the bonds of peace and commerce will continue to strengthen the honest and enduring friendship between Panama and the United States

The future of the Canal is very bright, not only for Panama, but most importantly, for its customers.

Thank you for being here in Panama. I look forward to your questions during the panel discussion.

• *The Honorable Joe R. Reeder is Chairman of the Board of Directors of the Panama Canal Commission*



I wish to thank President Ernesto Perez Balladares for the kind invitation to attend this Universal Congress of the Panama Canal. On behalf of the Organization of American States I wish that you have a fruitful meeting and that your conclusions serve as the navigational chart guiding not only Panama but also all who understand their importance for prosperity and for world commerce.

As early as the beginning of the colonial period, Charles V ordered a study for joining the Atlantic and Pacific oceans through the Isthmus of Panama. And at the 600th anniversary of the Amphictyonic Congress of Panama the countries of the Americas reminded us of how the Liberator Simon Bolivar on several occasions referred to the need for the possible opening of a canal in Panama which would "shorten the distances of the world, strengthen the commercial ties of the continents and promote the interchange of products from the four corners of the globe".

And a meeting similar to this one, celebrated in Paris 118 years ago under the auspices of the Geographic Society and the inspiration of Count Ferdinand de Lesseps, gave the first real initiative to this dream. There were enormous health problems that resulted in nearly 20,000 dead, many of whom were from the Caribbean countries, and together with the insurmountable financial problems led to the failure of this first enormous effort. And the dream would remain unreachable for many years. Years that were fraught with challenges that resulted in fatal consequences for men, businesses and countries, until the United States and Panama take on the project and took it to its final conclusion.

We are gathered here today because of those men who dared to think about a future that is today our present. And the Canal represented an unparalleled victory of engineering, health and business organization: in constructing the largest dam in the world at that time, in designing and building the largest locks that could be conceived, in dealing with what at that time were the most complex environmental problems.

But the political circumstances changed over the years and Panama realized that the condition of perpetuity established in the original Treaty was not compatible with its national interests, result-

ing in many moments of great tension that led, after a period of serious deterioration of diplomatic relations, to a meeting in the OAS which at that time served provisionally as a consultative entity created by the Treaty of Rio. There, in April of 1960, the representatives of Panama and the United States met to discuss their differences at length. Both governments jointly declared in the form of a resolution issued by the OAS Council, that they would immediately initiate the necessary procedures with the objective of reaching a fair and equitable agreement subject to the constitutional procedures of each country. That is the background of the Torrijos-Carter Treaties.

This is the appropriate occasion to also remember that at that time the Organization of American States was the site of the signing of said Treaties which was attended by 28 governments and 19 heads of State as witnesses to the signing of these historic agreements guaranteeing that the Canal will be transferred to the Republic of Panama which will assume full responsibility for its administration, operation and maintenance. The parties also agreed on the Treaty Concerning the Permanent Neutrality of the Canal and the Operation of the Panama Canal. This agreement establishes a regime of neutrality which guarantees that the Canal shall remain open, safe, neutral and accessible to vessels of all nations, and all the countries of America expressed their willingness to cooperate by having the vessels under their registry comply with said regime.

Without a doubt the signing of the Treaties and their complete and harmonious execution have constituted the most fortunate chapter in the interamerican relations in this century and represent an unquestionable example of the validity of the principles upon which the interamerican system is based: legal equality among the States, peaceful solution of controversies, respect of sovereignty, territorial integrity and the independence of States, and the principle of nonintervention and mutual cooperation. It was therefore clear to all that the future of the Canal was not a simple bilateral problem, but instead a matter of major multilateral importance that if not resolved satisfactorily would threaten the fundamental bases of the interamerican system.



Although this Congress has many objectives concerning the future, it is also a commemoration of all those who made this dream possible - the men, the women, the leaders, the countries, the visionaries, the realists. But of course, it is much more than that. Panama has laid before us the double challenge of thinking about the Canal in the 21st century and of understanding the reasons for which that new monumental and joint effort is necessary. Because without a doubt the greatest event for world maritime commerce at the end of this century is the transfer to Panama of the exclusive responsibility for the Canal on the day the new millennium begins.

And this event takes on special importance because the Canal is to be transferred from a nation with unlimited technical and financial resources, to a small country with limited resources. And it is because of this that the decision to convene this Conference is so fortunate, in order to learn first hand and to explain to the users and to the International Community the progress which has been achieved in the preparation for assuming the administration of the Canal and to offer an opportunity for the interchange of opinions and experiences.

The Panamanian society in general and its political leadership in particular have provided examples of the search for agreement on critical topics. Panama has been able to keep the subject of the transference and operation of the Canal out of the traditional political arena and has achieved a consensus that demonstrates clarity of course, an enormous degree of political maturity and an irreproachable sense of historic responsibility. I believe that today no one doubts Panama's preparation and seriousness in managing the Canal and the reverted areas.

The design of the program for modernizing Canal installations involves investments of almost one billion dollars during the next eight years in satellite navigation technology and other improvements in land and water that should be completed by no later the year 2005. These improvements include the widening of Culebra Cut which is the Canal's narrowest passage. It should be borne in mind that as the number of high-draft vessels increases, it will become increasingly difficult to

guarantee all transiting vessels the traditional average time of 24 hours in Canal waters.

One of the subjects on the agenda of the Congress is ensuring that the Canal meets the new demands of world traffic, particularly beginning with the second decade of the next century, when a decision will have to be made regarding a third set of locks or a sea level canal. The investments also include the purchase of new tow boats, locomotives, rails, a floating lock gate and operating machinery for lock gates and valves. The opening of the current government to private investments has made it possible to finance from outside resources the construction of container ports, and has guaranteed the modernization and adequate administration of the ports, the reopening of the railroad and the construction of a modern highway between the terminal cities of the Canal. This is all aimed at maintaining Panama as the principal route for world commerce during the next millennium.

The leading sectors of Panamanian society have coincided in their efforts to make Panama a center for multiple maritime services, ensuring that the transfer results not only in an efficient and competitive service, but also in a broadening of the benefits that the Canal provides for the country: promote the construction of industrial plants, facilitate the rapid distribution of merchandise, improve the Panamanian registration services, ensure the compliance with international agreements regarding maritime safety, expand the information and technical support that are required in order to expand the services offered to international users.

The creation of a Transition Commission has been very important for all concerned, to ensure that the transfer of the complete administration of the Canal to Panamanian hands is a fluid event from its operational point of view. It is a matter of adapting an organization which has functioned as an American entity for 82 years, to a new reality under Panamanian jurisdiction, bearing in mind that the general intention is to permit the Canal to function under Panamanian jurisdiction in the same way that it has done under American legislation.

But perhaps the most significant fact is the approval of the law creating the Canal Authority. The law has as its basis a Constitutional Reform ap-



proved in 1994 concerning the Panama Canal. For over two years the government has worked on the development of the organic law within a process in which participants have included political parties, the Canal Commission, the Transition Commission, labor unions, as well as civic and business organizations. An extraordinary effort has been made to produce extremely important legislation for the future of the Canal, particularly the law that was approved on May 4, 1997. That law facilitates a peaceful and orderly transfer of the Canal Commission to the new Authority. But its principal function is to document the commitment of Panama to operate the Canal in accordance with solid business practices, away from the effects of domestic politics and to guarantee a world class service.

To ensure the Canal's financial independence, the legislation separates the Canal Authority from the national government and guarantees it the right to receive, protect and manage its own resources. It also guarantees the necessary autonomy for investing in maintenance, infrastructures, modernization and in other long range programs. The management and administration of the Canal enjoy a high degree of decentralization and autonomy. The law also guarantees that the administration of the Canal will not be subject to labor strikes or other activities that affect the work.

As we have already mentioned, the event which brings us together today is a look into the future. All of the inhabitants of the hemisphere desire, with good reason, that the prosperity resulting from the interoceanic waterway continue to be disseminated generously and with the transparency of the clear waters of Gatun Lake. The entire hemisphere perceives the Canal as a valued resource that is at the same time the mainstay of the interoceanic communication infrastructure, an important means for the expansion of the world economy and a vital tool for the insertion of our countries in the world economy. For this reason, all of the countries of the Americas collectively and immediately announced their attendance at the Congress, and the Secretariat of the OAS has been given a mandate to contribute to its success.

The world has approved the spirit of cooperation and solidarity that exists between the United

States and Panama in the fluid and harmonious transition of the Canal, which has permitted Panama to assume territorial jurisdiction over the old Canal Zone. Panama has been able to utilize portions of the area that are not required for the operation and defense of the Canal. The penal and civil codes of Panama have been implemented in the reverted areas. Panama has also assumed various functions, among which are vessel repair, the railroad and various police and judicial matters.

The countries of the Americas have also stated their conviction that the Congress will promote international cooperation and the adequate utilization of the resource of the Canal's watershed and the coastal zones, as well as the resources of the Atlantic and Pacific Oceans.

But far beyond the importance of the Canal Agreements in strategic and political terms, it is my opinion that the new currents, the integration that is flowing across the Americas from north to south and from east to west, multiply the importance of the Canal. What was yesterday an unprecedented challenge to engineering and an entity destined to facilitate maritime navigation and reduce the cost of trade and transportation, especially from one coast of the United States of America to the other, is today the reason for collective integration and prosperity.

We live in a time of integration, of profound liberalization of commerce, a time in which it has become evident that regional initiatives are not only compatible with globalization, but that they are mutually reinforcing. Today, almost 50 percent of world commerce takes place within the framework of free trade agreements, or between countries that have agreed to total liberalization by a certain date, which is a tendency that will continue to grow and will, of course, result in the growth of transit of merchandise through the Canal. There is no doubt, therefore, that to the extent that its installations permit, the volume of cargo that will transit the Canal in the coming years should continue to grow at considerable rates.

The dramatic growth of the demand on the Canal, which was unexpected even by those who study the trends in order to make predictions and make future decisions concerning investments in maintenance and expansion of the Canal's possi-



bilities, is consistent with this tendency. It is evident that the Canal perceived for the 21st century must respond to the demands that the world free trade will place on its services.

But it is in light of this unusual growth of intraregional commerce that makes it possible to comprehend the hemispheric importance of the Canal. The figures in this regard are impressive. Commerce between Latin America and the Caribbean grew 20 percent last year. Commerce between the United States and Latin America reached 200,000 million dollars, which represents a 12 percent growth over the previous year, and today is growing at twice the rate that is found in any other region of the world. Commerce between the countries of the hemisphere went from 650 billion dollars to one trillion dollars between 1990 and 1995. During the same period, exportations to the rest of the world went from 342 billion to 459 billion dollars. The volume of commerce from Latin America showed an average annual rate of increase of 12 percent.

Everything that has occurred is explained by the fact that the transformation of the commercial scenario in the Americas during the last decade has been amazing. In the short lapse of ten years we have experienced an unprecedented process of advancement towards commercial integration and free markets. Words such as Mercosur, Andean Community, Nafta, the Central American Common Market, or Caricom, have become a part of the daily vocabulary of our people and their governments. And beyond their obvious meaning, these names reflect the collective will of nations to work together and shoulder to shoulder for the progress of our people.

This process received a significant impulse during the Miami Summit, when the leaders of the democracies of the continent made the historic decision to make the Americas a Free Trade Area (AFTA) before the year 2005, by progressively eliminating the barriers to commerce and investments. Since then, the OAS has been working with the members of the Tripartite Committee, who are also part of the Interamerican Development Bank (IDB) and the Economic Conference for Latin America (ECLA), and has supported the preparatory work and the negotiation process.

After two years of intense work, the preparatory process is close to being completed and we have come a long way. Today we have a better understanding of the subjects and of the challenges that we must face, and we have developed a program that will prepare the countries for initiating negotiations in 1998. The first phase consisted in creating a common language and an acceptable technical description of the principal subjects of negotiation.

It is important to remember that the success of the negotiations for the creation of the AFTA will depend on the balance and the symmetry with which the goals of the different participants are considered and on the respect for the existing commercial relations. However, although I am aware of the challenges, I have no doubt regarding the outcome for the simple reason that the hemispheric integration has only one way and one direction in which to go, and that is forward.

The extent of liberalization and the new advances made in the face of integration require, without a doubt, the efficient, continuous and safe operation of the Panama Canal. Therefore, I firmly believe that the Panama Canal, the Canal of the Panamanians, has a promising future as a vital piece in the integration of the Americas. To the extent that the process of bringing our people together continues with the growing strength that we have seen recently, this vital artery will continue to provide progress and hope to all the people of the Americas.

Mister President, guests of the Universal Congress of the Panama Canal, friends:

We cannot disregard the importance of the fact that Panama has reinitiated an era of democracy and is restructuring its economy, has entered the World Trade Organization and is preparing to benefit from globalization. These are all facts that corroborate that we are in the hands of a nation with which we can trust our tomorrow.

I am convinced that this Congress' examination of the Canal in the 21st century and its analysis of the steps we must take in order to guarantee our objectives, will cause it to be remembered as a pillar of development in the years to come. Our destiny, and above all that of the region, are and will continue to be tied to that of the Panama Ca-



nal. I know that under the leadership of this great nation and with the participation of all nations, the Canal of the Panamanians, the Canal of us all, will be an inexhaustible source of growth, commerce and prosperity.

- *H.E. Dr. Cesar Gaviria Trujillo is Secretary General of the Organization of American States*





It is a pleasure and a privilege for me, as Chairman of the International Chamber of Shipping (ICS), to address this Opening Session of the Universal Congress of the Panama Canal. I compliment the Government of Panama and the organizers of the Congress for their vision in organizing this event at this time. For we are indeed in a period of transition, as the theme for this Session of the Congress rightly notes. And in just over 27 months the Panama Canal will transfer from United States to Panamanian control. One era will come to a close and another will commence.

The Panama Canal is unique -- "the world's most important shortcut," as Fernando Manfredo aptly puts it. So what does the handover mean for Canal users -- the international shipping industry -- and for world trade which they serve?

The opening of the Panama Canal in 1914, and the first official transit by the SS "Ancon" in August that year, represented the culmination of a feat of engineering which even today stands comparison with the great technical achievements of mankind. Cut through a malarial zone and solid rock, the Canal stands as a testament to man's determination to conquer natural barriers. Transiting the Canal is still a highspot on the tourist itinerary, while the physical operation of the locks is not only a schoolboy's delight but also a marvel of engineering.

But more important, perhaps, than its physical attributes, the completion of the Panama Canal changed the face of world trade, opening sea routes which had previously simply not existed. Despite the constraints imposed by the dimensions of the locks -- constraints which in due course gave rise to a new word in the shipping lexicon, "Panamax"

-- the Canal has continued to be a critical global trade artery.

The Panama Canal has now been serving world trade for some 83 years. If the mark of any good service organization -- for that, in essence, is what the Panama Canal is -- is to do what its customers require without fuss or hindrance, then it can be well satisfied with its performance. The old Panama Canal Company was of course run on military lines, with all the efficiency and precision which that implies. Following the signing of the

Panama Canal Treaty between the United States and Panama in 1977 the structure changed, and the Panama Canal Commission was created. But still the military efficiency of the operation prevailed, still the industry benefited from a reliable and effective service, and still world markets have continued to enjoy the economic savings which use of the Canal has offered.

Difficulties there have of course been: backlogs caused by congestion resulting from lock outages taking longer than scheduled, arguments with Canal pilots, problems (now thankfully solved) with water levels and depth restrictions -- the upsets which perhaps are inevitable even in a sophisticated, well-run operation. But in general the industry has been well satisfied with Canal operations at all levels.

I mentioned the military approach to the operation of the Canal, a fact which has sometimes prompted observers to ask whether, in an increasingly harsh commercial world, the Panama Canal Commission should be more entrepreneurial and commercially-minded in its operations. I remember a study some years ago when Arthur Andersen & Co were asked to assess the industry's attitude to the Canal and whether it would benefit from more "commercial flair." The response from the shipping industry, as reflected through the national shipowners' associations which form the membership of ICS, was revealing: what Canal users wanted from the Commission, said our members, was for them to maintain safe, reliable, efficient and economic transits, based on an understanding and acceptance of shipowner priorities. In other words "stick to the basics, and please do not be tempted into entrepreneurial extravagances which could divert management and other resources from running an efficient transit system."

So if the past has been generally positive, let me try to stand back and look at the issues which influence the attitudes of Canal users today, as they consider the implications of the handover of the Canal to Panama at the end of 1999. I hope that in speaking frankly I will not give offence.

First, the external politics. In two years' time control of the Canal will transfer from the largest trading nation in the world to a Central American state for which the Canal is its greatest economic



asset. Whatever the political disagreements the Carter-Torrijos treaty may have sparked off in the United States at the end of the 70s, they are now, I assume, history. Certainly as far as the shipping industry is concerned, we have no doubt that operation of the Canal can be just as effective in Panamanian hands as in American ones. As the world saw in the case of Egypt in 1956, it would be foolish to think otherwise.

But the importance of the Canal to Panama is quite different from its importance to the United States. Whereas the United States has, and no doubt will continue to have, a strategic and trading interest in the Canal, for Panama it represents a major source of revenue as well as a matter of national pride and sovereignty. For the wider world the Canal remains a major trading artery, and fairly or not it will judge Panama mainly by its success or not in operating the Canal in a sound, business-like way. It therefore follows that Panama Inc. have a tremendous inducement to want the handover and subsequent operation of the Canal to be a first-rate success. That is also the sincere hope of the Canal users.

It is in this context that the relationship between Panama's domestic politics and the operation of the Canal is so critical. It would be enormously damaging if the Canal were allowed to become a political football in Panama, or if it were to be seen as a bottomless well of free cash to be drawn on at will for local domestic purposes. Such short term benefits to Panama would undoubtedly be to the longer term disadvantage of the Canal and therefore of Panama.

However, the international shipping community is vastly encouraged by the recent signing of the new organic law by the President and by Panama's Legislative Assembly, with the creation of the new Panama Canal Authority. To my mind this is the most significant evidence of Panama's commitment to the long-term future of the Canal, both as a prized national asset and as a service to world trade. As I interpret it, the organic law not only provides a protective mechanism which will ring-fence the PCA from the vagaries of domestic politics, but equally important, it is a signal which gives the outside world confidence in Panama.

The political stability of the Canal is not of course the only dimension. Its day-to-day operation will remain the issue of principal importance to individual Canal users, whose assessment of the attractiveness of the Canal in the years ahead will depend upon the efficiency and economy of routine operations. At present the Panama Canal, unlike Suez, is operating at more or less maximum capacity. Also unlike Suez, it is constrained by the size of the locks. So shipowners have had to seek alternatives, namely a whole generation of post-Panamax vessels which cannot use the Canal.

In some trades, of course, there really is no alternative to the Canal. In others, as the Panama Canal Commission well knows, there are options, and there is no guarantee that current Canal users will continue to be Canal users five, ten or twenty years from now. Trade patterns change and demand changes with them. External forces can also have their own dramatic consequences: the 8-year closure of the Suez Canal from 1967 to 1975 brought about a major, long lasting, and in some cases irrevocable, change in world oil transport patterns.

But it is the day-to-day ability of the Canal to provide a painless and uninterrupted service, at the right price, which will determine the level of user confidence in the waterway. At working level, I see no problems on that score. A steady program of "Panamisation" has been taking place over the years; that is natural enough, and excellent people are in place at all levels. The process is working well in principle and in practice, and I hope that domestic political exuberance will not impede the sound management and operation of the Canal by making nationality an issue. It would be counterproductive at this stage to exclude the best people for the job simply because they held the "wrong" passport.

Not that we have a problem now. The operation of the Canal is clearly in safe hands, with competent management, a highly professional workforce, a pilotage system which uniquely accepts liability for pilot error, sophisticated control procedures, well-trained technical, operations and maintenance staff, pride in performance and an aggressive equipment renewal program.



Congestion, on the other hand, is obviously a potential problem. We have seen the steady growth not only in the number of vessels transiting the Canal but also in their relative size, with all that implies in terms of restricted passage through the Gaillard Cut. We are aware of the enormous capital works and maintenance program which has been set in hand under Administrator Alberto Aleman -- some \$900 million, I believe, over a period stretching to 2006 -- and we understand the efforts that are being made to ensure that the Canal remains a commercially attractive waterway in the decades ahead. Only time will tell how robust the forecasts on which the program is based will prove to be -- probably not entirely, given the notoriously imprecise nature of forecasting. But the program certainly reflects a level of planning which is to be applauded.

The whole question of paying for such work is of course a sensitive one. Historically the Panama Canal Commission has been constrained by law from making a profit, requiring only to recover, through tolls and other revenues, the costs of operating and maintaining the Canal (including interest, depreciation, capital for plant replacement, expansion and improvements), as well as payments to the Republic of Panama for public services and annuities. The Chairman of the Board of Directors of the Commission, Joe Reeder, is quoted as saying that the organic law is "an assurance that the Canal will be managed according to sound business practices," and the industry greatly welcomes that assurance. But the nonprofit financial constraints will no longer be law once the Canal changes hands, and the industry will certainly be watching for evidence that the assurance is being honored in practice. Personally I have every expectation that it will be, not because I have a naive faith in human nature, but because of the overriding importance to the reputation and economy of the Republic of Panama of operating the Canal in a long term businesslike and cost-efficient manner.

It is therefore perhaps unfortunate that the call for funds for extensive capital investments has coincided with the immediate run-up to the handover of the Canal, and that a two-stage toll

increase, aggregating over 16 percent, has been found necessary for January 1997 and January 1998. ICS fully understands the decision to accelerate the widening of the Cut -- and we can all envisage the uproar from the industry if the continuing growth in Canal traffic were to lead to yet more congestion and delay. But commercial enterprises do not like surprises, particularly when they entail sharp rises in costs and/or are not properly substantiated. At the very least it makes it difficult, in a business environment which is tough enough already, to recover such costs from the market place. In today's transparent and challenging world, business propositions need to be explained in full and to be supported by rational argument.

In this connection, I do have one concern. In today's world of instant communication, presentation is almost as important as substance. The recent toll increase, and particularly the upward adjustment of the tonnage of vessels capable of carrying containers on deck, is a case in point. The Commission will argue -- indeed, Administrator Aleman has argued -- that it did everything it could to make its intentions widely known, and I fully accept that all the due notice processes required under the current rules were scrupulously followed. Hearings took place not only in Washington D.C. -- at which ICS was represented -- but also here in Panama. Also documentation in support of the increase was extensively circulated to anyone who might have a legitimate interest.

But I suggest that sort of formalistic long-distance consultation procedure no longer serves its purpose. We live in an age where the voice of consumer groups expects to be heard. Liner operators cannot simply increase their freight rates without consulting shipper groups. Airline passengers, package tourists, bank customers, railway travellers and countless other groups have their own representative body which expects to have serious dialogue with service providers in matters affecting them, the customers. In this same sense it occurs to me that perhaps the Panama Canal Commission would benefit from having its own industry sounding-board.

I believe there was some discussion of including an industry representative on the eleven-strong



Board of Directors of the new Panama Canal Authority. That suggestion was not progressed, possibly for very good reasons. But I have an alternative and, I believe, practical proposal. Would it not be helpful for the Commission to appoint a small advisory body from the international shipping industry with whom it could discuss future Canal developments, and their implications for Canal users. Such a body, which need not -- and probably should not -- await the formation of the new PCA, would have no power, but would act as a forum for valuable two-way consultation. It would not be intrinsically confrontational, because to a large extent Canal operators and Canal users have a common interest. Both want to see the Canal running efficiently in an atmosphere of mutual trust. In my judgement the Commission could make excellent use of such a forum, meeting perhaps twice yearly.

To be effective, such an advisory group would need to include both people with a long-term view of the industry and people with local involvement and knowledge of the Canal. It would need to be able to comment intelligently on the grand issues like long-term planning and on more detailed and tricky operational questions such as devising a practical and equitable booking system. Face-to-face consultation inspires confidence, and ICS would be very happy to play its part in assisting the Commission in an advisory group of this sort, which could have a very real role in reflecting industry views to the Commission as well as, importantly, explaining Commission propositions to Canal users.

I mentioned the need for people with local knowledge -- in other words, the Canal agents -- and in that connection I would like to pay regard to the work of the Camara Maritima de Panama. Agents have an unenviable task. If something goes wrong it is their fault and if something goes right they find that success has many fathers. We as Canal users, and those of you who are members of the maritime community in Panama, are fortunate to have such a dedicated and professional body of people as intermediaries, helping to ensure that Canal transits are as smooth and painless as possible. I appreciate the support they have always given to owners in general and to ICS in particular.

Finally, may I thank Fernando Manfredo and the other organizers of this congress for the opportunity given to me today to speak on behalf of the International Chamber of Shipping. We all hope for a seamless transfer of responsibility for the Canal to Panama, and that none of the good things will be lost in the handover. But personally, I hope for more than that. I would like to think that as the Canal changes hands its new owners will not simply inherit its traditional strengths but build on them, creating a Canal for the 21st century which is economic for its users, competitive and unrivalled in efficiency, Panamanian but open to all users, a truly international waterway.

On behalf of the International Chamber of Shipping I am happy to give an undertaking of our willingness to work constructively with the Commission in the remaining months, and with the new Panama Canal Authority thereafter, to turn that objective into reality.

• *Juan Kelly is Chairman of the International Chamber of Shipping*



**Speakers:**

**H.E. Dr. Jorge E. Ritter**

*Minister for Canal Affairs, Panama*

**The Honorable Joe R. Reeder**

*Chairman, Board of Directors, PCC*

**H.E. Dr. Cesar Gaviria Trujillo**

*Secretary General, Organization of American States*

**Juan Kelly**

*Chairman, International Chamber of Shipping, UK*

**Panelists:**

**Ronald Bergman**

*President, The Baltic and International Maritime Council (BIMCO)*

*Chairman, Nordström & Thulin*

**Gerhard E. Kurz**

*Chairman, Oil Companies International Marine Forum (OCIMF)*

*President, Mobil Shipping and Transportation Company*

**Lt. General (USA Ret) D.P. McAuliffe**

*Former Administrator, PCC*

**Moderators:**

**Christopher Hayman**

**H.E. Olga Bosquez Poveda**

Among the many questions raised during this session was the issue of the morale and attitude of the Canal work force as the Commission moves to within two years of the transfer of the waterway to full Panamanian control. Dr. Ritter indicated that the transfer process provides for a system that not only guarantees working conditions of Canal employees, but also incorporates a mechanism to resolve potential labor-management conflicts. Mr. Reeder added that the change is similar to the transfer of ownership in any business. Management has been addressing the labor area for 22 years as part of the transition, spending tens of millions of dollars every year in training and this translates into improved morale of the work force. Mr. Reeder said that the employees know they are well trained, and they like the system they work under. This system is very important to the Canal employees and it is preserved in the organic law. They are trained, they are promoted and they advance based on merit and not whom they know. Mr. Reeder stated that this is a very important cornerstone of the organic law.

In response to concerns about the availability of fresh water for Canal operations, Dr. Ritter indicated that the recently approved organic law of the Panama Canal Authority includes a system, unique in Panama, that provides for the management of the Canal's Hydrographic Basin. An interinstitutional mechanism has been created obligating all government and nongovernment entities as well to participate in the effort to protect the Basin. He added that there should be no shortage of water for Canal operations. The Canal has high reserves of water, with the Canal Basin



covering 320,000 hectares from Cocle to Darien, which means the Basin extends over half of the provinces of the Republic of Panama.

Regarding the tolls issue and the public hearings that are presently held with Canal users on proposed toll rate increases, Dr. Ritter indicated that the organic law of the Panama Canal Authority establishes the obligation to hold public hearings with users before the implementation of toll rate changes or modifications to ship measurement rules. Although the law includes this consultation process, Dr. Ritter indicated that they would like to hear opinions from users concerning the effectiveness of these consultations and how this mechanism might be improved, whether there is a better way for them to provide their views to the Panama Canal. The law only provides for the obligation to hold hearings and the Board of Directors must now develop the regulations governing this consultation process.

Indicating that he is not an expert in the tolls business, Mr. Kurz viewed the suggestion of having a consultative process as an ideal way to proceed, perhaps establishing a permanent forum between the industry and the Canal Authority to provide a serious opportunity for dialogue. Mr. Kelly stated that the present procedure no longer serves its purpose. He said that there is a big difference between an ongoing consultation that allows a certain amount of continuing negotiation versus an announcement that tolls are being increased and that hearings will be held in Washington where all relevant data are to be provided. He mentioned that in today's world, customers are looking for some substantiation of the propositions put forth by their service providers and, on behalf of the industry, he would like to see more substantiation of the propositions put forth by the Panama Canal. He feels that an improved consultation procedure is needed and he welcomed Dr. Ritter's comments. Mr. Bergman thought it was very important that the Canal maintain its competitive edge and that a good dialogue is continued between the shipowners and the Canal. Bulk carriers have increased to Cape size, bypassing the Canal. If their clients feel Canal costs are too high, they will start transporting their goods by other means--larger ships, rail or other alternatives. Mr. McAuliffe mentioned that he had experienced the consultation process for proposed toll rate increases and said that, indeed, customers were called to give them bad news, but he always learned something from that process. He agreed that some continuing dialogue might be beneficial. Mr. Reeder emphasized that the Canal leadership is now more focused on the customers and mentioned that in 83 years there have been a total of seven toll rate increases, a modesty that no Fortune One Hundred company can lay claim to. He said that presently a proposed toll rate change is published in the Federal Register and, once that publication goes into effect, Commission officials are barred by law from having what is referred to as "ex-party" communication. This means that they cannot discuss the proposed toll rate increase with an individual shipper. As to the ongoing dialogue, Mr. Reeder thought it should exist and probably some mechanism could be achieved to formalize it, but at the present time customer complaints are responded to very quickly.

The discussion on tolls continued with a question posed by Mr. Bruce Farthing. He said that the Canal has a virtual monopoly on providing maritime transport and asked what guarantee was there that the Canal would not abuse this (after the transfer); specifically, will Panama raise tolls after 1999. In reference to the monopoly assertion, Dr. Ritter indicated that Panama does not feel that it has such a monopoly over the trade routes and does not think that transit through Panama is obligated. On the contrary, Panama has seen an increase in the development of alternative routes. In any case, Panama has agreed to manage the Canal under fair, equitable and reasonable terms consistent with



international law as provided for in the Neutrality Treaty. This treaty--which is not solely a neutrality treaty, but a treaty on Panama Canal operations as well--provides for these parameters on tolls. Abusive or exceedingly high toll rates would be in opposition to the obligation contained in that Treaty. More importantly, it would be inconsistent with the mechanisms that Panama has established under the philosophy that has inspired this transition.

A question concerning a thesis by the Andean Group that Panama Canal waters should be considered international waters was answered by Dr. Gaviria to the effect that he does not see this thesis as having any basis in reality. He indicated he has not seen any Andean country attempting to enforce any rights different from those covered by treaties. He believes that commercial ships transiting the Canal will be treated as any other commercial vessel and he is sure that no other government in the region will have any claim to rights of such nature. On the contrary, the Andean countries, just as those in the rest of America, are very satisfied about the progress of the transition.

Returning to the tolls issue and the establishment of tolls strategy, Joe Reeder assured the audience that the organic law will allow the Canal to follow the best modern business practices over the long term. This has been confirmed by everyone with whom he had spoken, every Panamanian in a position of responsibility. The term "what the market will bear" has never been used in the context of toll setting or toll setting policy. This would be inconsistent with the long-term best interest of the Canal. Mr. Reeder said that the point raised by Mr. Juan Kelly on the need for a small advisory group, or something of that nature, is worth considering and he believes that the successor Chairman and the Administrator are receptive to that suggestion. Another point raised by Mr. Kelly concerned the need for predictability. Mr. Reeder understands that predictability is vitally important to the Canal's customers and, therefore, vitally important to the Panama Canal. Concerning the charge for containers on deck, Mr. Reeder said that this was not a new issue. He remarked that everyone agrees that containers should not transit the Canal free and, historically, containers on deck have transited the waterway at no charge. The PCC received a number of formal comments from bulk shippers before implementation of this new regulation--all matter of public record--agreeing that containers should be charged. What was debated, however, was how much they should charge and how they should be charged, but no one disputed the fairness of charging for containers on deck.

Dr. Ritter reiterated that Panama has subscribed to a Neutrality Treaty establishing the general criteria for setting tolls. Tolls should be fair, equitable, reasonable and consistent with international law. The Board of Directors of the recently created Panama Canal Authority will have the responsibility of establishing tolls policy, and toll rates will ultimately be decided by the Presidential Cabinet. Mr. Bergman stressed the need for a continuing dialogue with the shipping organizations which would ensure goodwill and avoid many misunderstandings. Shipowners order ships which are to last at least 20 years, so they must have a clear understanding of what they can expect. As an example of what could happen if the industry is uncertain about what lies ahead, he cited the Suez Canal, which has been closed several times. As a result, the shipping industry concentrated on building very large tankers, to a much larger extent than they would have done otherwise, just to avoid the Suez Canal. He believes that the Suez Canal would have had more business today, if many of the owners had not ordered these very large and ultra large tankers.

Asked for his opinion on how Panama's involvement with the maritime world can most effectively be developed, Mr. Kurz indicated that if Panama's assumption of the responsibility of operating the



Canal is accomplished correctly and is viewed from the proper perspective, this will carry with it many more economic benefits than the simple operation of the Canal. He sees the Canal as an economic engine that if operated and managed properly should generate long-term benefits for Panama. Shipping is a very important activity. Everything we touch, use and consume in one way or the other moves by ship, either in the form of a raw material, finished product or semi-finished product. Mr. Kurz sees shipping as an opportunity for Panama to broaden its leadership. Panama is already very prominent in the industry, with the Panama flag registry being the largest in the world. As Chairman of the Oil Companies International Marine Forum, Mr. Kurz has carried the battle to raise the standards of the industry and ensure they conform to the laws, rules and regulations of the International Maritime Organization. He feels that Panama has a tremendous opportunity, by combining the new control of the Canal with the very preeminent position of the flag registry to truly take a leadership role in this industry that goes beyond anything that it has visualized to date, and to do so in a manner where Panama focuses current customers. He added that Panama has the resources, the ability, the determination to carry out this mission and establish itself as a new force in the maritime industry, and a new force as a growing country with room for much more infrastructure and investment.







*THE CANAL IN THE 21<sup>ST</sup> CENTURY*

### History and Background

When a transportation system is operating with excess capacity, there is no need to manage the activities of the system with any great precision. Such management would actually constitute over-management. Efficiency efforts and management attention are better directed toward other issues. This statement does not imply that running the system does not take skill and dedication. Rather, skilled and dedicated individuals, operating their particular aspect of the system, will in almost all cases handle whatever situation occurs without need to extensively plan and coordinate. Once the system (or some component) reaches saturation, the picture changes drastically. A saturated component will not process all the traffic supplied to it, causing a backup which will eventually cascade into a more general system-wide saturation. Once that situation has taken hold, even coming out of saturation on the original component may not be sufficient. For the system to quickly work off the backlog, which ordinarily may persist for some time, would require the system to exceed nominal throughput.

In 1995 and 1996, the Panama Canal experienced saturation conditions similar to those described. One instance, triggered by heavy arrivals that coincided with scheduled locks overhaul, generated a backlog of over one hundred sixty ships. This backlog required, under heavy utilization of the Canal, several weeks to work off. The ultimate solution to capacity problems is to increase capacity, and the Panama Canal Commission is aggressively pursuing such solutions. Saturation problems also demand that the system extract maximum throughput from existing resources. Failure to fully utilize existing resources merely exaggerates the capacity problem. The Enhanced Vessel Traffic Management System (EVTMS) is an information processing system designed to provide all operating elements of the Panama Canal with consistent, timely data and planning to assure optimal operation of the Canal.

To take advantage of a more optimum approach requires the collection and analysis of data to predict likely traffic with greater precision. This processing permits traffic flow decisions to be made not on the general assumption of poor con-

ditions (pessimistic) nor on the assumption of generally good conditions (optimistic) but on a calculation of the likely actual conditions (optimum, or realistic). The capability to do this prediction and apply the results comes from the EVTMS. This system uses advanced computing paradigms (process-rich, distributed, client-server architecture) and high end workstation microcomputers to achieve high levels of computational capability. These capabilities are coupled with a long-haul, communications network which allows a multitude of remote sites to acquire and use traffic management services and information while assuring that no resource becomes overloaded as the system grows.

Key servers in the EVTMS (traffic status, traffic projection) provide projections of traffic density for the ensuing period in intervals for each key location (entry/exit, dock, tie-up, lock positions and channel/cut progress.) This predictive information is the basis of all strategic traffic management decisions. With this information, the PCC will be able pro-actively manage flows of traffic by more precisely scheduling traffic that would otherwise contribute to excessive loading in the Canal, and by quickly reacting with new plans in case the original plan cannot be met.

For example, by inspecting current vessels en route and predictive information from the EVTMS, a controller discovers that arrivals at Cristobal (at the Atlantic entrance) will exceed expected daily throughput in the Canal for southbound traffic over the next three days by 5 (large) ships per day. All things being equal, this excess would develop to a backlog of fifteen ships at the end of the time period. Even if the Canal is able to transit all subsequent arrivals, the 15 ship queue may persist for a long time. With advanced notice, the controller may favor southbound over northbound (assuming there is excess northbound capacity), request the excess traffic to delay arrival, or plan moorings to maximize throughput of the ships once they arrive. Some of these ships may then be inserted into the stream of southbound traffic to take advantage of gaps in the stream. The predictive capability of the EVTMS will also permit operators to have an exact estimate of transit completion even when delays are inevitable, and will assure traffic is



handled equitably. Ultimately, the vessels which enter the system will have a clear plan for how they will leave the system.

Managing large backlogs of vessels in an ad hoc manner can actually reduce system capacity by loading transit managers and other operations personnel with holding tasks and diverting them from throughput tasks. By managing the traffic stream, the PCC can guarantee that resources for each canal element will not be exceeded, and therefore traffic flows would be smooth throughout the Canal. By careful management and planning, the excess effort associated with handling traffic backlogs can be avoided while maximizing Canal throughput.

#### **Current Design and Process**

The process of creating a major automation system like the EVTMS requires care and precision. A system, like the EVTMS, which requires high levels of complexity and introduction of major amounts of software also requires much attention to the planning and design phases. Thus, review of PCC operations prior to go ahead decisions on EVTMS and subsequent functional requirements and high level design required a full year of effort. This effort documented existing operational practice.

#### **Design**

From a Panama Canal operations viewpoint, the EVTMS has four major functional areas. The first is tracking.

In order to better manage Canal resources and ships, it is necessary to know where they are. This functional area alone represents a significant upgrade for the Canal.

The second functional area is scheduling. By carefully planning the use of resources, understanding (through tracking) how close to plan the actual situation is coming, and replanning when necessary to help recover from a problem, good scheduling can assure that no Canal resources go unused when they were needed.

The third functional area is the real time sharing of information and the communications necessary to deliver it. In contrast to the current situation, ALL groups and units participating in transit activities will share the same information at the

same time, while the event is taking place. Voice communication will be minimized, and time on task will increase for most individuals. The result will be a more efficient and safer Canal benefiting both Canal customers and Canal workers. This capability will also make information available to improve analysis, long range modelling and planning.

The fourth major function is really a whole set of related functions gathered together under the heading of administrative services. Basically, the idea is to permit all the data and analysis generated in EVTMS to be used to generate administrative materials. Included are ship data queries, executive reporting queries, financial support and billing.

All these user functions get tied together into a whole by the EVTMS infrastructure. This underlying functionality consists of the communications, computers, operating system, drivers, utility programs, libraries and off the shelf software subsystems that comprise the actual corpus of EVTMS.

The distributed nature of operations in the Panama Canal leads to a distributed formulation of the system architecture. A detailed system design document is available. In the case of EVTMS, a distributed client-server architecture naturally maps into a system capable of collecting data from widely dispersed sources, fusing it into a consistent whole, and then distributing information out to the points where it is needed. In addition, the central clearinghouse is an ideal point in the system to apply algorithms to predict, derive consequences, and alert operational elements of important developments.

The wide area network (WAN) distribution of information is mediated by the communication system. Gathering information from moving vehicles requires a wireless link. Other sites can be linked with land lines. In both cases, the links require adequate bandwidth.

Each site or node on the WAN has its own complement of automation tailored to that site's functions. Mobile nodes contain equipment to track and report the position and identity of the node. Some mobile nodes will have additional information and programs to assist the operator in decision-making and navigation. Mobile nodes are



transiting ships, tug boats, other large mobile platforms such as barges and dredges, launches, jetties, trucks and cars. The design calls for on-board equipment to locate each platform, and radio equipment to inform the hub site of that location. In practice, the vehicle location function is served by Differential Global Positioning System (DGPS) and a digital radio system with frequency agile transceiver (similar to that used on the Mars Rover) provides communication to the land based network.

Since the Panama Canal already has a well designed land-based communication network, EVTMS plans to interconnect using standard protocols. This design permits EVTMS stations to be established any place required, and is flexible from the point of view of adding sites. Typically, a land site will have a machine to handle communication and local data management and one or more additional interactive display machines to serve users (depending on the local requirement). Supposed sites for the EVTMS are locks control for each lock, pilot dispatch, line handler dispatch, Atlantic harbor, Pacific harbor, Gamboa, and the Marine Traffic Control Center (MTCC).

In addition, EVTMS will coordinate activity data, archival and replay analysis, on-line query of the system for management reporting, billing, and administrative services related to Canal operations. These functions will require EVTMS equipment in several offices at PCC Headquarters, Marine Bureau, and elsewhere. Typically, EVTMS will treat each separate physical building as a site, but not each office.

As the EVTMS design progresses, we realize that not every contingency can be planned, and that changes inevitably occur as time passes. The objective in setting up a specific design is to clearly focus attention on the system target functions and an approach to achieve them. Introduction of good engineering process guarantees that work in the system remains focused on the goal, and that if the goal changes, it happens in a controlled fashion. Key processes in establishing mature system development are:

1. Requirements Analysis.
2. Configuration Management.
3. Quality Control.

4. System Development.
5. Program Management.

#### **Prototypes.**

The requirement to track vessels and resources with GPS using a corrective differential signal (DGPS), report that position to the land base, collect position data back, and generate a situation display brings together several pieces of technology in a unique operational context.

Likewise, the requirement to schedule Canal vessels and resources in context of eight decades of empirical experience and have the results acceptable and usable by MTCC operational schedulers represents a unique task. In each case, PCC and Volpe management felt an early prototype phase could help formulate our subsequent approach to the issue in response to technical state of the art and also in response to user reactions.

#### **Tracking.**

Volpe and PCC cooperated in making an early look at tracking available. Volpe used technology originally developed in a project related to the St. Lawrence Seaway, differential GPS equipment loaned by the U.S. Coast Guard, and some additional programming and design work to put together a prototype quality trial tracking system.

The first step was to test the approach. With the help of the Boston Port Authority and the Port of Boston Pilots, Volpe Center was able to run a series of sophisticated trials that proved the feasibility of the DGPS technique.

Next, the entire setup had to be transported to the Panama Canal. There, with extensive help from PCC personnel, the DGPS was tested for coverage, availability and accuracy. The results were gratifying, since the geographic position of the Canal virtually guarantees clear view of more than enough satellites to assure accurate positioning. In addition, the differential signal was easily received everywhere in the Canal, guaranteeing highly accurate position data for all tracking. One gratifying side-effect is that the differential beacon will make use of advanced navigation equipment feasible over most of Panama.

Additional testing was required for the two way digital radio. This testing proved as gratifying as

that with the DGPS, and the team verified ample data exchange well beyond the required range. This result proved that these components could be put together to form the basis of a tracking system.

Operationally, such a system requires on board equipment. This equipment consists of a small computer, GPS antenna, differential beacon antenna, digital transceiver antenna, and the associated electronics and computer interface cards. The compliment of equipment can be installed on a PCC-owned vehicle or ship, but must be carried aboard transiting vessels.

The remaining tests were to verify feasibility of tracking using carry on equipment, the acceptance by pilots of the carry on and set up process, and the opinion of the pilots regarding the usefulness of the tracking display both for own ship only and for multiple ship displays.

These tests far exceeded our expectations. Pilots were very pleased with the system, and we now know that early availability of the tracking function in EVTMS is highly desirable to pilots and a candidate for early deployment. The tracking capability showcased in the prototype will serve the requirements of EVTMS quite well.

### Scheduling.

Use of automation in transportation scheduling is a relatively new field. Although of intense theoretical interest for many years, equipment capable to support the computational requirements in an operational context is only recently available. Everyone can think of a scheduling approach (e.g. "First come; first served"). The problem is that such simple approaches are quickly complicated by the many constraints that arise in practical situations.

In the Panama Canal, scheduling of ship traffic establishes the flow of operations, and schedules for other resources (pilots, tugs, crews, etc.) are derived from the ship transit schedule. The ship transit schedule itself may need modification if one of the other resources cannot meet the ship schedule requirement. Traffic specialists assigned to the Canal's MTCC develop the ship schedule applying extensive experience with the Canal. The process requires an individual with long experience and uncommon insight, and in the current operation, it is primarily a manual operation with limited computer support.

The objective in EVTMS is to use automation as a principal tool in transit scheduling and to use the automation as a vehicle to optimize the schedule according to Panama Canal policy. Operationally, the transit controllers and scheduling specialists would continue to have responsibility for schedules. The computer would give them a much wider and more powerful range of options for performing the scheduling. A secondary benefit is that the ship transit schedule could be used by the automation to develop all other schedules. Once the schedules become operational, the automation would permit a thorough rescheduling if the original schedule could not be met, or traffic deteriorates, or the schedule must be changed for any other reason.

Since many aspects of such a system need to be researched, the PCC and Volpe Center have taken a multi-pronged approach. Since optimization is important, experts in this area are investigating several methods. Before details of the optimization effort are available, we have undertaken another parallel approach. Since extensive empirical information is used by schedulers and controllers, the team has begun to investigate capture and application of these empirical techniques by automation. This is the "expert system" approach, and the likely outcome of the overall scheduling development is automation that encompasses elements of both mathematical optimization and expert systems.

To gain experience with scheduling and help further define user requirements for scheduling, Volpe Center and the PCC embarked on a prototype effort to develop an "expert" or rule-based system. We structured the effort to investigate both feasibility of the approach and the nature of a user interface between the system and controllers.

Investigators have been able to identify the major portions of the rules and strategies used today by PCC schedulers. A rule-based prototype derived from this work has performed practical ship scheduling almost as well as the human counterpart, but with some glaring lapses. In cooperation with Marine Bureau personnel, the team is refining the prototype. Unexpectedly, given access to data similar to that provided by EVTMS, the prototype can complete a (less than perfect) schedule in seconds. Since a controller may need as much 43



as four or five hours to collect data, resolve constraints, and map out a schedule, the prototype already offers a potential to improve schedules. Modern user interface approaches which make the schedule prototype easy and natural to use further enhance its potential. A controller could make several modifications and rerun the schedule several times and still not spend a fraction of the effort required today.

Given these results, the EVTMS project team plans to introduce scheduling automation in a staged fashion. First, a basic rule-based capability with excellent user interface will become the initial scheduler and is a candidate for early deployment. This system will run fast enough to be used both to develop initial schedules and reschedule to account for operational problems. Subsequently, the scheduling team will bring in subprograms that perform optimization. These will be coupled with the rule-based system to give superior results and ability to develop schedules in situations unfamiliar to experienced schedulers. Finally, coordinated scheduling services will be extended via EVTMS to all components in the Canal requiring them.

#### **Flexibility and the Future of the Canal.**

We envision a cyclic system life cycle. In a traditional "waterfall" life cycle, one presumes that a system will be built during an intense engineering phase, and will run thereafter with little or no change except for relatively minor maintenance.

The "cyclic" approach presumes that, once the system is established, it will receive aggressive maintenance and accept changes and upgrades at a steady pace. Although certain baseline functions will always be present in the operational EVTMS, the amount of change due for the Canal in the next decade, coupled with work process changes brought on by the EVTMS itself, coupled with the rapid evolution in the computer industry dictate a cyclic approach.

The overall design and support process for EVTMS has the management of change as one of its major objectives. In this fashion the EVTMS will be quickly adaptable to future situations. The EVTMS will adapt to new policies, new equipment and new capabilities in the Canal. It will provide a robust and powerful instrument to advance the

service and effectiveness of the Panama Canal into the next century.

Customers and employees of the Panama Canal can look forward to enhanced performance from EVTMS that will:

1. Speed transits and reduce Canal waters time.
2. Provide more accurate, reliable transit time estimates.
3. Enable more precise advanced booking and more booking opportunities.
4. Assure safer transits by better scheduling and better surveillance.
5. Add automation support for all phases of Canal operations.
6. Provide real time availability of good, able information everywhere in the Canal.

In reviewing the results of the tracking experiments, PCC Pilots expressed great enthusiasm. They felt that with accurate ship speeds, ability to view situations ahead (at locks and around bends of the cut), and the ability to gain clear knowledge of resource availability, ship operations would be safer and more efficient. One report surmised that EVTMS improvements alone would make it possible to transit two additional large ships a day.

The PCC traffic schedulers were also impressed with the scheduling prototype stating, "It needs some work, but I think you have something there."

PCC Administrator and CEO, Alberto Aleman Zubieta, has characterized a vision for the Panama Canal that will make it "A Canal that is modern, with more capacity and state-of-art technology, always at the cutting edge.. A Canal that is cost effective and cost efficient..." By introduction of the advanced technology and engineering of the Enhanced Vessel Traffic Management System, we begin to make the dream come true.

- *Richard D. Wright is Chief, Automation Applications Division, John A. Volpe National Transportation Systems Center, and Volpe Program Manager for the Panama Canal Commission's Enhanced Vessel Traffic Management System Project.*
- *Carlos Alvarado is Deputy Director of the Marine Bureau, Panama Canal Commission.*

## THE CANAL IN THE 21<sup>st</sup> CENTURY: Summary of the Question-and-Answer Period: Traffic Management System of the Future

### Speakers:

**Richard D. Wright**

*Chief, Automation Applications Division, John A. Volpe National Transportation Systems Center,  
and Volpe Program Manager for the Panama Canal's Enhanced Vessel Traffic Manager System Project*

**Carlos Alvarado**

*Deputy Director, Marine Bureau, PCC*

### Panelists:

**James Freeman**

*Staff Engineer, Marine Bureau, PCC*

**Sam Mann**

*Chief, Traffic Management Division, Marine Bureau, PCC*

**Steve Hung**

*Director of Engineering and Strategic Planning, St. Lawrence Seaway Development Corporation*

**Charles M. Langman**

*Panama Chamber of Shipping*

**Capt. Miguel F. Rodriguez**

*Panama Canal Pilot, PCC*

### Moderators:

**Christopher Hayman**

**H.E. Olga Bosquez Poveda**

The difference between the traffic management system being implemented at the Canal and its predecessor was explained by Richard Wright and Carlos Alvarado. Updating the system will automate many functions that are presently performed manually which tends to slow down scheduling operations and the time for the production of required summary reports. The present system is considered to be primarily an electronic copy board since all calculations and scheduling are done manually. The existing system was not designed to perform calculations. For example, a five minute loss on the lockage of a vessel requires that manual adjustments be made to the schedule and the copy board which are time-consuming, never-ending tasks.

From the perspective of the pilot, the present system relies too much on centralization. Two marine traffic controllers are responsible for passing out information to all pilots in the Canal and this information is not being received in a timely manner. With the new system, all pilots will have access to 100 percent of the information in real time, resulting in transits which are safer and much more efficient.

Mr. Mann added that the new system will have real time tracking of not only transiting vessels, but also of resources such as tugboats, launches, etc. It will have automatic event and warning signals which will alert the traffic controller and others in the system to critical situations.



From the shipping agents' standpoint, Mr. Langman mentioned that this system is an improvement and removes part of the discretionary decisions. Shipping agents live on a daily basis situations where the efficiency of the Canal can often be questioned because of arbitrary decisions.

A similar system is being developed at the St. Lawrence Seaway. Steve Hung indicated that because of the two-way communications offered by this system, the users will have access to a ship's location anywhere along the Seaway.

The Panama Canal Commission has budgeted approximately \$30 million for the project which includes engineering technology that will be developed in the software, as well as the acquisition and deployment of equipment and communication systems.





### Introduction

Gaillard Cut, the narrowest segment of the Panama Canal, is being widened for the second time in the Canal's history in order to produce a 20 percent increase in Canal capacity.

The magnitude of the undertaking places it in a category of large earthwork projects exceeded by few in size. In fact it is one of the largest rock excavation projects underway in the world today. The widening involves almost four times more excavation than the Channel Tunnel that connects the United Kingdom to continental Europe.

### Description of Gaillard Cut

Gaillard Cut, the segment of the Canal that crosses the continental divide, extends from the Pedro Miguel locks to the town of Gamboa. It has a length of 7.8 miles (12.6 km.), which represents 15 percent of the total length of the waterway. Its present width is 500 feet (152 m). Its highest elevation is the top of Gold Hill, which is 575 feet (175 m) above mean sea level. The bottom of the navigable channel in the Cut is at elevation 37 feet, which guarantees a minimum draft of 39.5 feet to transiting vessels.

Originally, Gaillard Cut was 300 feet wide. The total amount of excavation in the Cut reached a volume of 95 million cubic meters by 1914, when the Canal was inaugurated, a figure over four times larger than the original estimate. Our present widening at 33 million cubic meters, is larger than the original 1904 estimate for the entire Gaillard Cut.

Landslides however, continued to occur in significant numbers beyond the Canal's inauguration. In 1915, the simultaneous East and West Culebra slides encroached on the navigation channel during a period of high precipitation. It took Canal authorities seven months to reestablish traffic through the waterway. By 1930, slides had added another 40 million cubic meters of excavation from the navigation channel.

The ever-present problem with landslides led Canal authorities to widen the Cut in selected areas to provide a catch basin for slide debris, which had adversely affected traffic for so long. This increase in width from 300 feet to 500 feet in the central portion of the Cut constituted the beginning of what we now call the first Cut Widening Project.

The project stopped for several decades, and was reactivated again in the mid-50's. On this occasion, the reason for widening was to increase capacity. At that time, a constant width of 500 feet would permit two-way traffic along any portion of the waterway for 97 percent of the ships using the Canal in 1970. The first widening project was completed in 1971.

### Description of Increased Needs

The number of large beam ships has increased significantly during recent decades. In fact, the proportion of transiting ships exceeding a 90 foot beam has increased from 3 percent in 1970 to over 30 percent of our transits in 1997. Ships which are limited by the size of the locks are called "Panamax" type ships.

By virtue of their beam size Panamax type ships can only navigate through Gaillard Cut in one direction. Two-way Panamax traffic in a 500 ft. channel would generate hydrodynamic forces that would render navigation unsafe.

The one-way traffic restriction in Gaillard Cut constitutes the greatest capacity limitation at the Canal today. Several hours are lost every day during the change of direction of the one-way traffic convoys in Gaillard Cut. Any attempt to increase Canal capacity must concentrate on increasing the throughput capacity of its most restricted element. The one-way transit restriction in Gaillard Cut only allows us to get approximately 38 ships/day to the locks. The locks are capable of transiting approximately 44 ships/day. Widening removes the bottleneck caused by one-way transit restrictions in Gaillard Cut and moves the new bottleneck to the locks.

### Project Definition and Planning

In 1983 the PCC embarked on a design project to determine the geometric characteristics of a channel that would permit two-way traffic of Panamax ships in Gaillard Cut. Hydraulic models were built in the world's largest hydraulic test basin in Sweden. Computer experiments using PCC pilots on an advanced ship simulator at the U.S. Merchant Marine Academy in Kings Point, New York, were exhaustively analyzed for varying channel widths. The results of the above studies, con-



ducted by world recognized authorities, led to a set of dimensions for the new channel that would allow safe two-way traffic in Gaillard Cut for Panamax type ships with a minimum of excavation.

- Increase the width of straight segments to 630 feet
- Increase the width of curves up to 730 feet
- Increase the radii of all curves

For this second widening, not all excavation will be performed along the West Bank of the Cut. The criteria to excavate along the inside of each curve, but limiting intrusion in the most slide-prone areas, will result in a straightened navigation channel with additional benefits to navigation, such as reduced effects of bank forces on transiting ships and improved visibility.

The Board of Directors approved the project in June 1991 under the assumptions that it would be performed in a prolonged timeframe, maximizing the use of internal Commission resources, thus minimizing out-of-pocket expenses. At the time, such out-of-pocket expenses were estimated at \$200 million in 1991 dollars. The original target completion date was the year 2014.

An increase in demand experienced during the last several years has led us to bring forward the target completion date to the year 2002. This has required a significant acceleration of most activities and their associated costs.

### **Program Implementation**

The areas of Gaillard Cut affected by the widening were divided into 18 different excavation projects. In general terms the excavations were planned in a north to south direction, in order to use the widened channel as a route for barges heading north to Gatun Lake with excavated material, and thus minimizing the impact on Canal navigation.

The excavation process was broken down into three phases:

- Dry excavation: removal of all material above elevation 90 feet by contract.
- Drilling and blasting of the material below elevation 90 feet by PCC.
- Dredging of all the underwater blasted material below 90 feet by PCC.

In order to perform this work, the following tasks were necessary.

Definition of Topography. Detailed topographic maps of the areas affected by the excavations, and by the disposal of excavated materials, were required. In order to comply with the established schedule, at an acceptable level of precision, the science of Photogrammetry was utilized. Hundreds of aerial photographs were taken and converted into topographic maps with a scale of 1:1,000 and stored in GIS computers. Areas obscured by clouds or excessive vegetation were surveyed with field crews. The results were merged into the same topographic database on a computer.

The results were a series of three-dimensional digital models of the entire Gaillard Cut and surrounding areas that were of adequate precision for the excavation designs. These results were accomplished in a fraction of the time and with a fraction of the resources that would have been required if traditional methods had been followed.

Excavation Designs. To develop excavation designs it is necessary to predict the performance of slopes that have not yet been excavated. Geologic models obtained from our \$4 million drilling effort were complemented with various other sources of information that provide data that is relevant to the stability of a slope.

Such sources include: a testing program with a state-of-the-art geotechnical laboratory for measuring the strength of fractured and weathered rock masses, the installation of sophisticated groundwater monitoring instruments that provide the best information to date on the complex variations of the groundwater regime that so affect the stability of the slopes, and the compilation of past movements of surface monuments placed throughout the Cut.

All the above data added valuable information that was used in the design process. However, the experience our Engineering Division has gained with the back-analyses of past landslides yield crucial information on the shear strength of the materials during landslides that have taught us more on the mechanics of these failures than any other source of data. The meetings our designers have held with our Geotechnical Advisory Board has also



contributed to our ability to produce optimal designs for Cut Widening. Members of our Geotechnical Advisory Board include two past recipients of the Terzaghi Lecture (the highest worldwide honor in Geotechnical Engineering); two distinguished Professors of Geotechnical Engineering; the Director of the Geotechnical Laboratory at the Waterways Experiment Station of the U.S. Army Corps of Engineers. A former director of the U.S. Geological Survey's Office of Earthquakes and Volcanoes; and authors of major papers and textbooks in Geotechnical Engineering.

PCC construction inspection teams have monitored the progress of the dry excavation contracts with a minimal amount of disputes. The work is on time and under budget using locally available private contractors.

Blasting for the Wet Excavation. The careful design of blasting patterns assures the proper fragmentation of the material, so it is manageable by the underwater excavators that will ultimately remove it. Our Dredging Division operates four large Drill Rigs that will need to make over 50,000 holes to place explosives throughout the project.

Land Dredging. The Panama Canal Commission recently purchased a large land-based excavator to perform the top portion of the dredging. The Liebherr 994 has a 5.7 m<sup>3</sup> bucket with a reach of 12 m that can effectively remove from land, the upper third of the blasted underwater material.

This equipment will remove underwater excavation at approximately half the price that removal would cost using a dredge, and with less impact on navigation. Therefore, it makes economic sense to remove as much of the material to be dredged as possible with this land based methodology. A third of the total dredging depth constitutes the approximate threshold at which the economic advantages of this equipment are offset by its reduced productivity.

Dredging. The Christensen has been in the Commission's fleet since 1977. It is rated as one of the world's largest dipper dredges. Its main mission is to address landslide problems when they occur. Past experience has shown that the ability to respond immediately to landslide threats requires in-house resources. This capability is now available to perform the remaining two-thirds of

the underwater excavation related to the widening.

Drainage and monitoring of previous excavations in Gaillard Cut have proven to be the most cost-effective solution to the problem of landslides. Finally, as the last item in the Cut Widening effort, areas affected by excavation and by the disposal of excavated materials will be reforested to minimize the environmental impact of this large excavation project.

### Conclusions

The Gaillard Cut Widening Program is progressing well. To date, 16 out of 18 excavation projects have been designed (representing 93 percent of the work), and the dry excavation for 15 of these have been contracted. Such contracts represent approximately 88 percent of the dry excavation. The PCC Drilling and Blasting activity is approximately 40 percent completed, and the Dredging is approximately 15 percent done. Our new hydraulic excavator has just begun to assist the dredging process, by performing the upper third of the wet excavation. Dipper Dredge Christensen is scheduled to complete the work by December 2002.

Resources are in place to meet this accelerated schedule. The Cut Widening Program will be ten years ahead of the original schedule, and by our best estimates its costs will be 10 percent below the original estimates developed during the feasibility stage of the project.

In a little over five years, Panamax type ships will be able to take advantage of two-way traffic at any point along the Gaillard Cut. The two-way transit of Panamax ships through Gaillard Cut will increase the throughput of ships at the Panama Canal by 20 percent, help lower Canal waters time, and facilitate our maintenance of the locks by virtue of having the additional capacity to more rapidly reduce backlogs after scheduled outages for maintenance work.

In addition to providing the Panama Canal with increased capacity, the Cut Widening Program has also provided a very important additional benefit. A young group of Panamanian engineers and geologists have acquired valuable knowledge and experience in the planning, development, design,



and implementation of major civil works of this nature. They have been exposed to state-of-the-art technology in several important fields; they have been in contact with world-class technical experts; and they have been through the process on a hands-on basis. The Panama Canal Authority will inherit a strong team of experienced professionals with the capability to undertake other major improvement projects as needed. Excavations for a new set of locks and associated dams, further deepening, or further widening, will be well within the in-house capabilities of the Panama Canal Authority.

Widening of the Panama Canal is fundamental to a broader, currently on-going one billion dollar modernization and capacity improvement program at the waterway.

The widening of Gaillard Cut is part of a well planned and executed program that will provide significant benefits to international shipping by guaranteeing sufficient additional capacity to avoid long vessel backlogs. By executing an investment program that increases Canal capacity by providing safe two-way passage of all vessels throughout the entire waterway, the Commission aims to ensure that the Panama Canal remains an essential part of the isthmian economy and a viable artery for world trade well into the next century.

• *Thomas W. Droham is Director of Engineering and Construction Bureau, Panama Canal Commission*



**THE CANAL IN THE 21st CENTURY: Summary of the Question-and-Answer Period:  
Capacity Improvements - The Gaillard Cut Widening Program**

**Speaker:**

**Thomas Drohan**

*Director, Engineering and Construction Bureau, PCC*

**Panelists:**

**Agustin Arias**

*Acting Chief, Canal Improvements Division, Office of Executive Planning, PCC*

**Dr. William F. Marcuson, III**

*PCC Geotechnical Advisory Board and Director, Geotechnical Laboratory, U.S. Army Corps of Engineers*

**Dr. Luis D. Alfaro**

*Acting Chief, Maintenance Division, Engineering and Construction Bureau, PCC*

**Moderator:**

**Christopher Hayman**

The cost of the Gaillard Cut widening has been estimated at just under \$200 million, which represents 20 percent of the one billion dollars that will be spent in the entire enhancement program during the next six years. Mr. Drohan explained that the cost of the Cut widening has been maintained below budget estimates due to the excellent prices that have been obtained from available contractors locally. In addition, the use of a mining excavator to remove the upper third of the underwater excavation is expected to result in additional savings.

In answer to a question on whether the building of a third set of locks would require further expansion of the Gaillard Cut widening program, Mr. Drohan said that if a third set of locks is built, a decision must be made on the maximum beam of ships these locks would accommodate. Dependent upon that design, the determination would be made if further widening is required to allow two-way transit of vessels in Gaillard Cut. Mr. Arias reinforced the answer stating that the Panama Canal would have to reevaluate the new channel layout based on revised estimates of transits of post-Panamax vessels. The current widening program was designed to allow two Panamax vessels to pass safely in the Cut.

During the discussion, it was mentioned that Canal capacity is limited by the locks throughput and that the improvement resulting from the widening of Gaillard Cut would be much more if the locks' throughput were increased. Mr. Drohan explained that two-way traffic through Gaillard Cut could mean 60-70 ships a day, but this traffic is limited by water movement times at the locks (gravity flow) which limits the traffic to about 45-46 ships a day. Mr. Arias added that because of restrictions at Gaillard Cut today, effective utilization of the locks is about 80 percent. The goal of the Panama Canal, however, is to increase effective utilization of the locks to over 90 percent.



A major element of our modernization drive is the upgrade of its locks machinery and controls to improve system reliability, safety of operations, and maintenance effectiveness, while also achieving modest increases in throughput, and reductions in operations and maintenance manpower requirements. All of this is expected to translate to superior service to our customers at reduced operating costs.

To better understand the value of these investments, I will provide you with some insight on the important role this old equipment plays in the day-to-day operation of the Panama Canal locks, its original design, and its inherent problems. I will also go over the conceptual design and operation of the new systems, and their impact on operation and maintenance practices.

The Panama Canal requires locks, in essence water stairways that raise oceangoing vessels from sea level to Gatun Lake to cruise over the continental divide and step down to sea on the other side of the isthmus.

To accomplish this, water to move vessels up and down at each set of locks is gravity fed from Gatun Lake, which is one of the largest artificial bodies of water in the world. During a lockage, miter gates enclose the vessel in the chamber and permit the independent drawing or spilling of water from or to the adjacent body of water. The raising of valves at the upstream end of the 5 meter diameter main culverts allows the inflow of water. From these main culverts, lateral ducts which extend under the chambers from the Centerwall and Sidewall feed portholes on the bottom of the chamber to raise the level of water. For each ship transiting the Canal, about 197 million liters of fresh water are used by the locks and finally spilled into the ocean. Gatun and Madden Lakes provide all of the fresh water that the Canal requires for its operation. The operation of all valves and miter gates is centralized at each locks in its Control House.

I will now take you back in history to see what went into the development of these systems vital to the operations of the Panama Canal.

The original miter gate and valve mechanisms, as well as the controls were designed by the innovative American electrical engineer of German descent, Edward Schildhauer. He toiled over the de-

sign, as there were no established models to draw from; just the size, weights, mechanical stresses, and the humid environment posed extraordinary challenges. There were many unknowns that he had to struggle with, such as, acceleration, dynamic mechanical friction, water resistance as the gate or valve moved through the water, culvert hydraulic efficiency and cavitation. In the case of the miter gates, he even had to contend with wind resistance due to their sail-like behavior, as well as the changing density of water in the chambers resulting from the mixing of sea and fresh waters, which produces significant turbulence.

This technology has survived almost a century, yet, over the last two decades, there has been an increase in the maintenance requirements of the machinery principally due to fatigue of the major mechanical components. Replacements have become more difficult to obtain due to their very old design. Some cannot be manufactured using the latest design standards and manufacturing practices and still produce parts within the tolerances required to engage existing elements. This is especially true of gears, which are the principal components of all machinery in the Panama Canal. This situation has also resulted in exponential increases in the cost of replacing components and in extended delivery schedules. Even when a manufacturer is finally located, the procurement is not free of problems, thus we must engage independent quality assurance services that only add to the cost. The longer lead times also require that we stock more parts in order to insure these are locally available while the long procurement process progresses; this too translates into higher costs. Furthermore, the old systems demand labor-intensive preventive maintenance and are difficult to retrofit with condition monitoring instrumentation that can further reduce maintenance requirements and boost reliability.

Since 1989 the Panama Canal has been contemplating the retrofitting of the old mechanical systems with hydraulic technology. Technical research trips were made to investigate the hydraulic applications at other locks in the world. Many systems were examined while in actual operation at locks in the United States. A visit in 1992 to the Kiel Canal in Germany increased our confidence



level to pursue the conversion to hydraulics of the miter gate and valve operators. In 1994 award was made to Rexroth Corporation for the design, manufacture and supervision of the installation of the first hydraulic valve operator. The equipment was delivered and installed in 1996. Since then the equipment has worked flawlessly.

Later that same year, the Rexroth Corporation won a second bid for two hydraulic miter gate operators. This contract covered, design, manufacture, and supervision of the installation. The system was partially installed in May 1997 and final commissioning took place just a week ago after rehabilitated miter gates were reinstalled.

To better grasp the significance of the improvements being achieved with the new system it is important to understand its operation. The existing 116 valves are powered by electric motors. Power from the motor is transmitted through several gears to two revolving screws, which drive a crosshead by means of two non-revolving nuts. A valve stem is pinned to the crosshead's center; the stem passes through a watertight bulkhead and connects to the valve body.

The converted valve on the other hand, has a hydraulic power pack located in the machinery tunnel. Stainless steel pipe connects it to the hydraulic cylinder. The rod extends through the watertight bulkhead and is connected to the valve body. As the cylinder is extended, the valve body is lowered and the flow of water in the culvert stops. Similarly, as the cylinder is retracted the valve body is raised and water flows through the culvert.

Now, lets turn to the existing miter gate system. Here, the gate leaf is moved by an electric motor through a series of gears and a strut arm which is connected to the miter gate to provide the final moving effort. The total gear reduction ratio of 5,883-to-1 is obtained through this gearing which provides sufficient mechanical advantage to drive the 700 ton miter gates with only a 40 HP motor.

The hydraulic system consists of a power pack and control panel located in the machinery tunnel which connects via pipes and hoses to a hydraulic cylinder in the operating pit. The cylinder is mounted on a gimbal and anchored at the original location of the crank gear's center pin. The rod

end of the cylinder is connected directly to the miter gate. As the cylinder is extended, the miter gate closes to its miter position and conversely, as the piston is retracted the miter gate opens to its recessed position.

For both the valve and miter gate hydraulic systems LED displays showing cylinder position and percentage of opening were installed in both control panel and at the Locks Control House.

Many of the 92 miter gate crank gears are 1914 vintage and are showing serious material fatigue problems thus the need for their replacement is critical. Just the cost of a new crank gear and drive pinion set equals that of a whole new hydraulic system. Delivery of miter gate crank gears take at least two years versus six months for a complete hydraulic system. These significant factors have further motivated upgrading all locks operating machinery from mechanical to hydraulics systems in a progressive schedule. Both hydraulic prototype systems have proven to be reliable, have fewer components, are also more quiet in their operation and require less maintenance. Spare parts are readily available at reasonable cost and with short lead times.

The hydraulic systems also fit well into the proactive maintenance system we are implementing at the Panama Canal locks. Maintenance of the new systems has been reduced to condition monitoring of oil levels, oil analysis, and replacement of the desiccant. Furthermore, the fact that the hydraulic systems are operated through Programmable Logic Controllers (PLC) reduces the cost and eases the implementation of modern machinery controls.

I will now present to you what we envision the modern Locks Machinery Controls will be like and what benefits we expect to reap from this very exciting project. Before I explain the new system and its virtues I will highlight some of its history.

The original Locks Machinery Control System (LMCS) incorporated the most modern concepts and hardware available at the time. It consisted of a control center for remote operation of as many as 200 pieces of major equipment located as far as 3,000 feet from the central control house. It boasted the first industrial application of selsyn motors for precise simulation of field equipment position. It



also incorporated mechanical interlocks as used in railway switching to reduce errors in operations.

Today, the Locks Division of the Panama Canal Commission proposes a state-of-the-art controls technology project that will provide the following benefits:

- reduced possibility of human error
- simpler and more reliable operation
- increased equipment indication accuracy
- more comprehensive system status
- increased Canal capacity through a more precise operation
- reduction in staffing levels

The project will be implemented drawing on today's industry standards and trends. It will integrate latest maintenance concepts, such as early component and system failure detection, system maintainability, operations safety and the improved reliability of typical robust industrial process control systems.

Supervisory Control and Data Acquisition (SCADA) technology as used in modern facilities for mission critical process control will be the backbone of the overall system. The proposed system will employ electronic interlocks, in a centralized control station with comprehensive electronic redundancy. Fully automated, semiautomatic and manual operation modes are contemplated.

We envision an automated typical lockage as a process where a PCC pilot guides a vessel in the locks in coordination with the Lockmaster. A wireless controller on board the locomotives and ship would report position indication to the Lockmaster and to the pilot, through a computer graphics representation. The Lockmaster would have additional visual aids such as closed circuit television (CCTV) cameras, also computer controlled. Once the ship is brought to a stop, the Lockmaster initiates the automated lockage procedure. This includes corresponding operations of miter gates which are followed by valve operations sequences that accomplish water movement through culverts and chambers. All sequences are performed automatically until water equalization is achieved and corresponding miter gates are automatically opened to permit the movement of the vessel out of the chamber. After communications between

the Pilot and Lockmaster, the ship is moved into the next chamber or out of the locks, whichever is the case. Once the ship clears the chamber, a "Close Miter Gate procedure" is executed, which automatically prepares the chamber for the next lockage.

The data acquisition process provides the source data for all operations and maintenance analysis. It is performed at a high sampling rate during each machine operation. From motors, instantaneous voltage and current, vibration, winding temperature and front bearing temperature are acquired. Power distribution switchgear is also monitored, offering breaker status and other important information. In some machinery, force measurement or torque, as well as hydraulic pressures, are required for adequate and safe equipment performance. Many other independent field sensing devices, such as transmitted beam photo switches, radar water level gauges, and proximity sensors, also feed the system.

With the levels of artificial intelligence available in today's control systems, the LMCS can predict a failure way in advance by analyzing data acquired from equipment operations and trending performance data. The system can calculate remaining service life before failure, making the actual replacement efficient, by avoiding premature replacement and unscheduled early failures. If there is a sudden machinery malfunction, the system can diagnose the problem and recommend troubleshooting and repair procedures.

The LMCS can assist maintenance auditing by providing automated continuous maintenance surveillance. The LMCS will be linked to the Computerized Maintenance Management System (CMMS), a separate system, which is responsible for controlling the maintenance resources, i.e. labor, spare parts, work orders, etc. When diagnosing a problem, the LMCS may automatically generate a work order through the CMMS. The responsible supervisor then assigns and dispatches the crew to perform the inspection or repair.

Moreover, with the statistical data analysis system included with LMCS, performance measurements of individual machinery, locks lanes, or whole locks are instantly available. Indices such as





equipment availability, and efficiency, as well as delays to shipping will be readily generated upon request by the system.

Aside from system optimization, LMCS operation simulations may be employed to train operators in normal and emergency procedures. This feature may also be used to play back recorded locks events, such as ship accidents and other incidents, reproducing actual sequence of events that will help identify root causes for conclusive problem resolution.

As an added feature, the LMCS clearly fills security gaps that the current system has in the areas of equipment failure, unauthorized actions and operator errors. Upon equipment failure or abnormal behavior, the machinery will shutdown safely, according to the type of event, by emergency logic contained in its local controller. The system can be programmed to disable unauthorized operation of machinery and minimize operator error by comparing all operator commands to established operation rules before execution is permitted. Though override is possible once an operator logs into the system, he is held accountable for all actions or omissions, as all events are recorded and time stamped.

In summary, different levels of automation and condition monitoring may be achieved through an electronic process control system. It is envisioned that there shall be independent centralized control at each of the three Locks facilities through two Supervisory Control And Data Acquisition (SCADA) systems, one per lane.

Extensive research has been dedicated to market surveys, reviewing industry trends and standards, investigating available cutting edge technology, new maintenance concepts, and control process design. By benchmarking with other locks, such as Barkley, Kentucky and Wheeler Locks of the Nashville District, and Mel Price and Lock 27 in the St. Louis District, we have learned from their experiences.

As a result, a reduced scale experimental application has been developed at Miraflores Locks, East lane lower level, exclusively for demo purposes. It will also provide us with valuable information and field data that will be used in prepar-

ing the performance specifications for the Pedro Miguel LMCS to be placed on bid in FY 1999.

The Locks Machinery and Controls modernization program encompass a progressive procurement and installation schedule that starts in Fiscal Year 1998 and continues on through FY 2007.

In concluding, I would like to focus on the complementing nature of all of these projects. The fact is that one of the projects alone will not meet our main objectives of fine tuning our lockage operations and our maintenance efforts to obtain the desired efficiencies, reliability and operations safety. In particular these projects together will offer the following specific opportunities:

- Improved Plant and Vessel Safety
- Eliminate Locks Machinery and Controls obsolescence
- On-line Predictive Maintenance
- Maintenance Auditing
- On-line Performance Measurement
- Reductions in Operations and Maintenance work force levels
- Capture Human Operation Expertise with Artificial Intelligence
- Modest Increase in Lockage Throughput
- Instant Access to Accident Incident Analysis
- Access to Expert Systems & Diagnostics
- Transparent Connectivity to the Computerized Maintenance Management System (CMMS)
- Connectivity to the Enhanced Vessel Traffic Management System (EVTMS)

Through the execution of these mission critical projects, the Panama Canal expects to give its customers improved and more efficient service that will meet the shipping demands of the coming century.

*• Jorge L. Quijano is Chief of the Locks Division  
Panama Canal Commission*

Good afternoon ladies and gentlemen; it is a pleasure to have this opportunity to offer you a general outlook of the system used to assist the positioning of vessels at the locks and its key elements, the towing locomotives and their tracks. We will review the historic evolution of the system and you will be able to appreciate that the role they play today is, more than ever, vital to the safe maximization of the locks throughput.

During the early days of this century, the designers of the Panama Canal made a fundamental decision which gave it a unique feature not found in any other lock canal. They decided that oceangoing ships would need mechanical assistance while passing through the Canal's massive lock chambers and provided a family of electric towing locomotives and tracks. The reason for their use lies both in the characteristics of the Canal and its oceangoing customers.

Their studies concluded that ships should not proceed through the locks under their own power because of the unacceptably high risk of ships colliding with the locks structures.

Among the principal peculiarities of this Canal that make difficult the maneuvering of vessels are the currents created by the mixing of fresh and salt water and the movement of ships caused by filling operations. On the other hand, the thin skin of oceangoing vessels, their pronounced flairs and the large portion of their hulls above the water line were of main concern in the minds of our Canal designers.

Once the designers concluded that the ships would need an independent system to maneuver them, its basic requirements were established. The system should have the ability to place the ship in proper relation to the lock and keep it in its course; to accelerate and decelerate it; to avoid the change of the lines between flights; and to use a small number of skilled operators rather than a large number of unskilled men to accomplish these tasks.

A towing system was designed by Mr. Edward Schildhauer, Electrical and Mechanical Engineer of the Isthmian Canal Commission. The devised system merged proven technology from railroad locomotives and capstans used for pulling ships into dry docks. Put in very simple terms, the tow-

ing locomotive is nothing more than a winch that travels on rails and under its own power. On the other hand, the entire towing system plays the role of a conveyor belt of a production line that puts ships through.

To assist the vessels, the locomotives must move along the lock walls from one end to the other, requiring to go over steep inclines and to negotiate vertical and horizontal curves.

To achieve the tractive effort required, a center rack rail was provided. The rack rail, placed in the middle of the running rails, also provides means to secure the locomotive to the tracks.

A pair of conductor rails that run parallel to the tracks and below ground level provide electric power to the locomotive. These elements constitute what is known as the tow track.

The original locks locomotives, or "mules," as often called, were built by the General Electric Company. They could pull 25,000 pounds on a single windlass cable, tow at 2 miles per hour, and run at 5 miles per hour when not towing. Forty units were ordered for the opening of the Canal at a cost of 13,000 dollars each.

The original "Locks Vessel Positioning System" satisfied, with a comfortable margin, the vessel mix and demand envisioned during the first decade of the century. At that time, 95 percent of the vessels of the world were less than 600 feet long.

At the beginning, most of the ships transiting the locks were assisted by four locomotives, one on each side ahead and one on each side astern. As years passed, ships transiting the Canal grew in number and size, increasing the demand for locomotives. By 1951, up to 10 locomotives were required to assist some vessels, and the fleet size had grown from 40 to 67 units.

After more than 30 years in service, the original locomotives started showing signs of severe deterioration and limitations to satisfy the traffic loads.

Their replacement was approved in 1956 after an analysis of different alternatives including the overhaul of the original locomotives, alternate methods of positioning vessels within the locks, and even the elimination of the locomotives. In regards to conducting lockages without locomotive assistance, a report stated that "elimination



would increase time required per lockage and would thereby reduce the capacity of the Canal".

Throughout its service life, the locomotive had proven to be indispensable for the safety of the operations and to be the most effective means for maximizing locks throughput.

It is worth mentioning that, moved by an avid desire to look for a better solution for handling ships at the locks, the Canal explored different alternatives.

The best example is the two prototypes of a radically different concept built by R.G. LeTourneau. The new machines promised the advantage of being able to handle the ships from only one of its sides, eliminating the need for locomotives on the opposite side. After going through many trials, breakdowns, repairs, and modifications, the machines proved to be non-operative and were rejected. The failure prompted the decision to go out and solicit bids for the design and fabrication of an improved version of the original design concept.

The solicitation resulted in a contract award to Mitsubishi of Japan for the delivery of 57 locomotives by 1965 at a cost of 115,000 dollars per unit. The new machines, in use to the present, are almost three times stronger and twice as fast as their predecessors. They can pull 70,000 pounds with its two winches, tow at 3 miles per hour and run at 9 miles per hour when not towing. The stronger machines facilitated the handling of vessels while reducing the number of locomotives required per vessel.

Once again, the new locomotives satisfied the traffic demands for about a decade after the initial procurement, but the increased demand required acquisition of additional units in the years to follow; augmenting the fleet size to the present 82 locomotives. The number of locomotives assigned to a vessel nowadays varies between four and eight.

The passing years also saw an evolution in the deployment of the locomotives.

The regular lockage, in which one set of locomotives carries a single ship from one end of the locks to the other, soon shared the operational stage with the "tandem lockage," in which two small ships, each with its own set of locomotives, are handled simultaneously in the same lock

chamber as if they constituted a single, large vessel.

A third lockage style, the "relay lockage," was developed in the late sixties as a locks throughput enhancement procedure. "Relaying" is achieved by assigning two sets of locomotives to assist two vessels in the same lane simultaneously. The first set carries a ship from its approach to the locks halfway through the lane, while the second set carries it from there until it exits the locks. With this procedure, a vessel can begin its lockage without having to wait for the ship ahead to clear the locks.

The relay procedure permits a throughput increase of up to four vessels per day at present. An additional increase could be obtained if the direction of traffic in a lane was not changed several times in a day. Two-way traffic in the Gaillard Cut, possible only after completion of its widening, as explained earlier by Mr. Drohan, will permit to dedicate each lane at each set of locks to the movement of traffic in one direction to obtain maximum benefit from the relay procedure.

Having now described the background of the towing system and the lockage procedures, we are better prepared to discuss the plans for the future.

At present, the sustainable capacity of the Canal supports the demand at satisfactory quality level. However, when we translate the traffic forecast into capacity requirements, we notice that, in order to preserve the service quality level, by year 2000 Gatun Locks will have to conduct simultaneous relays in both lanes; and that by year 2003, Miraflores Locks will have to follow suit. Furthermore, the analysis makes it evident that, by year 2003 all locks lanes will have to support eight car lockages.

The capacity requirement translates into growth of the locomotive fleet from 82 units today to 90 units by year 2000 and 108 units by year 2001.

The Panama Canal Commission followed the above analysis with a plan to buy 26 additional locomotives that will set the technological standard for the future. Proposals in response to a contract solicitation were received in August and are being evaluated at this moment; we expect to sign a contract in October. The first eight units are scheduled for delivery, testing, and acceptance in 1999. The remaining 18 locomotives will be delivered at a rate



of two units per month in 2001. The contract will also include options for buying 82 additional units to replace the existing fleet.

The third generation of locomotives will provide higher capacity with the increase in the towing and return speeds to 5 and 10 miles per hour respectively. The new speeds resulted from an analysis of the effects of locomotive speed on locks throughput. The new locomotives are required to adjust their performance to work together with existing locomotives on the same tracks.

The locomotives will be designed not only to deliver higher performance, but also to have a greater availability for operation; requiring less maintenance. The new machines will have an integrated control system, an automatic cable retrieval device, safeguards to avoid improper operation, and possibly, an automatic ship centering system. These locomotives will also provide an improved environment for the operator.

Because it takes time to design, manufacture, and test an entirely new locomotive, the procurement program that started under the United States administration will end under the Panamanian Government management. The program, including the request for proposals, contains all the elements necessary for fully supporting the very special legal and financial requirements.

Besides purchasing additional locomotives, the Commission is undertaking other major efforts to ensure the quality of support offered by the Locks Vessel Positioning System. The ever increasing loads and duty cycle imposed on the tow tracks have left signs of distress on different segments of them.

The Commission has planned the complete reconstruction of the locomotive tracks within four to six years and has been developing and testing track demolition and reconstruction schemes that will be used in this effort. Recently, a contract was awarded for the conceptual design for the replacement of tracks at Gatun Locks.

The Commission is also engaged in a vigorous program to rehabilitate the existing locomotive fleet, which includes the implementation of numerous improvements.

The locomotives are now being rehabilitated at a rate of six locomotives per year. The intention

of this program is to sustain the operational readiness of the existing second generation fleet until it is replaced by the third generation.

After completing the review of the evolution and future plans for the locks vessel positioning system, we would like to share some final thoughts before closing this presentation.

The existing concept of locks based assistance to vessel positioning may be perceived by some as obsolete, too complicated, or unnecessary. However, when alternatives were analyzed they were found either too risky or too slow for the pace of the Panama Canal. The Third Set of Locks Project will offer the best opportunity to assess other alternatives not constrained by present conditions. It will also offer the opportunity to develop a new locks vessel positioning system, in which the locks structure, machinery, and procedures complement each other in their own philosophy for achieving the successful operation of the locks.

We hope that this presentation has increased your understanding of the important role of the Locks Vessel Positioning System and recognize in the deployment of more and better locomotives, the most effective tool for maximizing locks throughput.

We also hope that, through each of these presentations, you will recognize the intricate interrelationship among the different subjects and appreciate the combined efforts being carried to assure the successful accomplishment of the Panama Canal goal of ensuring safe and expeditious passage to the world maritime industry, very well into the 21st century.

• *Hernan Acevedo is Project Engineer of the Locks Vessel Positioning System Project Panama Canal Commission*



**THE CANAL IN THE 21st CENTURY: Summary of the Question-and-Answer Period:  
Increasing Locks Reliability and Safety Through Modernization/Maximizing Locks Throughput**

**Speakers:**

**Jorge L. Quijano**

*Chief, Locks Division, Marine Bureau, PCC*

**Hernan Acevedo**

*Manager, Locks Vessel Positioning System Program, Marine Bureau, PCC*

**Panelists:**

**Parveen Gupta**

*Marketing Manager, Hydraulics Civil Engineering, Rexroth Corporation*

**John Gribar**

*Chief, Design Branch, U.S. Army Corps of Engineers*

**Agustin Arias**

*Acting Chief, Canal Improvements Division, Office of Executive Planning, PCC*

**Theodore Lucas**

*Deputy General Counsel/Procurement Executive, PCC*

**Henry Stec**

*Chief Contracting Officer, General Services Bureau, PCC*

**Moderator:**

**Christopher Hayman**

A member of the panel emphasized that during the 83 years of its existence, the Canal has transited more than 800,000 ships and some of the original equipment is now showing signs of age and wear. The modernization program will serve to replace much of the original machinery with state-of-the-art technology and equipment, thus providing Canal customers with safer and more efficient transit service well into the future. Nevertheless, many of the original structures have held up extremely well such as the miter gates which still appear to be in excellent condition.

Mr. Parveen Gupta indicated that the new design incorporates proven technology used worldwide. The hydraulics technology which has been applied, for example, has been used for many years in Europe and the United States, and the equipment being installed is expected to have an extremely long life cycle with very little maintenance required.

From the administrative and legal point of view, Mr. Lucas explained that all Canal improvement and modernization projects rely to a great extent on the successful execution of contracts with commercial sources in Panama and around the world. Despite the Canal transfer from U.S. to Panama stewardship at the end of the century, there should be no disruption or delay in the performance of Canal contracts. Special contract terms and conditions have been formulated that will permit the Panama Canal Authority under the Panama Government to succeed, or legally replace, the Panama Canal Commission in all ongoing contracts. Canal operations and Canal modernization will continue forward without interruption.

Concerning the acquisition of new towing locomotives, it was mentioned that extensive consultation has occurred with the various potential vendors to develop the specifications of the new loco-



It is a privilege for me to address the role of maintenance at the Panama Canal Commission. The success of the Canal, as measured by its reliability, is credited not only to its magnificent construction, but also to our professional and comprehensive maintenance program, allowing us to proudly say that the Panama Canal is in better condition now than it has ever been since its opening. Let me share with you some of the relevant areas concerning our maintenance effort: general background of our equipment and infrastructure; insights into maintenance at the Commission; other related efforts supporting the maintenance activities; and finally, future maintenance and improvement actions.

Most of our equipment is one-of-a-kind, designed and manufactured specifically for the Panama Canal. Many of the key elements of the original design remain in place and require extraordinary maintenance efforts to guarantee continuous and reliable service.

We are responsible for maintaining a great deal of equipment and infrastructure and it is only through an aggressive maintenance program that we have been able to keep the Canal in top operating condition.

For us, good maintenance yields continuous, reliable service. It is important because it maximizes equipment availability and performance, extends the operational life of the equipment, minimizes maintenance costs, and optimizes personnel utilization. In short, it enables us to be a competitive organization, providing best-value service.

There are five major areas we target for maintenance and improvements:

Dams—We have three main dams which regulate the amount of water required to operate the Canal and manage water levels for flooding control. Without a reliable, adequate source of water, the Canal would cease operations.

Navigation Channel—Both water and land-based equipment are used to maintain the depth and width of the 83.5 kilometer channel. Regular dredging virtually assures a year-round minimum draft of over 12 meters, even during dry periods.

Locks—There are three locks, Gatun, Pedro Miguel and Miraflores; each has various main com-

ponents such as: control boards, towing locomotives, electrical motors, culverts, miter gates, machinery gears, and valves. Overhauls of these components are regularly scheduled to keep the locks equipment in excellent operating condition.

Floating Equipment—The upkeep of waterborne craft such as tugboats, launches, floating cranes, dredges, dump scows, drill-boats, and navigational aids is essential to support the Canal's maintenance and operation.

Utilities and Communications—The Canal maintains one thermoelectric and two hydroelectric generating stations and related facilities. We are also responsible for two potable water filtration plants and their distribution systems throughout the Canal area. Today, our excess electricity and water are sold to U.S. military installations and to the Government of Panama.

The Commission also provides maintenance to a comprehensive telecommunication network necessary for monitoring transit activities across the waterway. This system includes: telephone exchanges, radar and microwave equipment, transmitters, and closed-circuit video systems.

For us, round-the-clock maintenance is critical if we are to provide reliable and safe service to our customers. In fiscal Year 1996, we spent 25 percent of our budget in those maintenance activities or \$160 million.

Our present maintenance effort is accomplished through: (a) a comprehensive preventive maintenance program supported by computerized maintenance management systems, (b) development of new technologies and maintenance procedures, (c) maintenance audits of our infrastructure and, (d) state-of-the-art training programs for our workforce.

Our equipment is maintained periodically by highly trained professionals, assisted by Maintenance Management Systems helping them to effectively monitor and control maintenance assignments and equipment condition.

We are in the process of replacing our infrastructure and systems with more modern, safer, and reliable technologies and procedures such as: (a) faster tow track replacement techniques for reducing downtime and minimizing disruptions to normal operations; (b) improved automated infor-



mation systems based on client/server technology; and (c) Locks machinery conversion to a simpler system providing enhanced performance, less maintenance, and greater reliability. The Chief of our Locks Division will develop this subject later this afternoon.

The increase in the number and size of vessels, coupled with the age of the Canal, prompted an assessment of the infrastructure and equipment. This study was completed by the U.S. Army Corps of Engineers in Fiscal Year 1996, in coordination with the Blue Ribbon Engineering Committee, a group of distinguished Panamanian engineers.

Their joint conclusion was that the overall condition of the Canal is good, and validated the Commission management's program to modernize original Canal features and processes. To facilitate the actual monitoring of the implementation process, a master plan was developed for use by Panama Canal management.

The significant increase in Canal traffic during Fiscal Years 1995 and 1996 motivated plans to accelerate execution of Canal capacity and major maintenance projects. To ensure all capacity projects are completed concurrent with the widening of the Gaillard Cut, the Panama Canal Administrator requested the development of a Programs Integration Plan. This Plan is helping management monitor and guide 23 major maintenance and improvement projects, estimated to cost \$907 million through the year 2008.

Among the major improvements at the waterway are: (a) acquisition of additional tugboats and locomotives to accommodate increased traffic and larger ships; (b) installation of a transfer table to increase the number of miter gates being overhauled yearly; (c) implementation of new state-of-the-art technology at the Marine Traffic Control Center to automate major functions, improve vessel scheduling, and enhance navigational safety; and (d) acceleration of the Gaillard Cut widening Program allowing safe two-way traffic of wide-beam vessels. Mr. Tom Drohan will expand on our Cut Widening Program. Completion of these projects will increase operating capacity by 20 percent, allowing the Commission to meet future traffic demands.

The Panama Canal's extensive facilities and diverse equipment require a skillful and dedicated professional work force to achieve maintenance excellence. Accordingly, the Commission spends approximately \$13 million yearly on training in technical, supervisory, and managerial areas. These programs expose our craftsmen and supervisors to the latest industry techniques and systems, basic craft information, and cross training.

To ensure the Panama Canal remains a world class operation, we are pursuing additional actions that will firmly place us well into the next century. To this end, we contracted renowned consultants to conduct studies and recommend organizational structures that would best meet our current and future maintenance and operational needs. The recommended structure was revised by the Commission management with the objective of consolidating functions and promoting synergy.

We are also aware that significant gains in efficiency can be best achieved by constantly reviewing our maintenance processes. With the assistance of the United States Army Manpower Analysis Agency, a productivity improvement study is being conducted to help identify areas suitable for reengineering while benchmarking unit costs to world class organizations.

Worthy of mention, is the Government of Panama's commitment to Canal maintenance as expressed in a recent Constitutional Amendment and the enactment of the organic law establishing the Panama Canal Authority. Chapter VI of this legislation specifically highlights the importance of the maintenance effort and adopts the Commission's programs required for the safe, uninterrupted and efficient operation of the Canal. Moreover, the law provides financial autonomy and the right to manage its resources.

You have been exposed to how we do maintenance and other activities contributing to the maintenance effort. Recognizing the Canal is part of this globally competitive environment, we have identified future actions to help us increase reliability and further reduce our maintenance costs. Among these are: (a) development of cost effective maintenance, (b) migration to an enterprise computerized maintenance management system, and (c) improvement to maintenance methodologies.

The Panama Canal Commission is constantly seeking areas to enhance its competitive advantage. As organizations mature, their ability to increase revenues is often reduced. It is then that maintenance becomes one of the last frontiers for contributing to the financial standing of the company.

We can clearly say that all maintenance decisions are cost benefit decisions. In other words, we are faced with the question "What are we going to get in return from spending this money on maintenance?" The decision for maintenance would be made based not on what is best for the operations group, nor on what is best for the maintenance group, but on what is the lowest combined cost. We must make this type of decisions to optimize our resources. Surely this maintenance effort will result in reduced depreciation of assets, increased maintenance productivity, and ultimately in higher quality service.

Industry averages indicate 30 percent of all maintenance expenditures are underutilized. Should these trends be applicable to the Canal, they would translate into over \$40 million which might be better allocated.

Various independent Computerized Maintenance Management Systems are installed throughout the Commission. Migration to an enterprise system will provide a vehicle for enforcing maintenance disciplines; faster, more accurate record keeping capabilities; "snapshot" analysis of maintenance information; and a method for integrating maintenance with other information systems.

The Panama Canal is aware of the need to adopt improved maintenance methodologies, such as predictive maintenance and condition-based monitoring. These techniques will enable us to anticipate impending failures before they occur, and provide maintenance only as needed. Although most of our maintenance units currently focus on the more traditional corrective and preventive maintenance methodologies, independent efforts are now underway to implement previously mentioned techniques.

In conclusion, maintenance at the Canal remains a complex task requiring extraordinary efforts to guarantee continuous and reliable service to our customers. To this effect, extensive finan-

cial, material and human resources are devoted to this activity and executed through investments in new technologies, maintenance audits, and personnel training.

As we move into the 21st century and take the necessary steps for a seamless transition, we recognize the need for sustained promotion of clear accountability, timely decisions, strategic flexibility, and a willingness to take risks, while at the same time, remaining focused on our core business. This is why we are committed to promote a culture of continuous improvement where increasing reliability and reducing costs will provide best-value service to our customers and so continue as a world class maintenance organization.

• *Alexander Gianareas is Chief of the Management and Productivity Studies Division  
Panama Canal Commission*





**THE CANAL IN THE 21st CENTURY: Summary of the Question-and-Answer Period:**  
**World-Class Maintenance – Key Factor in the Success of the Panama Canal**

**Speaker:**

**Alexander Gianareas**

*Chief, Management and Productivity Studies Division, Office of Executive Planning, PCC*

**Panelists:**

**Christer Idhammar**

*President and CEO, IDCON, Inc*

**John Gribar**

*Chief, Design Branch US Army Corps of Engineers*

**Enrique Sanchez**

*Acting Deputy, Engineering and Construction Director, PCC*

**Roberto Roy**

*Chairman, Blue Ribbon Engineering Committee*

**Moderator:**

**H.E. Olga Bosquez Poveda**

Questions raised during this session focused on what benefits Canal clients would receive from a world-class maintenance program, the effect a possible requirement for increased Canal maintenance would have on Canal customers, the maintenance program under Panamanian administration, and what modernization programs are planned for the Canal, including the time frame to complete these projects. The panelists responded stating that the primary benefit accruing to Canal users from a world-class maintenance program would be increasing confidence in Panama Canal transit service over the long term. This confidence would be reflected in increased efficiency and more secure transit of the waterway, fewer delays, less damage to vessels and reduced transit times resulting in lower Canal costs which, subsequently, will be transferred to shipowners.

Regarding the question of possible increased maintenance and its effect on users, the panel provided an overview of the genesis and origin of the U.S. Army Corps of Engineers maintenance study and some of its results. The study was initiated by the Board of Directors to determine the current condition of the waterway prior to its transfer at the end of the century. The decision to select the Corps of Engineers was based on its extensive experience with canals, locks dams and waterways in the United States as well as a long involvement with the Panama Canal beginning with the original construction. The Corps of Engineers study was intense covering every aspect of Canal transit and maintenance operations including the locks, operating machinery, locomotives, launches, spillways, dredging and many other areas. The study was well received and provides the basis for the extensive maintenance programs currently underway. When this planned maintenance work is completed, Canal customers should expect to receive safe, efficient transit service with significantly reduced downtime and a minimum of disruptions. As a result of the study, the Gaillard Cut Widening program was accelerated twelve years ahead of the original scheduled completion date to the year 2002.

The key to high quality Canal maintenance under Panamanian administration is the effective recruitment and training of human resources. The Canal has a vigorous recruitment process to se-



lect the best candidates for skilled craft and maintenance workers on the waterway. Following this extensive recruitment process, employees spend several years of training designed to develop a high level of competency and learning to resolve problems on the waterway. Commission officials and employee representatives also meet on a periodic basis to discuss issues of mutual interest. The Panama Canal employee recruitment and training programs have always been the key to the Canal's success and they will continue to be in the future.

The nearly one billion dollars being invested in Canal expansion, modernization and improvement programs will ensure the uninterrupted and efficient transit of vessels through the waterway far into the future. The major projects included in these programs are the Gaillard Cut Widening, upgrading the vessel traffic management system, purchase of twelve new locomotives, acquisition of seven tugboats, widening of the Atlantic entrance to the Canal, complete rehabilitation of 82 locomotives, repair of tunnels, rehabilitation of lock gates, purchase of ten replacement locomotives, rehabilitation of tow track and rail, replacement of one portable lock gate, dredging Cristobal anchorage, rehabilitation of two SIP emergency gates, modernization of control house equipment, modernization of various buildings and other miscellaneous dredging.

With over 800,000 vessels transiting the Canal since it first opened in 1914 and some 13,000 vessels currently passing through the waterway each year, the Canal is nearing its full operating capacity. The Commission is working hard to modernize and improve the Canal to ensure continued high quality transit service for its customers.



This subject is very dear to the Panama Canal and of vital importance to you, the Canal's customer. We are proud of our safety record and fortunate to have the required tools, procedures, equipment and employees necessary to maintain a sound safety program.

The Panama Canal handles a wide variety of ships and cargoes with destinations worldwide. To ensure the safe passage and handling of the waterway's traffic, the Panama Canal Commission continues to actively carry out improvements to the Canal and revisions to the Commission's operating procedures.

In the area of navigational safety, we have been successful in reducing the number of marine accident investigations and the occurrence of serious accidents to transiting vessels.

We are seeing a marked decrease in the number of Board of Local Inspectors accident investigations recorded over the past fifteen years. At the same time, there has been a corresponding increase in the number and size of vessels transiting the Canal.

Part of our navigational success can be attributed to the marine safety program which consists of: vessel transit classification and inspection prior to transit; monitoring and control of vessels while in-transit; physical improvements made to Canal structures and the navigational channel itself; establishment and strict application of published regulations and procedures, and the training and emergency preparedness of the many individuals involved in the transit of vessels.

With the growing increase in the size and number of vessels transiting the Canal, including those carrying dangerous or hazardous cargo and transits often taking place during inclement weather, we are keenly aware that the potential for a serious marine accident exists.

The Canal's marine safety regulations are published in Title 35 of the United States Code of Federal Regulations. The code spells out operational and safety requirements that must be met in order for a vessel to transit the Canal. Title 35 is augmented by local operating memoranda and directives.

Most of our transit regulations or procedures are consistent with those of the International Mari-

time Organization (IMO) and that of the United States Coast Guard (USCG).

Through the strict application of these regulatory instruments, Canal officials are able to establish the specific transit requirements for a particular vessel in advance of its arrival at the Canal.

Up to now, I have discussed our overall Marine Safety program and our published regulations. Now, I would like to give you some information about our daily operating practices.

Unlike other waterways, Panama Canal pilots assume operational control over a vessel's movement while in Canal waters. This includes movement into and out of the terminal ports of Balboa and Cristobal.

The Commission has an extensive pilot training program, which takes more than eight years to become fully qualified to pilot all vessels transiting the Canal.

Hands-on training is augmented by a full mission bridge simulator used for progressive, refresher and remedial training.

Prior to the arrival of a vessel on its initial transit, vessel plans are reviewed to determine if they satisfy both our safety and transit requirements.

Vessels are boarded upon arrival to ensure compliance with transit and safety procedures and regulations. Our boarding program is being expanded to provide licensed Canal personnel to perform more detailed inspections.

Canal Port Captains provide 24-hour professional maritime supervision over all transit related activities and emergency response.

An active duty United States Coast Guard Captain is assigned to the Commission as its maritime safety advisor. Here you see two of our panelists Dr. Freddy Chen, a marine safety specialist, working with Coast Guard Captain, Bill Hutmacher.

Coast Guard advisors have helped develop and monitor many of our marine safety programs such as: safe boarding; hazardous materials; fire fighting; and handling explosives.

All vessel movements are coordinated through our Traffic Control Center. Center personnel are in constant communication with transiting vessels and coordinate transit resources.

Recognizing the reduced manning levels aboard today's commercial vessels, the Commis-



sion places linehandlers aboard all transiting vessels to handle lines and locomotive cables while in the locks chambers.

We maintain a modern fleet of tugboats to assist vessels into and out of the locks, through Gaillard Cut and, when necessary, to respond to emergencies.

Locks modernization efforts include improved wall fendering, towing locomotives, high mast lighting, and automatic fire fighting monitors.

Now, let's turn our attention to dangerous cargoes.

We follow the IMO definition for dangerous cargoes. By applying that definition, we know that some thirty percent of all Canal traffic carries dangerous cargo, either in bulk or package mode.

Among the principal dangerous cargoes carried in bulk are petroleum products, ammonia, coal and sulfur while industrial solvents and pesticides are some of the more common materials transported by container.

The Commission takes precautionary measures for vessels carrying dangerous cargo which vary depending on the ship, the IMO classification of its cargo, and whether the cargo is in bulk or packaged mode. Vessels are required to provide the type and amount of dangerous cargo aboard 48 hours in advance of their arrival at the Canal.

Based on that information, a precautionary designator is assigned to that vessel. The designator sets forth precautionary measures for that vessel while in Canal waters which includes the qualification level for pilot assignment; docking, clear-cut or approach channel restrictions; no hot work; no open flames; no smoking at the locks; and whether a fire truck will stand by at the locks for arriving vessels.

Although we do have a very good marine safety record, we are prepared for emergencies.

Our contingency plans outline procedures for responding to marine incidents. These procedures are defined in our vessel emergency reaction plan; locks emergency reaction plan and the Commission's oil and hazardous materials spills contingency plan.

To maintain proficiency, operations personnel and local authorities are continuously involved in

emergency response drills. The results of these drills are evaluated to determine areas that need improvement.

In closing, I hope you will take with you from this presentation that the Panama Canal Commission has a thorough marine safety program with a proven record of success. We strive to improve our efforts —not only for the protection of Canal infrastructures, our work force and neighboring communities, but, also, to serve you as important customers of our business.

• *Rene Van Hoorde is Director of the Marine Bureau  
Panama Canal Commission*



## **I. Introduction**

It is well known that the efficient operation of the Panama Canal depends on the continuous maintenance of equipment and its infrastructure, the implementation of improvement projects, and the coordination of a highly trained and motivated work force. Another key factor, not commonly understood, that ensures sustainability of the waterway is the quality of the environment that surrounds it. In fact, the Panama Canal is nourished solely by fresh water that originates through complex natural processes within the Canal Watershed boundaries.

The purpose of my presentation is to briefly describe to you the Panama Canal Commission's activities in the Canal Watershed and summarize principal aspects of the Commission's Environmental Protection Program. I will review also the expanded role in water management and coordination of natural resources conservation in the Canal Watershed, in accordance with Panama's Constitution and the recently sanctioned organic law for the Panama Canal Authority.

## **II. Watershed Monitoring Activities**

With respect to the Commission's activities in the Canal Watershed, first, let me describe this region as the geographical area that drains into the Canal's hydrological system, that is: Gatun and Madden lakes and auxiliary reservoirs. It is important to note that the Watershed boundaries are defined by an imaginary line that follows the highest points of the mountains that surround the Canal's hydrological system.

The Canal Watershed approximates 330,000 hectares, and can be divided into two distinct regions: the Upper Basin, east of the navigational channel -- characterized by mountainous terrain, steep slopes and dense forests -- occupies about one third of the Watershed but generates almost half of the Canal's water supply; and a Lower Basin, west of the Canal, typified by rolling hills with gentle slopes which was deforested many decades ago to support cattle ranching and agriculture.

Panama's Institute of Renewable Natural Resources (INRENARE) has nationwide responsibility for Watershed management, including the Canal Watershed. PCC's role, in accordance with the

Panama Canal Treaty, is the management of water resources for municipal use, lockages, hydroelectric generation and flood prevention. To comply with these functions, PCC operates 30 hydrometeorological stations strategically located throughout the Watershed to measure hydrological and meteorological parameters such as rainfall, runoff, suspended solids and lake levels.

There are two main aspects related to water availability for the Canal: first, the amount of rainfall; second, the potential losses of storage capacity from sedimentation. Investigations by Commission hydrologists and meteorologists using extensive rainfall and runoff records show that there are no statistically significant dry or wet trends that could affect the Canal over the long term. Moreover, the major rain-producing mechanisms in this region are independent of the types of ground cover. Instead, rainfall is largely associated with atmospheric disturbances (such as the intertropical convergence zone) that originate in the ocean.

During an average year, the usable volume of water is 47 inches of rainfall. Approximately 58 percent of that total is used for lockages, 36 percent for hydropower generation and 6 percent for municipal consumption.

Deforestation destroys the rich biodiversity of our tropical forests and leaves the exposed soil more susceptible to erosion and sedimentation. During previous decades, deforestation in the Watershed reached peak levels of thousands of hectares annually as a result of slash and burn agriculture from illegal farming. However, during the past 7 years, deforestation rates in the Watershed have decreased steadily to less than 100 hectares per year.

The Commission is developing a thorough remote sensing monitoring program using state-of-art technology, which includes high-resolution satellite imagery and aerial photography to provide timely, quantitative information about ecosystem dynamics. The program will allow us to monitor land use throughout the Canal Watershed and to identify changes in vegetation cover before significant areas become deforested.

With respect to Madden lake's storage capacity, PCC surveys project that after 65 years of impoundment slightly less than 5 percent of active



storage will be silted by the turn of the century. Thus, we do not anticipate that sedimentation will adversely impact Canal operations if conservation measures in the critical Upper Basin continue.

### III. Programs Related to Protection of the Environment

Because the quality of the environment plays a key role in the Canal's efficiency, PCC has incorporated environmental guidelines throughout its operations. Therefore, I would like to describe some of the most relevant components of the Canal Agency Environmental Program.

Environmental Impact Studies. PCC regularly assesses projects that have the potential to affect the human environment. For example, during the early planning stages of the Gaillard Cut Widening program, a multi-disciplinary team of experts conducted thorough environmental studies. This PCC team continues to monitor the progress of the Cut Widening Program to ensure its consistency with the study recommendations.

Waste Minimization and Pollution Prevention. Consistent with efforts to improve efficiency, the Panama Canal Commission is implementing a pollution prevention program in order to:

- Reduce quantity and diversity of hazardous substances
- Increase use of environmentally preferable products
- Track potential pollutants from purchase to disposal
- Reuse and recycle materials whenever possible and
- Protect natural resources through conservation and improved efficiency

Marine Safety. Another program related to environmental protection is our Marine Safety program. As Mr. Rene Van Hoorde indicated in the previous presentation -- "Efficiency through Navigational Safety," the Commission implements specific procedures to guarantee safe passage through the Canal, thus reducing risks of oil and hazardous substances spilling in Canal waters.

Response to Oil and Hazardous Materials Spills. The Commission's Oil and Hazardous Materials Contingency Plan and the Vessel Emergency

Reaction Plan establish the pattern of response for spills in the Panama Canal. The document follows guidelines of the National Contingency Plan of the United States and includes the provision of an incident commander for each specific event. In order to supplement existing local resources, we are formalizing a Memorandum of Understanding with the U.S. National Response Team that will allow access to technical assistance, equipment and personnel from member agencies, which include the U.S. Environmental Protection Agency, Department of Defense, U.S. Coast Guard and the Department of Energy.

I must note that the National Response Team is the body responsible for coordinating preparedness planning and response for oil spills and releases of hazardous materials in the United States.

Oil Pollution Management. PCC maintains trained personnel and equipment around-the-clock for rapid oil spill containment and clean-up, although our records show a very low incident rate in canal waters and its immediate vicinity.

Hazardous Materials Spill Control. Similarly, fire and emergency services division personnel have received extensive training to respond to hazardous materials spills in the safest and most expedient manner, using the appropriate protective clothing and equipment.

Analysis of potable water quality. The Commission's water quality laboratory uses advanced technology to analyze drinking water generated by Commission's plants, before and after treatment. Panama's potable water continues to be of excellent quality and purity.

Sanitation and Grounds Maintenance. During Canal construction, strict sanitary controls of the Canal area and its surroundings assured the successful completion of works by the United States. The Canal agency has maintained the highest sanitary standards to provide a healthy environment. Our technical personnel conducts daily inspections to detect and eliminate breeding sites of vectors (such as mosquitoes that can transmit malaria, dengue, and other diseases). Use of pesticides is kept to a minimum, but whenever it is necessary, the Commission applies only U.S. Environmental Protection Agency certified products.



Reforestation. PCC established several pilot reforestation plots in critical areas to assist the natural revegetation process. With the technical advice of the Smithsonian Tropical Research Institute, the Canal agency plans to use native species to reforest areas that have been affected by excavation along the Gaillard cut.

#### **IV. Increased participation in Watershed monitoring and coordination by the Panama Canal Authority**

Let me discuss now some of the additional environmental functions that Panama's constitution and law have assigned to the Panama Canal Authority.

Panama started the legislative process to assume the administration of the Canal in the early 90's, and the environmental issue has been and remains a top priority. The title on the Canal that was added to the political Constitution of the Republic of Panama states that "the Panama Canal Authority, in coordination with other government agencies ... shall be responsible for the administration, maintenance, use and conservation of the water resources of the Panama Canal Watershed, which include the waters of the lakes and their tributary streams." It is important to note that this is the only instance in which our constitution assigns the responsibility of being the custodian of a natural resource to a specific agency.

Environment was also the central topic during the drafting phase of the Panama Canal Authority organic law. All sectors of society participated in numerous meetings, including representatives from political parties, worker unions, religious groups, government institutions, minorities and the private sector. The organic law stipulates that to safeguard the water resources, the Authority shall coordinate with government and non-governmental organizations the conservation and the use of the Watershed's natural resources. It shall also approve the strategies, policies, programs and public and private projects that may affect it.

The organic law also establishes that "to coordinate the activities of government and non-government organizations, the board of directors of the Authority shall appoint and regulate an inter-institutional commission on the Canal Watershed

to coordinate the activities of the government and non-government organizations."

The organic law lists regulations for environmental protection which must be approved by the Authority, such as those related to the conservation of water resources, environmental protection, sanitation and spill prevention and control. At the present time, the Panama Canal Commission and Panama's Transition Commission for the transfer of the Canal are working jointly to develop such regulations.

In other words, the Panama Canal Authority will maintain not only the existing programs, but will expand and improve the scope of the environmental management function. Among the new assignments perhaps the most important one is the coordination of public and private efforts in the Canal Watershed to ensure sustainable development of the region.

Distinguished participants, here in Panama we are working arduously to ensure that the operation of the Panama Canal after the year 2000 continues efficient, safe, and environmentally sound. We are convinced that your contributions during this Universal Congress will produce a synergistic effect on the sustainability of the Panama Canal well into the next century.

*• Juan H. Diaz C. is Environmental/Energy Control Officer, Panama Canal Commission*



## 1. Introduction

The possible enlargement of an infrastructure which has strategic implications for world trade, such as the Panama Canal, requires a detailed analysis of the different elements which condition the evolution of the supply and demand relationships of international transport in the very long term. In the present study, a methodological, integrated approach has been used, through which the growth forecasts of different economies and those of the trade of different types of commodities are related, taking into account the expected future evolution of the maritime fleet, with an aim to determining the impact of expected changes on the traffic through the Canal.

In the last few years, international trade has experienced a growth significantly greater than total production, confirming a sustained process towards economic globalization, and it is to be hoped that this rapid growth in world trade will be one of the principal characteristics of the coming decades, particularly over the next 20 years, in which the combined effects of the liberalization of trade and of globalization will lead to an acceleration in the process of economic integration. In the next few years, once a profound change has taken place in production systems, it is probable that the rate of growth of world trade will tend progressively towards its equilibrium level (close to world GNP growth).

The recent changes in international trade relations have had important repercussions for the Panama Canal, and in fact, the forecasts of the Study carried out in 1993 by the Tripartite Commission (formed by the governments of Panama, USA and Japan, and created in order to evaluate the different alternative solutions for the enlargement of the Canal) have been found to be greatly exceeded by the growth of the last few years. In fact, the number of transits observed in the 1994-96 period show an annual increase of 3.6% (the forecasts had been 1.8%) in the volume of transits, so that the traffic in 1996 has practically reached the levels projected for 2003 in the previous study.

It may well be true that 3 years is not enough time to carry out a definitive judgement on the traffic predictions of the Tripartite Commission Study, but it is possible to point out that this study did

not evaluate sufficiently the consequences of the spectacular growth of China nor the effects of world economic globalization. In this context, the present study should be understood to be a contribution by the European Commission towards the future development of the Canal, with an aim to giving an independent and up-to-date vision of traffic projections which will ease the process of making decisions concerning its enlargement.

## 2. Objectives

The study has the following principal objectives:

1. To carry out a thorough revision and update of the results of the Study carried out in 1993 by the Tripartite Commission, the aim being to determine the reasons that have caused the differences between the projected demand and the actual traffic flows in the last three years.
2. To evaluate the projected trends in the development and evolution of the world fleet and determine their possible effects on the projected demand in the Study of 1993 and on the updated results.
3. To quantify the volume of transits both loaded and ballast only that will use the Panama Canal in the years 2020 and 2060 and to identify the critical year in which the enlargement works will have to begin in order to meet the projected demand.
4. To analyze the competitive position of the Panama Canal with relation to other alternative routes, particularly the diversion of traffic via the North American "land bridge", and to quantify its effects on the total number of expected transits for the different years in the projection.

## 3. Methodological approach: updating the effects of globalization

In this context, taking as a starting point a critical revision of the methodological process followed in the 1993 study, the present study has updated the growth in demand for cargo, through an exhaustive analysis of the possibilities for growth in production and in exports of the most dynamic countries in the area of influence of the Canal





(Asia-Pacific region and Latin America) and of the expected evolution of the world maritime fleet in future years.

The specific future years considered are 2020 and 2060. The choice of these years was determined by the need to produce results which could be compared with those of the previous study, both for the prospective non-enlargement Status Quo scenario as well as for the scenario of the construction of the option preferred by the consulting group after due assessment of the alternatives considered in the 1993 Study, which is a Third Set of Locks with capacity for ships of up to 150,000 dwt (the adoption of this alternative supposes the enlargement of the Culebra Cut stretch, which is currently underway).

The evaluation of both scenarios must be considered equally as an initial conditioning factor, derived from the results obtained in the previous study, given that in that study it was seen that no significant differences in manipulation capacity existed between 150,000 and 200,000 dwt. Taking this consideration as a starting-point, the present study concentrates on determining the critical year when the enlargement should take place, and on establishing the future growth of the traffic once there is operational capacity for ships of up to 150,000 dwt.

Other initial conditioning factors which have had to be taken into account are the physical and operational capacity restrictions of the Canal, which in the previous study were estimated at around 17,000 annual transits, with an average waiting time of 10 hours, although a greater number of transits could be served if a significant increase in the average waiting time were accepted or if there were improvements in order to ease the operation of the Canal without time or weather restrictions.

Additionally, it has been taken into account that the traffic through the Canal is concentrated in a few, very important, trade links. In fact, the 10 most important trade links represent 70% of total traffic, while the sum of the first 20 is greater than 80%. This factor, together with the fact that the economies most important for the Canal are those which have undergone the greatest growth and commercial dynamism in the last few years, has

led to the updating of the traffic projections being carried out starting from an exhaustive analysis of the future evolution of the 18 most dynamic world economies, and from the recent effects of globalization on the Canal.

#### **4. Conclusions: The future role of Panama Canal within the global economy**

Economic globalization is causing structural changes in the flows through the Canal, given that very important variations are being produced in a short period of time. In addition, usually stable characteristics are unstable, such as the proportion of liquid and dry bulk commodities, or changes in the role played by certain regions, such as those seen in the growth of traffic between the two coasts of South America and between these coasts and the North American ones. At the same time, one can observe the reduction in other traffic. For example Asia-US East Coast trade which is the principal trade link of the Canal, with a share traditionally around 50% and has fallen to 46%, as has trade between Europe and the US West Coast.

In this context, one can clearly see how the Panama Canal is becoming increasingly important for the countries in South America, not only with respect to refrigerated goods, but also for intra-South American trade. It is to be hoped that the progressive move towards the integration of sub-regional trade blocs will favor the consolidation of this trend - the free trade zone of the Mercosur Agreement could be rapidly extended to other countries, while the probable enlargement of the Nafta zone will contribute to give even more importance to interregional trade from 2005 onwards - and consequently, the growth of traffic through the Canal.

Taking these conditioning factors as a starting point, and considering the probable evolution of the key commodities in international markets, a New World Economic Scenario has been drawn up. In it, significant growth in the potentially most important regions for the Panama is contemplated, in relation to economies generally.

The New Scenario predicts growth rates of world trade of 5.5% for the 1990-2020, given that it is expected that both the growth in production and in trade will drop slightly from 2010 onwards, when



many Asian countries will be finishing their period of sharp growth. Correspondingly, it is estimated that the potential trade through the Canal will grow by 2.8% in the first period and 2.0% in the second.

It must be kept in mind that the composition in terms of commodities and traffic routes is not as dynamic as that of the rest of world trade, since the former is concentrated in long distance trade links, composed mainly of basic products, principally raw materials and fuels carried in bulk. In this sense, the hypothesis of a lower growth rate for potential traffic is supported by the fact that the evolution of this growth is tied up very closely with raw materials and fuel; the production of these commodities usually has a growth rate lower than that of GNP and will also be subject to severe production restrictions in the future.

The results of the updating show growth at around 130% for the potential traffic through the Canal in the 1990-2020 period. This could even reach 400% in the 1990-2060 period. This growth supposes capturing new traffic which will be over the established capacity, six years before the time estimated in the 1993 Study, and which, in fact, reflects the new nature of world trade.

As for the transport fleet, it is predicted that by 2020 it will have grown 14% in terms of tonnage, up to 776 million dwt, while it is predicted that the number of vessels will fall by 10% to 15,100 units. Similarly for 2060, the fleet will have grown 51% to 1,027 million dwt, while the number of vessels will grow by 15%, to 19,000 units.

It is to be predicted that bulk liquid-carrying ships will be the most important category of vessel at least until 2020. In 2060, nevertheless, it is predicted that bulk dry goods-carrying vessels will overtake them in number; the latter will then account for 43% of the total tonnage of the ocean-bound fleet. Container vessels will be the category of vessel which will undergo greatest growth, doubling its fleet in 2060. The rest of the non-bulk commodity-carrying vessels will gradually lose their importance. The substitution of general cargo vessels, Ro-Ro and refrigerated vessels by pure or combined container vessels is of particular relevance.

From the analysis of the future fleet and the knowledge of cargo demand, transit throughput of

the Canal can be estimated, both for the scenario of maintenance of current capacity or Status Quo, and for the alternative enlargement scenario through a new third set of locks.

The results of this estimation can be observed in Figure 1. In particular, the following points should be noted:

A. Is the value of transits for 1990, used as a base value. (11,162 ships);

D. This is the point that could be reached in 2020 if there are no constraints on capacity (around 19,000 ships);

B. Demand curve begins to descend at this point, around the year 2011 or 2012, because of the high transit density or saturation of the Canal.

C. This would be the point where the Canal reaches saturation point, around the year 2014 or 2015, following the Status Quo situation and with the capacity of the number of transits projected in the Study of 1993.

G. If the Canal is not enlarged the number of transits will rise to point G, some 17,500 transits, or perhaps even more given that this projection is based over a period of time of nearly 70 years during which significant advances in technology could be made.

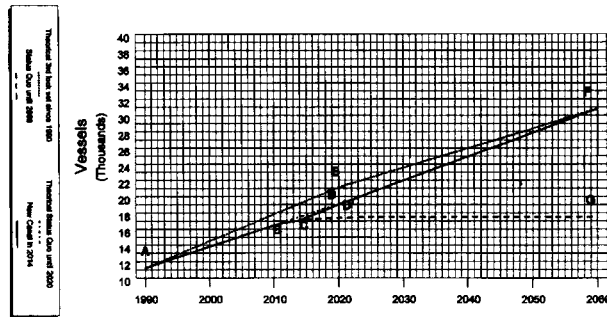
E. This is the point that could have been reached, in the year 2020, if the third set of locks had been operational from 1990, that is to say, that the traffic would have grown at the rate of the economy. This is an asymptotic value.

D. This is the real point that would be reached in the year 2020 if the Canal enlargement was completed in 2014-2015, with a growth in traffic parallel to that projected for the case without restrictions from 1990.

F. This is the point of transits reached in 2060, between 30,000 and 31,000 vessels, for the Canal enlargement scenario through a third set of locks. It can be seen that from 2020 the transit of vessels would have the tendency to recover the number it would have reached from point E. At point D there is an inflection of the curve and the growth tendency is slower, but a little greater than it would have grown from 2020 under the no restrictions scenario (point E).



**Figure 1. Forecast of vessel transits through the Panama Canal**

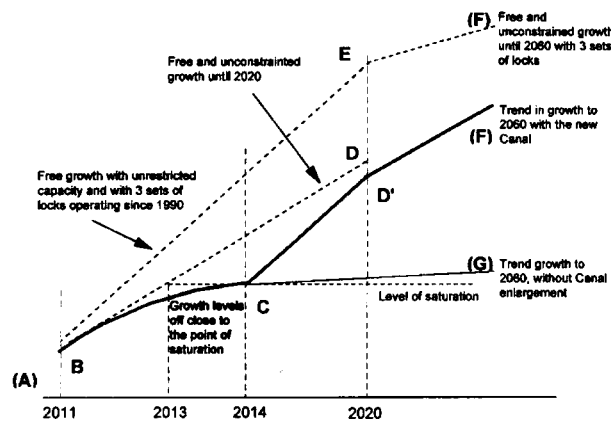


In this context, one of the main conclusions that can be drawn from the analysis of the current and future fleet, is that the existing Canal is becoming progressively obsolete in terms of the world fleet whereas with the projected enlargement of the Panama Canal for ships up to 150,000 dwt, should be sufficient to cater for the forecast transits. In addition it is also likely to satisfy to a large extent the requirements of the ship types that can be expected to be built in the future. Presently there appears to be growing dissatisfaction within the world shipping community with the level of service being provided by the Canal and despite the widening of the Canal, due to the continued rapid expansion of trade, these levels of dissatisfaction are likely to increase further as the Canal moves closer to its saturation point.

It is clear that the current size of locks at the Canal are acting as a constraint on trade and are distorting the natural profile of the world fleet. The present inability of the Canal to handle larger vessels will encourage the further development of alternative transport solutions such as land bridges and the looping of container services as ship operators strive to minimize their costs and maximize their service levels. The continued adoption of "just-in-time" and other similar techniques will increase the pressure on ship operators to abandon the use of the Canal in situations where service levels are further reduced as the existing Canal approaches its maximum capacity, especially in relation to container traffic. Another important con-

clusion for the Canal's future is the definition of the critical year in which the future enlargement should become operational. From the previous graph can be extracted the Figure 2, in which is detailed the expected demand behavior for the saturation years.

**Figure 2. Demand behavior near the point of saturation**



From Figure 2 it can be seen that the demand curve, has been growing since 1990. Due to the impact of potential trade growth, demand begins to level off around 2011-2012 (point B), as the Canal moves ever closer to its point of saturation (point C). The high number of transits reduce, in fact, the number of available slots. As a result the demand should be reduced. If the quoted saturation point did not exist, because the capacity in terms of the number of transits was greater, it would continue growing until 2020. However, demand would not reach the maximum value in 2013. In practice it would decelerate and probably reach saturation point between 2014 and 2015 (point C). From this point two situations could arise:

1. The Canal is not enlarged and the Status Quo is maintained. The number of transits tends towards point G, with a gentle growth in the maximum number of transits, because the waiting time at the entrance of the Canal increases, or due to better technologies and new management methods that may be introduced during the period leading up to 2060. In this way the capacity may be increased, but it

would be difficult to surpass that maximum value if no other action is undertaken in relation to the enlargement of Corte Culebra.

2. The Canal is enlarged with a third set of locks. The volume of demand begins to grow at the projected rate from 2014, so that in 2020 it almost reaches the level it would have attained had there been no restrictions on the number of transits (reaching D' instead of D). From 2020 its growth is not as strong due to the predicted deceleration in the economy between 2020 and 2060, but it is greater than the growth it would have had after point E. The point E represents the value of the demand it would have attained in 2020 if the third set of locks had been operational from 1990. This is not a real value but a theoretical value. This point, along with point F, represent the asymptotic growth in demand and these are values that will not be surpassed.

The direct consequence of these estimates is that the planned enlargement of the Canal should be in operation by 2014, and NOT 2020 as suggested by the 1993 Study.

**Figure 3. Assessment of the impact on demand if the enlargement of the Canal is delayed**

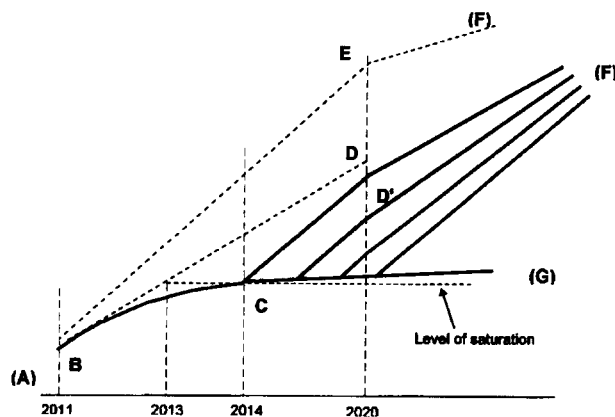


Figure 3 evaluates the consequences of not building a third set of locks in 2014. Under this scenario, the curve of transits begins to grow at the time the enlargement is completed.

It is important also to indicate that in the last few years there has been a trend, in most sections

of shipping, to build post-Panamax vessels. This is true especially when the specific routes involved do not normally include the current or potential use of the Canal. The decision is principally an economic one, generated by the wish to maximize economies of scale on a particular set of trade routes. In some cases, the size parameters in excess of the maximum admitted by the Canal will make it impossible for the operator to use the Canal, should future economic changes require it. Again, any enlargement in the Canal's capacity would allow many of the post-Panamax vessels to use the canal if they should wish to. The round-the-world container vessel operators constitute an important element in the movement of commodities on a world scale, and are currently moving towards using sizes larger than Panamax. Obviously, any enlargement of the potential parameters of the Canal would enormously increase its cargo capacity, and thus the economics of its operation.

Therefore, the increasing importance of round-the-world routes in the majority of liner traffic constitutes an important opportunity for the Canal to capture future traffic from its land-bound competitors, just as long as the decision concerning its enlargement is taken correctly. In fact, the majority of operators consulted would probably cease using a land transport system, if the right opportunities were offered to them by the Canal.

Finally the results obtained from the analysis and forecasts suggest that the time for a decision on the enlargement of the Canal should be made as soon as possible if demand is to be satisfied in the years ahead.

Naturally the handover of the Canal to Panama in 1999 has created a degree of uncertainty in the international community regarding the Canal's future and as any proposed enlargement of the Canal may well require some form of international support, it can be concluded that it is important that Panama is careful to ensure that the confidence of the international community in the Canal is maintained after 1999.



*•Peter Wild is Director of GP Wild (International) Ltd.,  
a member of the Anglo-Spanish consultants group  
which prepared the European Commission  
funded study*

This morning I will provide you with a historic overview of traffic through the Panama Canal. I will then summarize the results of the work done by the consultant firm ICF Kaiser International on the medium and long-range traffic forecast for the Panama Canal, and the conclusions derived from this forecast in relation to the point in time when the Canal's operating capacity will have peaked. Before closing, I will briefly summarize the conclusions of a scenario planning exercise we held with the consultant firm The Futures Group which complements our strategic planning.

First, let me mention that the Canal regularly conducts traffic studies to determine the magnitude and timing of necessary improvements to the waterway. This most recent study is part of that continuing effort to prepare for the changing needs of the maritime industry and international trade.

Bear in mind that the usefulness of long-term forecasts is relatively short, as the conditions and factors that affect them are constantly changing. Therefore, long-term forecasts should be used mainly as a tool that provides a quantitative preview of the future, which helps reduce the risk and uncertainty of our decision-making. We know from a strategic standpoint that we must constantly monitor and study Canal traffic to ensure that our planning remains flexible and our actions preserve the value and importance of the Canal for Panama and the international maritime industry. Today I will provide you with a forecast that is no more than a snapshot of the future as we see it at this time.

The first part of my presentation will describe the major Canal traffic elements and their historic performance.

**The major Canal traffic elements are:**

- **Principal commodities**, which have a very direct effect on the composition of the next element which is:
  - **Principal vessel types** transiting the Canal.
  - The source and destination of the cargo allows us to classify and define the next factor, that is, **major trade routes**.
  - Yet more important than cargo, for purposes of performing operational analysis, is the number

of transits and the size of vessels transiting the Canal.

There are many subgroups within those that I have mentioned which we continuously analyze, but I will not discuss them here in detail because of time.

**Principal commodities**

This chart shows the performance of principal commodities that transited the Canal in Fiscal Year 96. The axis on the left shows thousands of long tons of cargo. Bear in mind that a long ton is a measurement of weight equivalent to 2,240 lbs. As you can see, the majority of cargo which moved through the Canal in FY96 was grain followed by petroleum and products, containerized cargo, nitrates and phosphates, and coal and coke. These five principal commodities represent nearly 65 percent of the total cargo that moved through the canal in FY96. Additionally, all but containerized cargo move in bulk carriers. You will be able to see this relationship more clearly in a chart that I will be showing you shortly.

**Commodities last 15 years (grain and petroleum)**

First, let's look at the historical performance of these five commodities for the past 15 years.

To begin with, note that before 1982, petroleum was the principal commodity transiting the Canal in terms of tonnage. The vast majority of this petroleum was Alaskan North Slope (ANS) oil destined for Gulf coast refineries. The subsequent drop in petroleum is directly attributable to the diversion of ANS oil to the transisthmian oil pipeline which opened in 1982. For the past decade, grain has remained the leading commodity due to the strong demand from Asia.

**Remaining commodities**

The other key commodities have remained relatively stable except for containerized cargo, which has shown a steady increase. Later on, I will be discussing the expected impact of containerized cargo in the long-term forecast.



### **Key elements of canal traffic**

The next element of canal traffic I am going to show you is the distribution of cargo tonnage by vessel type.

#### **Cargo tonnage by vessel type**

This chart shows cargo tonnage by vessel type for FY96. Here you can see more dramatically the difference between cargo carried by dry bulk vessels with respect to the other types. These six categories transported more than 93 percent of the cargo that moved through the canal in FY96 of which dry bulk vessels alone represented over 53 percent of total canal cargo.

#### **Cargo tonnage by vessel type for 15 years**

The following chart shows the same data for the last fifteen years. You can see once again, the steady growth in cargo moved in container vessels.

#### **Principal routes**

The next element of canal traffic I am going to cover is the distribution of cargo by principal trade route.

This chart shows the principal trade routes through the Panama Canal in terms of cargo tonnage. As you can see, the most important route continues to be between the East Coast of the United States and Asia. And it is interesting to see a steady, but modest growth of the routes to and from South America.

#### **World map**

The following sequence of charts give you a quick glance at the flow of cargo over the principal trade routes during FY96.

A little more than 14 million long tons moved from Asia to the East Coast of the United States, comprised primarily of manufactures of iron and steel, and just over 67 million long tons, primarily grains, and phosphates moved from the East Coast of the United States to Asia, totaling more than 81 million or 41 percent of all Canal cargo.

Close to 8 million long tons moved from the East Coast of the United States to the West Coast of South America, a good part of which consist of grains. And close to 12 million long tons moved from the West Coast South America to the East

Coast of the United States, which includes petroleum from Ecuador and fruits from Chile. The total for this trade route is just over 19 million long tons or 10 percent of all Canal cargo.

More than 13 million long tons of cargo moved from the West Coast of the United States and Canada to Europe, mainly comprised of lumber products and containerized cargo. And 3.4 million long tons moved from Europe to the West Coast of the United States and Canada, essentially comprised of containerized cargo. The total accounted for nearly 17 million long tons or 8.4 percent of all Canal cargo.

Close to 3 million long tons of cargo moved from Europe to the West Coast of South America, mainly containerized cargo, and almost 8 million long tons moved from the West Coast of South America to Europe, primarily reefers with fruits, totaling 10.6 million long tons, or 5.4 percent of all Canal cargo.

The last chart in this sequence shows that 6.9 million long tons moved from the West Coast of South America to the East Coast of South America, mainly crude oil, and 8.4 million long tons moved in the opposite direction, totaling 9.3 million, or nearly 5 percent of all canal cargo.

#### **Principal trade routes**

The following chart summarizes the cargo tonnage that moved over the various principal trade routes during FY96.

The next major element in canal traffic is the total number of transits.

#### **Canal transit trends**

These next chart shows the Canal transit history since it was built. As you can see, there was no significant growth in the number of transits during the last two decades. Nonetheless, this has been offset by the tremendous growth in the average size of the ships that use the Canal.

Which brings us to our final major element in Canal traffic, that is vessel size.

#### **Average ship tonnage**

This chart shows the average size of the ships that transited the Canal in 1955, 1975, and 1996. As you can see, the average size of vessels in PC



NET Tonnage, has more than tripled in the last forty years.

### **Ships of more than 100 ft. in beam**

And this last chart, perhaps one of the most important for purposes of planning for Canal operations, shows the transits by vessels with beams of 100 feet or more from 1965 to the present. As you can see, the number of vessels in this category has grown from one percent in 1965 to almost 1/3 of the oceangoing vessels that transited the Canal in 1996. It is worth noting that these larger vessels require greater transit resources and transit time than smaller vessels which adds to the complexity of the analysis of the Canal's operating capacity.

### **Summary**

As you have seen during this first part of my presentation, the performance of cargo tonnage for the principal commodities, as well as the importance of the routes, the number of transits, and vessel size have varied significantly throughout the history of the Canal.

### **Principal factors affecting Canal traffic**

For this reason, before moving onto the second part of my presentation I will pause to describe, very generally, the major factors affecting Canal traffic. They are perhaps the most difficult to forecast, but are part of the premises that must be included in the preparation of forecasts:

- First of all, we have the geopolitical and economic conditions. These are fundamental elements in the behavior of supply and demand for products and services at a regional and world level. For example, in times of economic recession there is less trade, and this also happens in times of political or military conflicts or tensions when there are changes in consumption habits and in cargo routes. The changes in population and economic growth in various regions sometimes result in a relocation of the industrial infrastructure, which also affects imports, exports, and the buying power of countries and regions.

- Another more volatile factor that affects Canal traffic is that of climatic conditions. Because much of the traffic through the Canal is comprised of grains whose supply and demand are affected

by weather changes, this is perhaps one of the most difficult factors to forecast.

- Another factor that also affects Canal traffic is the evolution of the transportation industry in general, and shipping in particular. Regarding transportation in general, intermodalism and containerization, for example, have facilitated cargo movement over various transportation modes. The result has been the development of alternate routes for much of that cargo that previously moved through the Canal. In the same way, the specialization in vessel design, the increase in vessel size, the search for greater speed and efficiency in shipping, have all contributed to less transits with more cargo movement through the Canal. This factor will have greater importance in Canal traffic, as ship operators become increasingly interested in boosting vessel efficiency and the percentage of their utilization.

There are many other factors, such as advances in computer technology, the production of new materials and products, all of which add to the complexity of the analysis of data and increase the level of uncertainty with which forecasts are made, thus reducing their reliability.

I say this because I believe these factors are important in explaining the dynamic nature of the shipping industry and therefore the demand for the use of the Canal. As I said at the beginning of this presentation, they explain the short life span of forecasts.

### **ICF Kaiser forecast**

I will now proceed with the second part of my presentation. It briefly covers the results of the work done by the consultant firm ICF Kaiser International on the medium and long range Canal traffic projections, and the conclusions derived from that forecast as they relate to the point in time when Canal operating capacity will have peaked.

### **Model**

But, before examining the results of the forecast, I believe it is important to briefly devote some time to the mechanism used to develop the forecast model. For the sake of simplicity, I will skip several steps and only discuss the main ones.





The model is based on a macroeconomic international trade forecast that includes all the commodities and world trade routes. This model includes all the long-range projections for population, economic, industrial, and commercial growth. Among the specific variables, ICF Kaiser International included prices, exchange rates, investment tendencies, employment, consumption trends, etc. for 68 countries. This model was used to extend the long-range forecast prepared by Wharton Econometric Forecasting Associates which only makes projections through the year 2015.

- From this macroeconomic model they selected the commodities whose source and destination are located in any of the 144 routes that pass through the Canal. This submodel was then adjusted to incorporate other competitive elements such as air and intermodal transportation, in order to ensure that the model takes into account the dynamic and competitive nature of the industry.

- Finally, the most important step was to convert the cargo and trade routes forecast into transits. To do this, it was necessary to perform an analysis of the historic relation between these indicators.

#### **Relationship between cargo, transits, and vessel size**

They took data from 1974 to 1997 using cargo by vessel type and trade route to develop a formula that established the relationship between cargo and transits.

This formula was then used to convert the projected cargo movement into projected transits. Some adjustments were also made to incorporate changes in ship design and utilization.

Now, let us look at the results of the ICF Kaiser forecast.

#### **Traffic forecast of cargo tonnage by commodity**

The first chart shows the cargo movement forecast in long tons. The chart shows a slight decline in nitrates, phosphates and potash, modest growth for grains and coal and coke, steeper growth in petroleum and products, and sustained growth in containerized cargo, with a sharp rise beginning in the year 2000. This growth in containerized

cargo is explained by the increase in containerization of manufactured goods and general cargo.

#### **Principal route forecast**

The next chart shows cargo tonnage distribution over the principal trade routes. The route between the United States East Coast and Asia continues to be the principal route for canal cargo and is expected to more than double in the next four decades. Trade between the East Coast U.S. and South America, and between Europe and West Coast U.S. and Canada are expected to grow steadily but at a much slower rate. Trade between Europe and West Coast South America is expected to grow very slowly.

#### **Forecast of cargo by vessel type**

In the next chart we see the projected distribution of cargo by type of vessel. You will note that ICF Kaiser International is predicting a major increase in containerized cargo, especially from the year 2001, and continuing on until the year 2015. Cargo moved in dry bulk and tanker vessels is expected to show moderate growth.

#### **Transit Forecast**

The final forecast element shows traffic projections in number of total transits per year. The curve shows the yearly traffic forecast, assuming there are no limitations in Canal capacity.

However, as we all know, the Canal has a finite operating capacity, even after implementing the current improvements. Assuming average Canal Waters Time of 24 hours as a benchmark, the operating capacity until the year 2002 will continue to be approximately 14,000 commercial oceangoing vessels per year, and beyond 2004 it will be just over 16,000.

In summary, the main conclusion drawn from the ICF Kaiser International forecast is that:

#### **Conclusion**

- Assuming only a modest growth of 2 percent per year in traffic, and a benchmark of average Canal waters time of 24 hours, the operating capacity of the Canal will have peaked by the year 2010.



### Next Steps

- The next steps will be to revise the forecast to reduce the risks and uncertainties, especially for the period after the year 2015, perhaps using simulation tools that may allow quantification of various scenarios and the assignment of various risk levels.

- Parallel to this, we should start the phase for the design of a third set of locks that may allow us to have a better idea of the costs and technical requirements of such a project, including environmental impact and water supply studies.

- This additional information will allow us to conduct financial analysis to determine whether the costs of such a project can be amortized within a reasonable time by the forecasted traffic.

Because forecasts beyond a 15-20 year time frame have a high degree of uncertainty, we recently contracted The Futures Group, a U.S. consulting firm, to develop long-term planning scenarios for the purposes of understanding how the future could plausibly affect Canal strategies. This firm held a scenario-based workshop in Panama on July 21/25. In addition to key PCC employees, participants from local and international maritime businesses were invited. Also participating were members of the U.S. Army Corps of Engineers and representatives from ICF Kaiser International.

Scenario-based planning is a technique designed to manage uncertainties rather than to predict the future. Its planning horizon tends to be further out in time (when ambiguity is greater) than conventional forecasting approaches. The intention is not to predict what the market will be and build a master plan, but rather to ask what the future might hold and identify the actions that can be taken today that will sustain operations and development through a changing future. As a result, the technique tends to rely more on expert judgment, and less on quantitative forecasts.

On the basis of this planning method, four scenarios were designed which for reasons of time I will not explain in detail, but I will summarize the major conclusions which suggest that in order to prepare for possible long-term world scenarios, the Canal organization must:

- Do everything necessary to operate as a flexible corporate enterprise that is willing to adapt to the changing needs of the industry.

- Clearly define the new mission and role of the Canal within Panama's national development strategy.

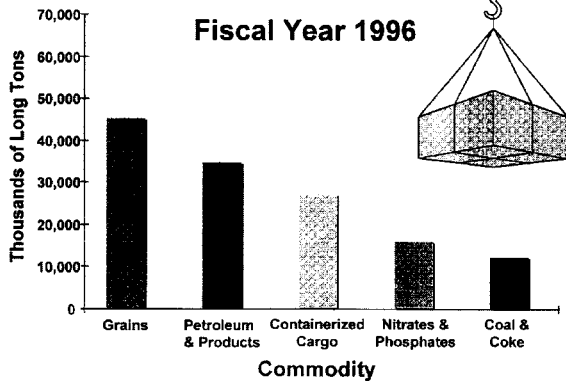
- Begin preparations for the construction of a third set of locks.

- Design a growth strategy to provide additional services to complement the Canal's core business.

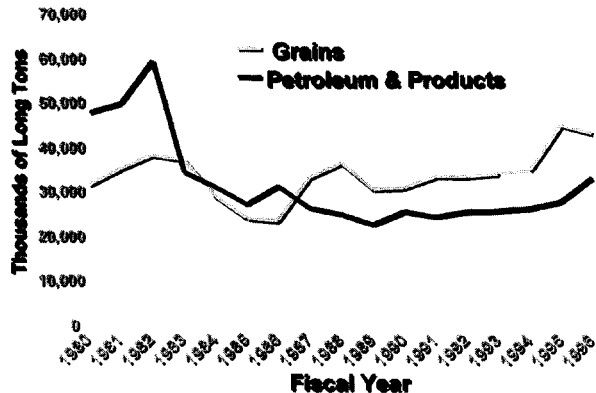
• *Rodolfo R. Sabonge is Chief of the Economic Research and Marketing Division Panama Canal Commission*



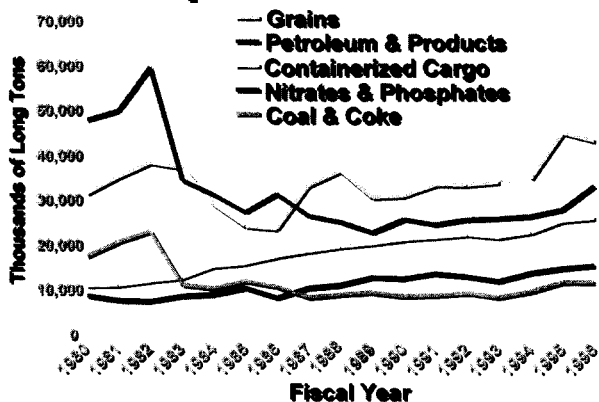
## Principal Commodities



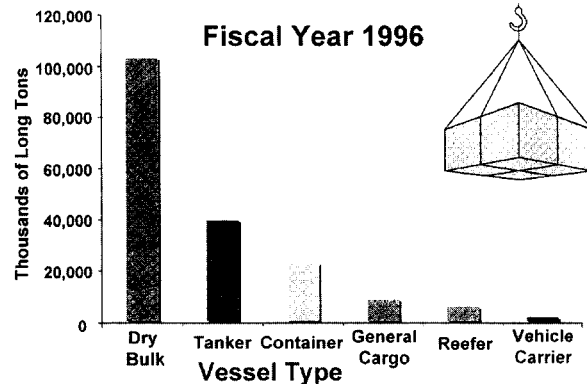
## Principal Commodities



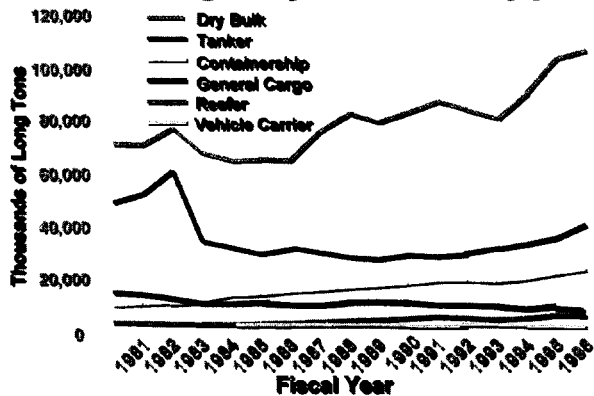
## Principal Commodities



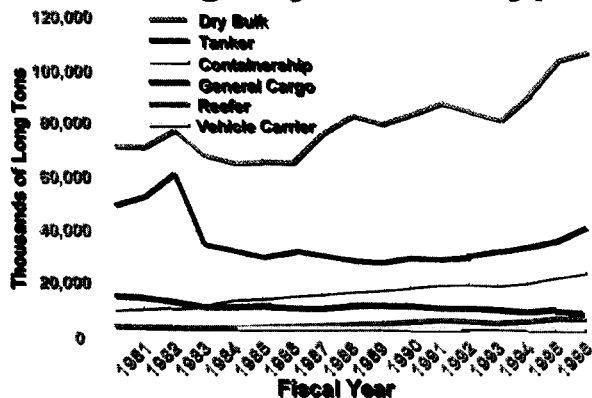
## Tonnage by Vessel Type



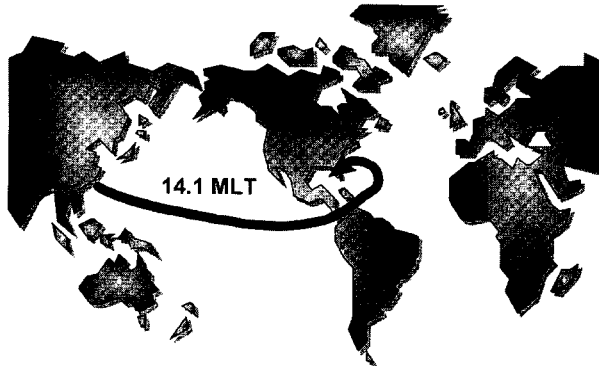
## Tonnage by Vessel Type



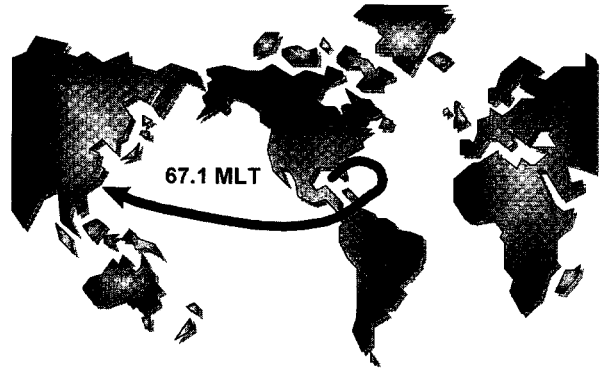
## Tonnage by Vessel Type



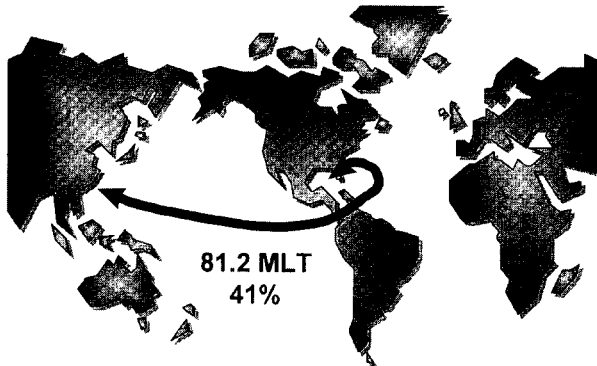
**Principal Routes - FY 1996**  
Asia to East Coast U.S.



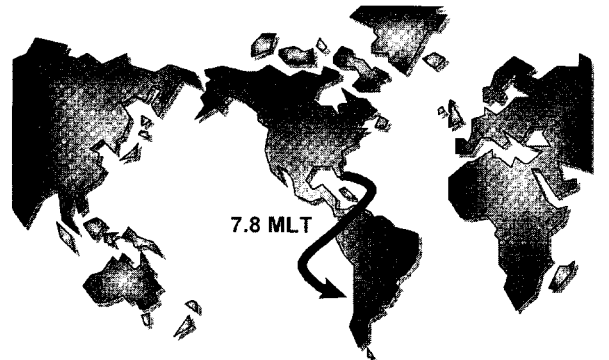
**Principal Routes - FY 1996**  
East Coast U.S. to Asia



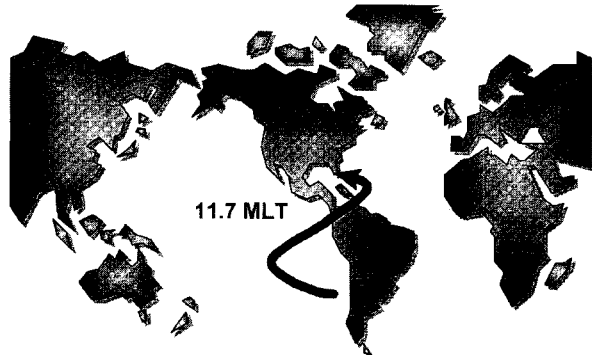
**Principal Routes - FY 1996**  
East Coast U.S. - Asia



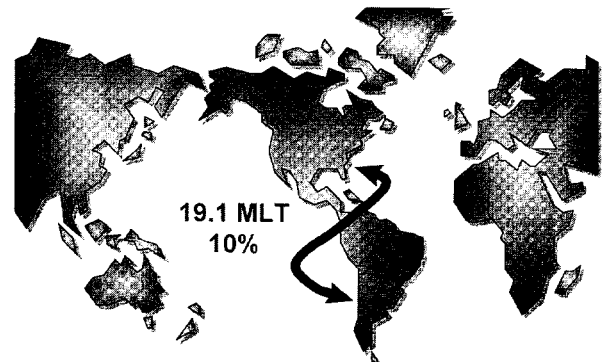
**Principal Routes - FY 1996**  
East Coast U.S. to West Coast South America



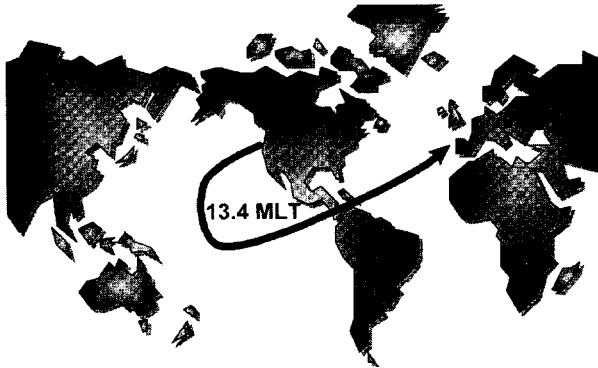
**Principal Routes - FY 1996**  
West Coast South America to East Coast U.S.



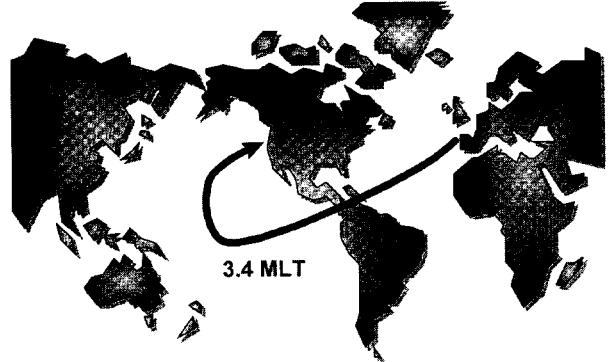
**Principal Routes - FY 1996**  
West Coast South America - East Coast U.S.



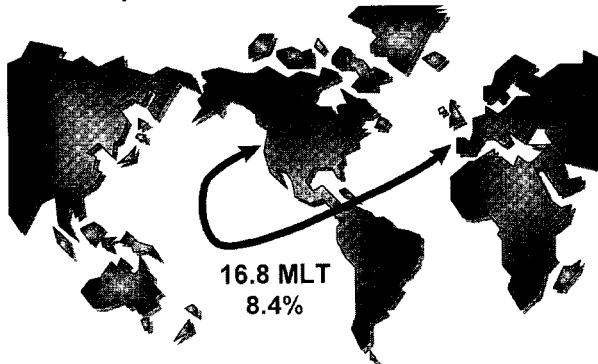
**Principal Routes - FY 1996**  
West Coast U.S. & Canada to Europe



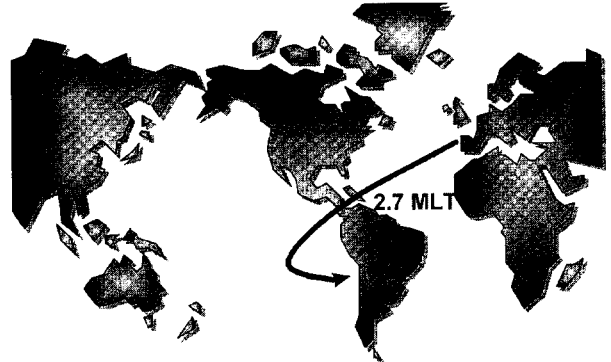
**Principal Routes - FY 1996**  
Europe to West Coast U.S. & Canada



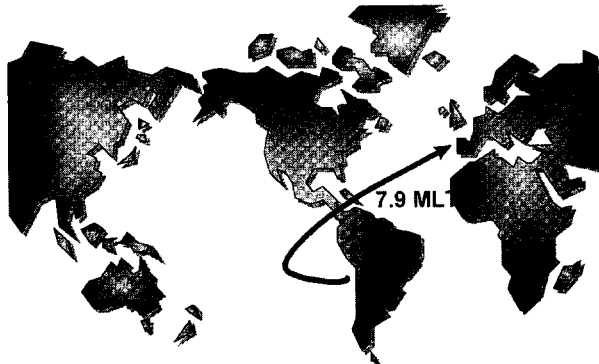
**Principal Routes - FY 1996**  
Europe - West Coast U.S. & Canada



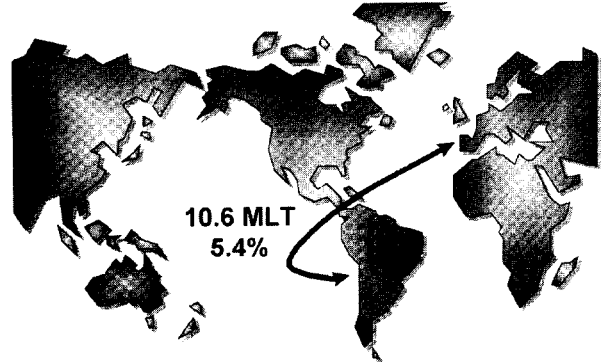
**Principal Routes - FY 1996**  
Europe to West Coast South America



**Principal Routes - FY 1996**  
West Coast South America to Europe

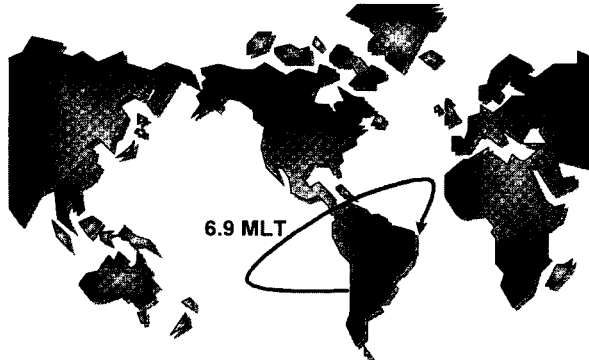


**Principal Routes - FY 1996**  
West Coast South America - Europe



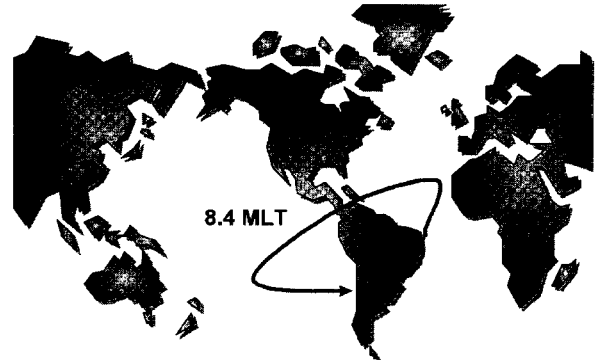
### Principal Routes - FY 1996

West Coast South America to East Coast South America



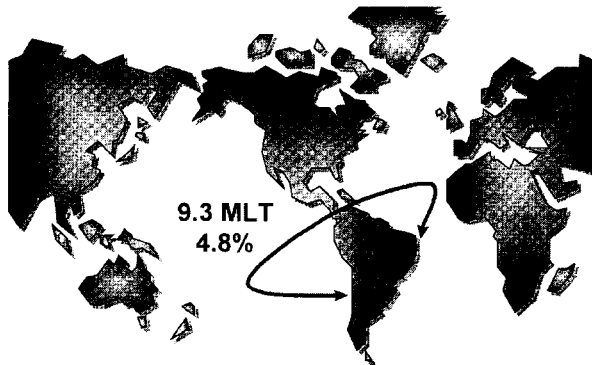
### Principal Routes - FY 1996

East Coast South America to West Coast South America



### Principal Routes - FY 1996

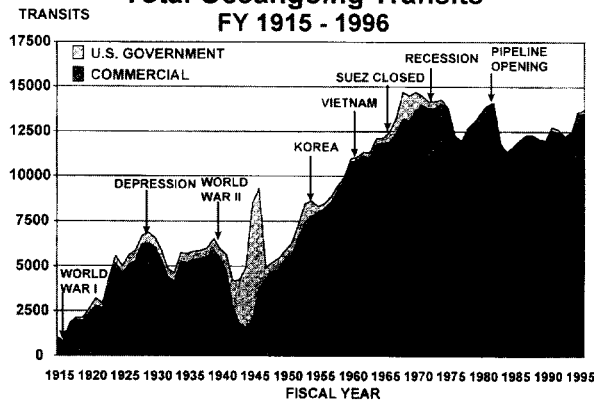
East Coast South America - West Coast South America



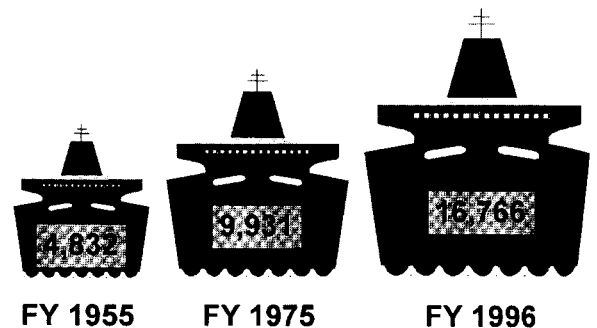
### Principal Routes - FY 1996



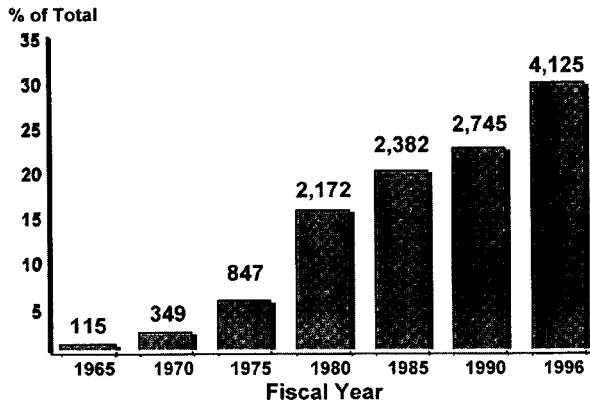
Total Oceangoing Transits  
FY 1915 - 1996



### Vessel Average Tonnage



## Vessels 100' Beam and Over



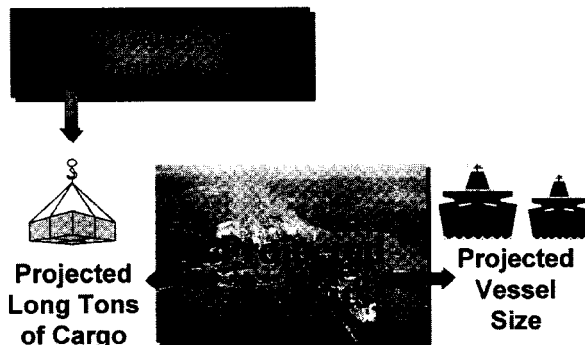
## Forecast Model

Macroeconomic Trade Forecast

Commodity and PCC Trade Routes

Cargo and Trade Routes forecast is converted into transits

## Commodity, Transit and Vessel Size relationship



## Principal Factors Affecting Canal Traffic

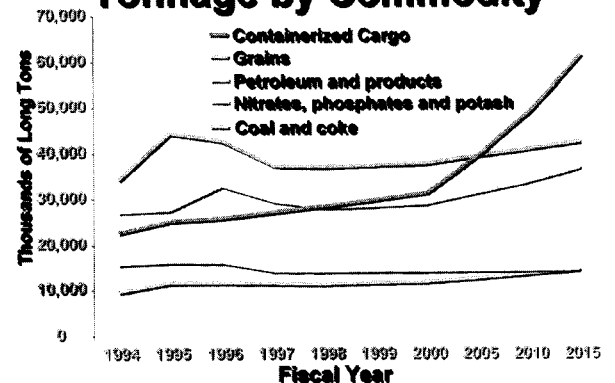
- Geopolitical and Economic Conditions
- Weather and Environmental Conditions
- Changes in the Transportation Industry

## Commodity, Transit and Vessel Size relationship

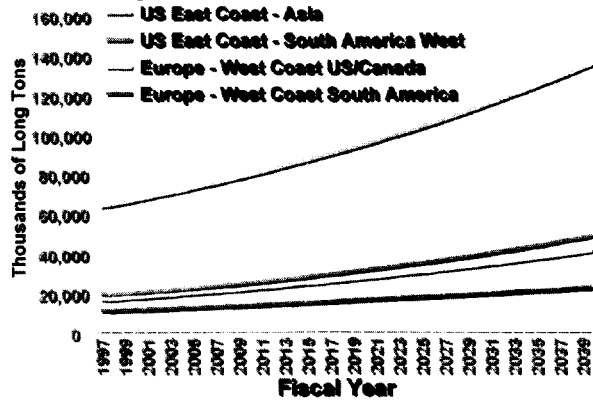
Historic Relationship 1974 - 1997



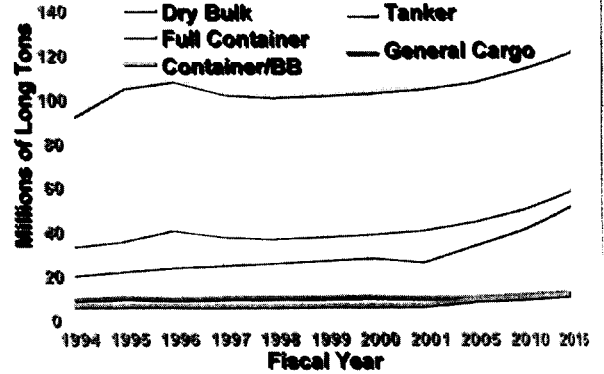
## Traffic Forecast of Cargo Tonnage by Commodity



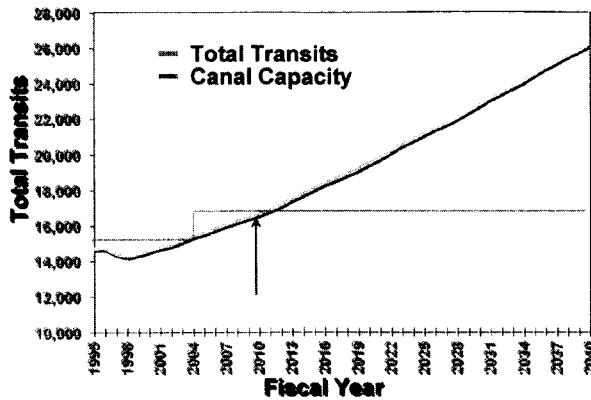
### Principal Trade Routes Forecast



### Cargo Forecast by Vessel Type



### Total Transits Forecast



## Conclusion

Operating Capacity will peak at the year 2010 assuming average Canal Waters Time of 24 hours

### Next Steps

- ^ Fine tune forecast using simulation techniques
- ^ Third Locks Engineering design
- ^ Environmental impact & water supply studies
- ^ Financial Analysis

### Scenario Planning The Futures Group

Design strategies and actions under various world scenarios  
 Plan for the future. Also  
 clearly define the mission and  
 within the organization  
 Preliminary work to build out of  
 Locks  
 Provide additional services to  
 support the company's core business





**THE CANAL IN THE 21st CENTURY: Transcript of the Question-and-Answer Period:  
Evaluation of the Development Alternatives of the Panama Canal:  
A Study of the Long Term Traffic Forecast/Long Range Canal Traffic Scenarios**

**Speakers:**

**Peter Wild**

*Director, G. P. Wild (International) Ltd.*

**Rodolfo R. Sabonge**

*Acting Chief, Economic Research and Market Development Division, Office of Executive Planning, PCC*

**Panelists:**

**Richard A. Wainio**

*Director, Office of Executive Planning, PCC*

**Ben Hackett**

*Senior Vice President, ICF Kaiser International*

**Leo J. Donovan**

*Vice President, Transportation, Booz-Allen & Hamilton, Inc.*

**Eric E. Miller**

*Senior Director, The Sabre Group*

**Peter Kennedy**

*Senior Consultant, The Futures Group, Inc.*

**John Gribar**

*Chief, Design Branch, US Army Corps of Engineers*

**Agustin Arias**

*Acting Chief, Canal Improvements Division, Office of Executive Planning, PCC*

**Moderators:**

**Christopher Hayman**

**H.E. Olga Bosquez Poveda**

Mr. Hayman:

It was quite clear from the forecast that there was a strong implicit anticipation of strong growth so far as the container trade is concerned. I would like to get some views on that forecast and go first to Leo Donovan.

Mr. Donovan:

I want to address that projection that Rodolfo had on container ships which showed after 2001 that the growth rate behaves like a hockey stick. So I just happen to have four or five slides with me that, if I can get some help, I will put them up and will go through them very quickly. The first one (and I know this is not as legible as Rodolfo's, we don't have the technology at Booz-Allen that they have here) shows that the container ship business is a core business of the Canal, growing from 10 percent in transits in 1978 to 15 percent by 1995. There was a hiccup, though, the hiccup was in 1984 and it lasted for five years. That hiccup was because of the double stack train system across the United States. It took five or six years for the Canal to catch up to that situation and then get back on the growth track of what now represents 15 percent of transits, but 20 percent of revenue. So it is a big business. But I am afraid of hiccups.



So the next slide talks about the development of the world container fleet, in four classes: the lowest is the feeder and the Handy, the second is the sub-Panamax, the third is the Panamax, and the brown one at the top is the post-Panamax vessel. The years, so that you can see them, are from 1980 on the left to 1998, next year, on the right. And what we see is that this post-Panamax class, which is in brown, grows from virtually nothing in 1995 to 20 percent of the world's capacity by the end of next year. Said another way, by next year, this post-Panamax capacity, which is in brown, at 800,000 TEUs per year will be larger, I say larger, than the entire container ship fleet in 1984, just 13 years ago. This shocking surprise has caught most in our industry unaware. Even the U.S. ports who deepened their channels to 42 feet between 1991 and 1994, now have to revisit those deepening programs and will now look to 50 feet, because of this post-Panamax fleet.

The next slide, I have talked about the past, projects the future to the year 2020, or just 25 years from now. And it shows the division of the fleet into these four classes: feeder/Handy on the bottom, sub-Panamax second up, Panamax third up, and post-Panamax last up. This post-Panamax, within 25 years from now, will be 30 percent of the entire fleet capacity. Every other categories will decline in relative terms. Finally, or next to finally, where will these huge ships be deployed? Initially they are going to be in the Asia-Europe trade and then they will migrate to the trans-Pacific between Asia and North America. Finally, when traffic builds, they will be placed on the Suez route between South Asia and North America. A Booz-Allen model suggests that the optimal vessel size on this route between South Asia and North America exceeds 6,300 TEUs.

This slide shows traffic between all of Asia and North America between 1991 and projected forward to the year 2000, just three years in the future. This analysis shows at the top, and these are in millions of tons, the dip in West Coast handles from Asia that did occur in 96 and 97 but suggests the West Coast will continue as the 800 pound gorilla. The interesting dynamic is at the bottom of that slide, which shows the Suez route growing 20 percent each year from two million container tons in 1991 to over ten million on the right of that slide, within three years from now: 23 percent a year. And sometime this year or next, the Suez route will pass the Panama route in volume. All this suggests that the life cycle of the Canal shown on the right in terms of transits from 1914 is in the declining stages of its product life cycle and may be following the routine of most commercial products shown on the left, from the beginning of their life to the end of their life. Panama needs a new product. To do otherwise would be to deny the Canal access in the year 2020 to 30 percent of the market that today represents 20 percent of your current business. That may be the equivalent of telling Ford to discontinue the Taurus or American Airlines to stop calling Miami.

Mr. Hayman:

I would like just to get some reaction to those comments, the point about the heavy emphasis on the post-Panamax size container vessels. Perhaps I could ask you, Ben, to give some response to what you just heard.

Mr. Hackett:

I certainly would agree with most of what Leo has said. Our projections as well show that the growth rate in the size in the container ships will take place, that trend is already established and well under way. The development of international hub ports also helps that trend and I think if Panama is to succeed and to capture this trade, all the developments of the Canal in terms of the third set of locks and the hub ports at both ends of the Canal will generate that business.



Mr. Wild:

There are, that we are aware, container ships that can carry up to 8,000 TEUs already in the pipeline, so that fleet is definitely going post-Panamax. I think this just reinforces the point that we made earlier on, which is that the Canal is rapidly becoming obsolete. And if it does not upgrade its products, that will become apparent very, very soon in the future, particularly with regard to container ships, but also in other areas as well, such as cruise ships.

Mr. Wainio:

When I first became an economist, one of my economists told me that the essence of forecasting was that when people ask you questions about the future, you give them numbers or you give them dates, but you do not give them both. And Leo's presentation—in a way he was sticking it to me because, was it 15 years ago, Leo? maybe longer, when we first came into contact with one another because he wrote an article about product life cycle saying the Canal was obsolete or obsolescent and I disagreed vehemently with him at that time, so now he is taking this opportunity to tell me that perhaps he was not wrong. I do not disagree with what Leo said or what Peter Wild just said, I do believe that the South East Asia route through Suez using post-Panamax ships is going to grow immensely. That presents a real threat to U.S. West Coast ports and the intermodal system, it presents an opportunity for East Coast ports—Freeport, for Norfolk Hampton Roads and some others—and it presents somewhat of a threat to the Panama Canal. But I would not want to leave anybody with the impression that because post-Panamax ships are running from Singapore to Freeport, Bahamas, through Suez, that is the end of the Panama Canal. Clearly if we want to take advantage of growing traffic in the world, we do have to expand the capability of the Canal, and we are moving in that direction, and that is what most of the presentations have been about in the last two days, and what you are going to hear from Agustin Arias in just a few moments: more on the issue of capacity and the things we can do to expand the capacity of the waterway. But most of the forecasts we have show very strong growth on the bulk trades and they also show very strong growth on the North-South trade routes, trade routes that do not utilize post-Panamax container ships, that at this point do not even use Panamax size container ships. So, I do not want anyone to leave this room thinking that the end of the Panama Canal is in sight. I guess what I am opposing here is the continued use of the word obsolete. If you do nothing, certainly it will become obsolete at some point in time. But we are not doing nothing. We are doing many things and the Canal will continue to serve a large share of world trade, most of it will continue to be bulk trade. But we will have additional container business as well.

Mr. Hayman:

Just so that we can look at some of the numbers in Rodolfo's presentation and context, Ben Hackett, could you give us an idea, do you regard this view that you put forward as being conservative or optimistic or somewhere in between?

Mr. Hackett:

Realistic? I think it is true to say that any true economist will always have a different view. I believe our forecasts are realistic. They tend to the lower, conservative side, rather than the optimistic side. We are showing growth that is somewhere around two percent in general for all of the cargoes, around four percent the containerized trade. To set that in relation to other trades or other growth, world economic activity over the last 20 years, 15 years, has been about three to four percent. Trade in manufactured goods has grown between six to 7.5 percent. Again, to set the scene in terms of the Panama



Canal throughputs, we are looking at chunks of 40 years. If you take the 40-year period from 1917 to 1957, cargo growth through the Canal went from around 7.1 million tons to 49.7 million tons. That is a seven fold increase over 40 years. If you take the next 40 years to this year, you have a four fold increase in volume of cargo going through the Canal. We are predicting only a two fold increase over the next 43 years, so it is hard to predict or show that it is a highly optimistic figure. What we know is that producing long term forecasts is very difficult. You tend to do forecast basically on knowledge of history and use in the present, and basically you are making some sort of assumptions about the future. And as Peter has mentioned, long-term forecasts tend to under-forecast what has actually happened. So if it is to say, relatively realistic figures, very possibly a little bit on the conservative side.

Mr. Wild:

I second what Ben had to say. We feel that the numbers that have come out of our work are being on the conservative side and I just really would like to define what we mean in terms of obsolete. It is obsolete in terms of the market as a whole, and the Canal to remain competitive and attractive in the future, we feel, needs to be enlarged so that the product, if you like, keeps pace with the demands of the market, therefore postponing its date of obsolescence. I do feel all the numbers here are conservative, and the date of 2014 that we suggested really is probably the last date so the Canal in its present form we feel enlargement should take place. It is a ten-year lead time, as we understand it from this project. So, it needs to get moving fairly quickly.

Mr. Sabonge:

I would like to stress the fact that these two studies were conducted totally independent of each other. When you look at both of the results, or their conclusions, they are very similar. Mainly, the difference between Peter Wild's study and ICF Kaiser's study has to do with the fact that Peter Wild was taking as a given a lot of the premises from the 1993 study, such as capacity. They were assuming a capacity of 17,000 vessels per year. That, of course, then moves the saturation point a bit further. But essentially, when you look at the trade forecast, they are basically the same. So, I would like to stress that point again. Because two independent consultants arriving at very close conclusions I think is validating the results.

Mr. Hayman:

I will address this question to Peter Kennedy, because it picks up on the work by the Futures Group, and specifically it picks up on the point made about changing the mode of the industry, I think, towards the end of Rodolfo's presentation, the reference to do everything necessary to upgrade as a flexible corporate enterprise that is willing to adapt to the changing needs of the industry. The question to you, Peter, is what are some of the things needed to be considered under this general heading and what are some of the challenges that you would go into in making the business more businesslike, essentially?

Mr. Kennedy:

In our work with the PCC planners and outside experts, over the last three months, we did in fact spend a lot of time talking about what exactly we mean by shifting the Canal operation and the future Authority to becoming more market sensitive, becoming more like a private business. What this is actually meaning is that we are talking a migration from a thoughtful but decisive shift to a business-type organization that is responsive to the needs of its customers and the changes taking place in the broader maritime marketplace, some of the elements of that shift that are very important, but are not



necessarily prescriptions per se. But things that will need to be considered, we think, have to do with, for example, pricing, looking for ways of both pricing that is opportunistic and yet responsive to the longer term needs of the Canal customers. It means also looking for ways to reduce the cost of doing business. Perhaps having to do with eliminating work force redundancies, perhaps looking for ways to outsource non-core activities. It is thinking about new types of revenues, perhaps, new ways of exploring alliances that will, perhaps, result in new sources of revenue that will counteract downturns in toll revenue. It has to do with, for example, exploring new organizational forms, or perhaps facilitating ways of raising capital for the Canal, as it looks forward to new needs in terms of capital projects. And finally, and perhaps most importantly, it deals with cultural change. It means changing an organization that, in many ways, resembles what we would call in the U.S. a utility type mind-set, I might say, and transform it in a way that is much more responsive to its customers' needs and needs of the global maritime marketplace, that is increasingly competitive and increasingly challenging, but that also presents extraordinary and unique opportunities.

Mr. Hayman:

Peter, another question that I would like to put to you and some of the other panelists. What are some of the elements of risk in the trade forecast and what are the techniques for managing that uncertainty?

Mr. Kennedy:

I think Rodolfo said at the top of his presentation that one of the big areas of unknown and uncertainty is the future shape of global political and economic relations. And if you look at the movement of commodities and goods and services through the Isthmus, much of that has to do very much with relationships between major global trading partners. We are living through a period in the last 15 years of, perhaps, unprecedented stability in terms of global trade and global commerce. As we look forward to the next 15, 20, 25 and 30 years and beyond, we must also consider that the relative peace that we have had between the major powers of the world and the major trend towards the opening and integration of markets may not be continued as it is today. That needs to be explicitly considered, and the implications of that needs to be really thoughtfully thought out and integrated into any future planning having to do with the Canal asset.

Mr. Hackett:

I think of two elements of risk when one looks at forecasts of this nature. One is the bulk trade, grains from the U.S. Gulf, which is very dependent on weather conditions. I think that one needs to model that a bit more to run simulations around that to get a better range and confidence limits around the forecast. The other area is the actual size of the ships in terms of container ships, particularly under the routings that those are on. And what happens if you build a new set of locks, does that create a whole new Panamax size vessel? Therefore, the relationship between the volume of cargo and the transits breaks down and transits reduce effectively if you have the new Panamax determination. One way of looking at the risk is to run simulation analysis, Montecarlo type approach, but more sophisticated, more advanced than that to build up confidence limits that do not typically take the 50 percent line, but are closer to something like 80 percent limitation, to get more confidence in terms of the type of forecasting one produces.

Mr. Wainio:

I think I would like to make a comment that expands just a bit on Peter Kennedy's work that he did



for the Panama Canal, and I would start by reiterating what, part of what, Rodolfo said about forecasts. Forecasts are clearly a very important planning tool and that is particularly true for short and near term operational and financial planning. We cannot do without forecasts for budget and financial planning in the near term. But I have to say that, quite frankly, I do not believe that quantitative methods that give you a forecast 20, 30, 40 years out, that literally put a stake in the ground, a point in time to focus on, are worth the paper they are written on. And that is precisely why I recommended to our Administrator, Mr. Aleman, that we hire the Futures Group, to take this more flexible planning approach, which looks at different scenarios, or different worlds that could develop in the future, and it is an approach that would encourage us to develop robust planning approaches, that would allow us to deal with any world that might appear on the horizon. If traffic were to grow very significantly, we would be prepared to handle it reasonably well. If traffic grew as these forecasts indicate, only one to two percent, we would be positioned to handle that traffic well and still be an economically viable enterprise. And I think it is important to point out that regardless of whether you believe the forecasts that were just presented to you or if you think traffic is going to grow to much higher levels, one of the things that came out of the Futures Group scenario planning exercise was that even very limited growth in our business is going to require that we take very significant steps to increase our capacity. And the third set of locks or some major alternative that provides that additional capacity appears to be absolutely essential in just about any environment that we looked at, short of the, I guess, environmentally, restricted environment where trade literally ceased between countries. But if you think the world is going to progress and you think trade is going to grow, whether it is the year 2010 or whether it is 2015 or 2020, we are going to need more than we have now. And that is why we are doing all of this planning and that is why we are moving aggressively to do further studies of the third set of locks.

Mr. Sabonge:

I would like to go back to something that Peter Kennedy said regarding becoming more a business-type organization. One of the recommendations that you saw at the end had to do with developing a growth strategy to provide additional services, or complementary services to the maritime industry. And I would like to go back to that, because in the excellent presentation by Mr. Juan Kelly yesterday, he mentioned a survey, the results of the survey conducted with the shipping industry telling us in a way to stick to the core business. I would like to say that when the analyzes of these other possible strategies to look at the future were defined at the end of the Futures Group's exercise, one of the things that came out is that having different scenarios, the Canal has to be prepared for cyclical movements, for maybe not so much growth in certain areas as predicted. And to do that, the Canal needs to look for other sources of revenue to be prepared and not depend solely on tolls or on the actual core business of the Canal. That is what drove that strategy at the end of that exercise.

Mr. Wild:

I would like to make one comment on ship size, really, the locks' size of 150,000 tons will not satisfy all the requirements of the international fleet. But a lot of the areas of the fleet actually have moved down the unit cost curve, for example tankers. And the container fleet is moving down that unit cost curve as the cruise fleet is. But there is a point where they actually do not gain by doing that, they start to get these economies of scale and this is something that needs to be looked at in terms of particular trades in the Panama Canal, I think.

Mr. Hayman:

(Question by John Thomsen of Armada Shipping Group) The Armada Group had more than 200



Panama Canal transits in 1996 ranging from 4,000 deadweight tons to Panamax size and trades with dry cargo, reefer and liquids. The G. P. Wild analysis concluded an enlargement would be required by 2014 and that such enlargement requires a net increase in revenue of 60 percent. The question is from where will such extra income come? Your conclusions arrive at a need for an enlargement of the Canal, a third set of locks, which implies, however, an increase of tolls of 60 percent. How can you rationalize this apparent total conflict when a minimum recent increase was opposed?

(Question by Chris Horrocks, Secretary General of the International Chamber of Shipping) Peter Wild's study suggests that a substantial increase in current tolls would be necessary to fund a new set of locks, but it is a future generation of ships which will benefit, not today's. Under the new regime, will it not be possible to raise money by the usual commercial or governmental means and aim to recover the cost from future users, rather than current users? If the Caesar Park Hotel wants to build a new swimming pool, I do not expect to have to pay for it until it is there. I do not want to pay for the convenience of swimmers in the future.

Mr. Wild:

Well, I think I better kick off and then I am sure the other panelists will have something to say as well. I think that the increase is of revenue, 60 percent increase of revenue, rather than overall tolls, and I made the point in my presentation that any costs associated with increased tolls that may be necessary also have to be looked at against the cost that would be associated with a Canal which is increasingly close to the point of saturation, which implies that there is going to be the possibility of increased delays, if anything starts to go wrong at all, as the system moves very close to its maximum operating capacity. The second thing is the possibility of larger ships using the Canal with the lower unit cost into it. That class of ship should be able to absorb a higher toll than the existing fleet of ships that use the Canal; that is, the fleet of ships up to approximately 65,000 tons, which is the current Panamax limit. So I think the industry has to take an overall view of this particular figure, rather than a specific view of it. And I would be very interested in the comments that other people in the panel would have to say.

Mr. Wainio:

These two questions really get us to the heart of the issue. You know, I think it is very easy for us to say that operationally we require something new and something that will cost a lot of money here in Panama when we look down the road. The question really is: is it economically viable? is it financially viable? and not whether it is operationally useful, because that is the easy part of the question. There is a number of points here that I would like to make, though.

First, it is that Peter's numbers were based, as I understand it, on the prior study, where you are using 7.2 billion dollars, something like that, they originally estimated the third set of locks, the high rise set of locks, to be. The work that we are doing, part of the work, is focusing on how we can come up with more creative designs: build a third set of locks and do it for a lot less money, so we do not yet have a good cost figure. We certainly hope that it is a lot less than the number that has been bannered around up until now: seven billion to ten billion range.

The other issue is, let us just say, it is five to seven billion, if you are talking 500 million dollars a year in interest payments, that is clearly a number that is extremely large and scary if somebody says you are going to have to finance it the way we finance things now. Of course we would not dream of financing things the way we finance things now, not that kind of project. We are a pay-as-you-go operation right now. You could not build a multimillion dollar Canal and expect to pay for it during the construction phase. You have to do it with some kind of financing, that extends the payment out

many, many years. I think also that it would have to be a combination of financing, both grants and some traditional financing methods. And then keep in mind a few other big numbers on the revenue side. If the forecasts are right, and they say they are conservative, they are adding anywhere from a 1,000 to 1,500 ships a year, big ships, to Canal traffic, after you build this third set of locks. I mean, that in itself, at current toll rates would probably generate anywhere from 50 to 100 million dollars in incremental revenue. Plus ship size will be larger, as Peter says, so your average toll is going to be a lot higher, so your revenue flow from your core traffic is going to be a lot more. It does seem conceivable to me that it is something that can be financed without a very, very large increase in tolls at the outset or during the course of the construction period.

Mr. Donovan:

There is a model. It may not be directly applicable, but in the Port of Los Angeles they have an existing bulk terminal and they are building and completing a brand new bulk terminal. And the new bulk terminal applies to new users and they subscribe shares to the stockholders of the new users, not the old users. So the stockholders are railroads, shipping companies, coal producers, and Japanese utilities. They are pledging their revenue against that future project and it is fully subscribed. Now, it is true, in order to get the bond rating that they needed for the right financing, the Port of Los Angeles had to pledge its revenue stream of the broader sense. But I bet you that there is an analogy between that Los Angeles case and what we may be thinking about here in the future.

Mr. Gribar:

Let me piggyback on Richard's comments because it is very important that you understand that the analysis was made on 1993 studies. The numbers in there, of course, would be accelerated or in desktop in today's dollars would be more, but the ongoing studies that we have initiated now suggest that savings could be achieved and these numbers may be very high, or high, and you should not be making an analysis and taking these numbers and be running scared at this point, until the economic viability of a new lock is investigated. Certainly, the Canal does not want to build a lock of 150 feet wide and 1,500 feet long which can service one or two ships a day; it just is not there. And one of the suggestions that we have made in the study is that they canvass the users to what you want and to what size ships that you would use, so that you can determine the economic viability. So the point to be made again, and to piggyback on Rich: please do not run scared with these numbers; they are outdated and ongoing analysis has shown that some savings could be achieved.

Mr. Sabonge:

I would like to pick up on something that you said when you introduced Leo. Leo Donovan and Booz-Allen and Hamilton are now under contract to conduct a market survey, a market study for the Panama Canal Commission and that is part of that process of canvassing the industry that we are going to take in the next following months. So I just want to announce that, because we may be touching on many of your doors and the better information we get, the better decision-making we will have.

Mr. Hayman:

(Question from Dr. Younger Wu, Professor at the National Taiwan Ocean University) How do you take into consideration the factor of competition from the double stack train intermodal services on





the Far East - U.S. East Coast trade, so far as the container shipping is concerned? Also, for consideration of the impact if Panama successfully rebuilds the existing railroad connecting the coasts of Panama on Canal traffic.

Mr. Donovan:

The double stack began in '84, and as I said earlier, it did impact the transit through the Canal for a period of about four or five years. But I think there are going to be changes and the all-water routes are going to be much improved. You have been reading about the problems with the western railroads: service levels are poor, militancy in the West Coast labor unions is in an all-time low, the merger in the East Coast between NS and Norfolk's CSX will lower the rail rates to the Mississippi River, and I think an all-water option either through Panama or the Suez can compete with the double stack, at least to Chicago. At least on cost, maybe not on time. It can compete on time and cost to New York and to Columbus, Ohio. So I think the double stack has had an effect, but it has run its course. You cannot get more efficiency out of that system. We can get it out of the all-water system and the eastern railway system.

Mr. Hayman:

There is a further question here, Leo, about the impact of toll increases on cargo diversion on the landbridge.

Mr. Donovan:

It would vary by commodity. But I think the least sensitive commodity, and I am not going to make a generalization, is the container item. So I do not think that factor standing alone dominates the macroeconomic factors of total transport, door-to-door for containers. All the other commodities, yes. But not that one.

Mr. Hayman:

Do you agree with that, Peter?

Mr. Wild:

Yes, I think so basically, Chris. I have nothing really much more to add to the previous speaker.

Mr. Hackett:

A couple of comments. I would agree with Leo on the double stack, it has run its course. To some extent there is a little bit of expansion potential on these. The new southwest passage has been looked at, running down to Texas and then back up again. On the transisthmian railroads, that is one of the questions mentioned, that certainly has potential. You are looking there, if the thing is running efficiently with double stack trains, probably on the region of 350-370 thousand TEUs per annum. That could translate into somewhere on the region of 300-400 transits being unnecessary.

Mr. Hayman:

A question to Peter Wild, picking up on your definition of obsolescence, rather as Rich Wainio did earlier on. Why do you say that the Canal is already obsolete when approximately 92 percent of the world's fleet can still use it?

Mr. Wild:

I think this question of obsolescence is really quite an important one. The important factor, and this was pointed out earlier, particularly with regard to the container fleet, is that the world's fleet is very rapidly moving post-Panamax and the impact of that in terms of the products on offer now, means it is becoming obsolete. It is not completely obsolete, but it is becoming obsolete essentially. And this will become more apparent in the years ahead. So I think it is a reasonable statement to make. That is not to say that the Canal will not continue to function. That is not to say that it will not continue to move, allow ships through it, even if there is no further development, always. In terms of the market, on the opportunities that market offers for the Canal as a service provider, then I think that it probably is becoming obsolete and it does need, if you like, an upgrade to move to the next step of market development. Now, the increase in ship size, and I hinted about this earlier on, is not something that goes on ad infinitum forever and a day. It has been possible to build ships of one million tons deadweight, technically for at least ten, 15, 20 years to my knowledge, and they have never been built. And they are not being built for a lot of different reasons, but one of them is that, evidently, you do not gain anything by building a larger ship in terms of reducing your unit costs and you also incur in less flexibility in operation, and so on and so forth. So, I am encouraged, actually, by this thinking of moving towards a market-driven approach, rather than a service-driven approach, that has been alluded to today. Research clearly shows that organizations that are market-driven tend to be more successful and tend to provide what the market wants. And I think this for the future of the Canal, I think we need some vision here. We need to be looking for the Canal, not just for the next 20 years, but perhaps the next 80 years. The Canal has been there 80 years already and we have to look ahead, maybe, another 80 years and say where we go, if we enlarge it what happens after that, and so on and so forth. So I think it is a moving target all the time. The Canal through time will potentially become obsolete again and will need further upgrading and so on and so forth, and that will be an ongoing process. I hope that served as a reasonable answer to the question.

Mr. Wainio:

I hate to publicly disagree with people, but I do not agree with Peter Wild's assessment of ship size. If you limit your discussion to container vessels, clearly in the last few years and during the next couple of years, you are going to see a large number of post-Panamax container ships enter the world's fleet. But they do have an oversupply or will very shortly, I mean, they do on many trade routes right now. That overcapacity problem is going to get worse in the next couple of years on some key trade routes. I do not think you are going to see the level of newbuildings accelerate further from what we have seen in the last year or two, when we have, let us say, 90 or 100 of these big ships on line. In the next year or two, you are going to see a slackening in the new buildings of post-Panamax container ships for some period of time, at least. The other issue is what are the trends in the bulk business and I have talked to grain carriers worldwide, virtually everybody you can name, and I asked them the question very clearly and very directly, when are you going to start moving grain in very large bulk carriers? I mean, occasionally they move a 100-120 thousand tons lot. But typically, corn is moved in Panamax vessels, and most other grains are moved in smaller than Panamax worldwide. So, the bulk business is not rapidly going post-Panamax. The Panamax and Handy size ships remain the most popular in the world and they will remain so for many years to come. Now, that having been said, that does not mean you do not need a larger capability in Panama and greater capacity. We specifically, aside from this issue of ship size, specifically see a need for more capacity to handle more ships. And to be able to do our maintenance work, we need a reserved capacity that we do not have with this higher level of traffic



and that, in itself, creates these large cues, the backlogs, and the very costly delays that people have incurred and will increasingly incur if we do not do something about it. So, we do need additional capacity, but I do not think the driving factor is larger and larger ships. The driving factor is increasing trade and the need to have additional capacity to meet that increasing trade in whatever form it takes.

Mr. Wild:

I would like to come back very briefly on that. I do not disagree with what Richard said at all, really. But there are certain sections of the fleet which are definitely going post-Panamax now and I think that will continue.

Mr. Hackett:

Just a quick comment on the size, particularly the bulk fleet today. One has to remember where those ships are trading to and from, and if you look at the U.S. Gulf to Japan and China, the draft restrictions there are such that you are not going to see the introduction of a very large bulk fleet to carry the grains that are currently going through. The rest of the dry bulk world fleet that is post-Panamax is trading on routes that do not come near the Panama Canal. And from a distance point of view, they will probably never do so. So, one has to keep the focus of where the trade is coming from and going to.



My presentation this morning will cover future expansion plans of the Panama Canal Commission to continue providing reliable, efficient and safe Canal services to the Maritime world, not only through the year 2000, but well into the 21st century. Our future core mission continues to focus on providing quality service to our shipping customers. By quality of service we mean transiting vessels through the Canal, from ocean-to-ocean, within targeted average time of less than 24-hours. We measure this objective in terms of average Canal Waters Time (CWT). CWT is basically the by-product of how well the Canal matches system throughput with traffic demands, and is affected primarily by having adequate Canal capacity.

The present Canal operating capacity can service a traffic demand of approximately 38 vessels per day with CWT around 24 hours. As Canal traffic continues to increase above 38 ships per day, CWT will increase dramatically as is reflected by the red line on the graph. Considering that traffic demand is rapidly approaching the level of maximum capacity, the Canal is quickly losing its flexibility to respond to increases in vessel traffic without significantly affecting CWT.

Traffic demand determines the basic requirements of Canal operations and accounts for the expected volume of traffic, vessel size distribution, seasonal traffic patterns and daily arrival fluctuations, all factors that affect capacity. In Fiscal Year 1996, our highest traffic year, transits through the Canal averaged 37.5 ships per day, with seasonal averages reaching 41.5 ships per day and daily fluctuations as high as 61 per day. Deviations above the average have a significant impact on daily Canal capacity and CWT.

Another factor that impacts on Canal capacity is the need to accomplish proper maintenance to the infrastructure, which requires that occasionally one lane is taken out of service for several days. During periods of lane outages, capacity of the Canal is reduced and maximum daily transits are limited to about 28-32 vessels per day. Because the one-lane capacity of the Canal is less than current vessel arrivals, a backlog of waiting vessels forms very rapidly. Once both lanes are back in service, recuperation is slow because the maximum sustainable capacity of the Canal is marginally higher

than vessel arrivals. During high backlogs of waiting vessels, the Canal can achieve a maximum sustainable capacity of 42 vessels per day for limited periods.

Handling very large Panamax size ships also impacts on Canal capacity. Vessel size directly influences how fast ships move through the locks and navigational channels. Additionally, these large vessels require more resources, and for safety reasons, have significant transit restrictions.

Navigational safety is critical to operate the Canal competitively and efficiently. Due to safety considerations, many vessels have transit restrictions that limit their ability to meet other vessels in Gaillard Cut or are required to transit only during daylight hours. Although transit restrictions enhance navigational safety, they tend to restrain vessel scheduling; therefore, impacting on Canal operations and capacity.

Faced with steady long-term traffic growth and capacity constraints, the Panama Canal Commission recently approved an aggressive modernization program that will increase current Canal capacity by over 20 percent before the year 2005. About one billion dollars are being invested in this program, which includes five major projects. Let me quickly summarize these since they have been covered in more detail by earlier speakers.

1. The essence of the modernization program is the widening and straightening of Gaillard Cut. With the completion of this key project by the end of year 2002, elimination or relaxation of transit restrictions in the Cut will be possible, virtually allowing two-way traffic throughout the Canal system.

2. To support increasing numbers of Panamax vessels the tugboat fleet will be augmented from the existing 17 units to 24 by year 2002.

3. To achieve maximum system throughput at the locks, the existing locomotive fleet of 82 units will be increased by 26 units, for a total of 108 locomotives.

4. The ongoing modernization program also includes several projects to convert mechanical moving machinery to hydraulic systems at all locks. Additionally, the existing manual, electromechanical lock machinery controls at the three locks will be replaced with modern automatic systems.



These projects will improve capacity by increasing equipment reliability.

5. Finally, the existing Vessel Traffic Management System (VTMS) is being modernized with the application of state-of-the-art, proven technology for sharing information, monitoring vessels and resources, and automating systems that will support scheduling of vessels and resources.

With the implementation of this approved modernization program, by year 2003 the operating capacity of the waterway will be augmented from 38 to 43 vessels per day. Also, sustainable capacity will be increased from 42 to 48 vessels per day. The Canal then will be able to better manage the vessel backlogs resulting from maintenance outages. Of equal importance to improved quality of service will be the enhancements to navigational safety.

Notwithstanding these improvements, you earlier heard separate briefings on two independent forecast studies, both of which predict traffic levels exceeding the expected Canal operating capacity of 43 ships/day (15,700 ships/year) that will be obtained after the ongoing modernization program is implemented by 2005. Based on these projections, traffic demand could exceed the capacity of the Canal's existing infrastructure around the year 2010. To meet future traffic increases, major infrastructures must be added to the existing Panama Canal.

In preparation for servicing long-term traffic demand, the Panama Canal Commission has initiated several important actions to identify and determine the best alternative(s) for expanding the Panama Canal. Among key actions already underway are:

- How to further improve the productivity of the Canal's existing infrastructure. To this end, we are designing and developing a detailed computer simulation model of Canal operations, fully capable of incorporating infrastructure expansions and changes to operating procedures. The simulation model of the existing Canal will be completed early in 1998 with consultant support from Sabre Technology Solutions (SABRE). This model will enable the Commission to quickly evaluate different op-

tions of ship scheduling and resource utilization.

- This past May we hired ICF Kaiser International to develop a long-term traffic forecast of the Panama Canal through the year 2040. As presented earlier by Mr. Sabonge, this forecast indicates the need for additional capacity around 2010.

- Because forecasts beyond a 15-20 year time frame are nebulous, we recently contracted The Futures Group, a U.S. Consulting firm, to develop long-term planning scenarios for the purposes of understanding how the future could plausibly affect Canal expansion strategies. This firm held a scenario-based workshop in Panama on July 21-25. In addition to key PCC employees, participants from local and international maritime businesses were invited. Also participating were members of the U.S. Army Corps of Engineers (USACE) and representatives from ICF Kaiser International. Scenario-based planning is a technique for managing uncertainty, it is not prediction. Its planning horizon tends to be further out in time (when ambiguity is greater) than conventional forecasting approaches. The intention is not to predict what the market will be and build a master plan, but rather to ask what the future might hold and identify the actions that can be taken today that will sustain operations and development through a changing future. As a result, the technique tends to rely more on expert judgment, and less on quantitative forecasts such as market size or shape.

- In June we established a specialized study team of experts in international water transportation and marketing, intermodal rail and highway transportation, other cargo transportation systems, container port systems, and locks design and construction. The study team leader is Mr. John C. Gribar, from the USACE, who put together the team of representatives from the private sector, academic arena, USACE, PCC and the Blue Ribbon Engineering Committee. The team was tasked to conduct a Concepts Only Study that included a review of the previous Canal Alternative Studies (CAS)



and the recommendations made in September 1993 by the Commission for the Study of Alternatives to the Panama Canal. The Concepts study was to also identify potential methodologies and alternatives for shipping cargo across the isthmus of Panama that could achieve the same objectives, be in addition to the Canal system, and reduce investment costs.

This Concepts Study team, after evaluating a number of wide-range possibilities, identified several potential projects that need to be initiated to allow the Canal to meet the basic objectives for transporting cargo across the Isthmus. The results will provide Canal flexibility and growth potential well into the future. The report on the Concepts Study for Canal Alternatives is currently being finalized. However, I would like to share some of its preliminary findings:

- The alternative of a landbridge across the Isthmus represents some promise in providing service to container liner operators. However, very limited trade flows and commodity types could be reasonably accommodated by these supplemental systems. These systems should be considered as complementary to the Canal rather than to replace it or compete with it. It would be prudent to allow the private sector to undertake this development.
- Alternate transportation systems overland through double track rail service or a high volume road corridor are possible and modest in cost. These systems, however, would provide only minimal relief to Canal traffic volume.
- The existing pipeline in Chiriqui offers the greatest potential to affect Canal operations, as it did in the 1980's. However, projections for oil usage and trade flow do not indicate that this will occur.
- Major shipping routes have moved to using post-Panamax ships especially for container transport. Post-Panamax, and beyond-post-Panamax, continue to show an increase in the number of new ships being built and have the potential for significant use of the Canal. Indications are that a minimum deepening of the Canal to 50-feet (15.5m) would provide service for these large ships. This is a dramatic depar-

ture from the CAS where deepening of the Canal to 69 (21m) and 77 feet (24m) was indicated. Size of the locks should be 150 to 160-feet (46-50m) wide, 1200-feet (375m) in length and have a depth over the sills of 60-feet (18.5m). This will provide flexibility well into the future.

- A sea level Canal, or a separate lock type Canal at another location, are not feasible solutions for providing additional capacity. These alternatives are very costly and have major problems to overcome, such as environmental impacts. Supporting infrastructure and ports would also have to be developed.

- Expansion of the existing Canal is the logical alternative. This would be the overall cheapest alternative with minimal environmental impacts. Any new site selected should look into long range considerations and provide flexibility for future expansion. Innovative and non-traditional design and construction methods can decrease costs by 15-25 percent over traditional methods. Also, alternate alignments of the third set of locks closer to the existing Canal could potentially reduce construction cost considerably more.

- The major problem for Canal expansion is the availability of water to transit the projected number of ships in this water-based system. Triple lift locks use the least amount of water per lockage but are the most expensive to build. Double lift locks may be the most suitable for Canal use. Additional water requirements need to be defined and developed for the long term.

- Vertical lift systems that do not use water are available for handling ships, but the level of today's technology appears to be suited for only smaller ones. Such lift systems could potentially accommodate ships with beams of 80 feet (25m) or less, and lengths of less than 600-feet (185m), and could handle about 50-60 percent of current Canal traffic. This lift method would result in significant savings in water usage.

In essence, completing the on-going improvements to the existing waterway, providing a new



lock for post-Panamax ships, and a lift system for smaller ships would provide Canal flexibility now and well into the future.

It is obvious that major and important decisions need to be made soon, and corresponding cost-benefit and feasibility studies initiated. The Panama Canal Commission is currently moving aggressively to establish a fully staffed, permanent office to coordinate and plan all activities related with the development of Panama Canal long-term expansion programs. The studies conducted by ICF Kaiser International, The Futures Group, and that of the Concepts Only Study for Canal Alternatives will now serve as the basis for immediate follow-up actions. These actions include:

- a. Initiating investigations into the recommended alternatives for Canal expansion to meet the projected traffic forecasts,
- b. Canvassing Canal users as to projected-use by ship size and numbers into the future,
- c. Investigating possible lock sizes, and costs for development at the potential sites,
- d. Developing a master plan for Canal expansion that will serve well into the future,
- e. Performing in-depth analyses of non-water dependent ship lift systems to raise and lower the ships, and
- f. Determining maximum water availability at over 80 percent and over 90 percent reliability levels and the number of transits that can be supported with this water availability.

Finally, and the most important message that I want to leave with you, is that the Canal is committed to meet world maritime needs well into the next century.

• *Agustin Arias is Chief of the Canal Improvements Division, Panama Canal Commission*



## **THE CANAL IN THE 21<sup>st</sup> CENTURY:** Summary of the Question-and-Answer Period: Long-Term Canal Expansion Plans

### **Speaker:**

**Agustin Arias**

*Acting Chief, Canal Improvements Division, Office of Executive Planning, PCC*

### **Panelists:**

**Eric E. Miller**

*Senior Director, The Sabre Group*

**Peter Kennedy**

*Senior Consultant, The Futures Group, Inc.*

**John Gribar**

*Chief, Design Branch, US Army Corps of Engineers*

### **Moderators:**

**Christopher Hayman**

**H.E. Olga Bosquez Poveda**

Regarding the Panama Canal's expansion plans in the next century, a question was asked how you solve the water supply problem with the third set of locks. Agustin Arias stated that previous studies on Canal alternatives have mentioned the possibility of constructing additional dams to expand the water reservoir in the Canal. Accordingly, the building of new dams will be one of the first options to be considered in any long-term Canal expansion plan. The analysis and design of the third set of locks will also include a review of methods to minimize the quantity of water required for transiting vessels. The use of vertical lifts to move ships through the locks without water is an important element of the expansion plan that needs to be considered.

John Gribar added that the existing Canal locks have a system of intermediate miter gates that can be used to transit smaller vessels and save water. These gates are presently operated infrequently because there is an adequate supply of water. A similar system of intermediate gates will be considered for the third set of locks as a water saving alternative, as well as a lateral water transfer capability which allows water to be moved from one lane to the other.

A second question raised referred to the Canal's capacity of 38 ships per day, and what size and type of vessels were involved in the daily traffic mix. Mr. Arias mentioned that the Canal capacity figure of 38 ships per day is based on a Canal Waters Time of 24 hours and includes vessels of various sizes. He added that as a result of the ongoing modernization program the Canal's capacity will be increased to at least 43 vessels per day. While the increase in daily capacity is five ships, this represents a 20 percent increase in total cargo since the additional capacity is expected to be primarily in Panamax-size vessels.

Another panelist noted that as capacity increases beyond 38 ships a day, scheduling the additional traffic and planning for that growth will present the Canal with new challenges. Two-way traffic in Gaillard Cut, particularly during periods of heavy fog, will require effective ship





management and scheduling techniques. Nevertheless, Commission management is very proactive, and projects such as the Vessel Traffic Management System (VTMS) and simulation modeling will provide the Canal with the appropriate tools to respond to these challenging capacity issues.

A final question raised inquired if any consideration had been given to alternatives other than the post-Panamax third set of locks, such as a smaller set of locks designed to accommodate the transit of smaller vessels which comprise some 60 percent of Canal traffic and use less water. Mr. Gribar mentioned that the statistics for the past 17 years used in the concept study indicated that 50-60 percent of the Canal traffic during that period were vessels less than 80 feet in beam and under 600 feet in length. Transit of these vessels could be accomplished in two ways which would save water. Operation of the intermediate gates in the existing locks is one alternative, and the other is a mechanically-operated vertical lift ship system that does not require water. Since these alternatives would be used to transit about one-half of the total vessels, they would essentially save the water necessary to transit vessels through one lane of the locks.



**THE CANAL IN THE 21st CENTURY: Introductory Address by the Administrator of the Panama Canal Commission, The Honorable ALBERTO ALEMAN ZUBIETA**

Good morning. In the first place, I wish to thank all those present for accepting our invitation and taking time off their busy schedules to participate in this Universal Congress on the Panama Canal. Your attendance to this event is patent proof of your interest in ensuring that the Canal will continue to be a reliable, efficient, safe, and economic service in the 21st century.

For us this Congress is of a unique importance as it has provided us the opportunity for the first time in its history to gather in a single forum the users, customers and other interested parties to discuss the future of the interoceanic waterway.

What makes this discussion even more relevant to the future of the waterway at this time is that we all find ourselves, including the users and customers, at a historic juncture because of the new world economic order. In this new order, countries as well as companies are doing away with their trade barriers and launching an open competition by forming blocs and strategic alliances to market their products and services in the most efficient way possible.

Therefore, this is a meeting that is held "just in time," as we say in transportation logistics, because all those present here are aware of the implications the forecast boom in world trade will have for international maritime shipping requirements, and therefore, for the need to have a reliable, efficient, and safe interoceanic route.

In yesterday's and today's presentations we have tried to provide a detailed account of the progress of the transition of the Canal to Panama being achieved jointly with those who will be in charge of the Canal administration, of the short and long-range investment programs we are implementing, and of our long-range expansion plans.

Twenty years ago, the signature of the Torrijos-Carter Treaty started an irreversible process for the transfer of the interoceanic waterway to Panama. As stated yesterday by Dr. Jorge Ritter and Joe Reeder, the Chairman of the Panama Canal Commission's Board of Directors, both countries and the Canal administration are committed to making this transition totally smooth for everyone.

Despite this, the transition period is a period of change and adjustment to new realities. It is

logical that there be questions, concerns, and fear on the part of the employees, customers, users, and governments. These concerns are reflected in the examples cited by my friend Juan Kelly of ICS, pointing out the shippers' concerns that the Canal might become a "cash cow," meaning that Panama may drain its resources, that partisan politics may control the Canal, that there may be no continuity, or that second-rate personnel may be hired.

We believe we have shown with facts and not only words everything we are doing to dispel these concerns. We also hope that the information we have provided has clarified many of your questions regarding the transfer of the Canal to Panamanian hands, our development plans, and the magnitude and complexity of the work we have been doing and will still be facing in the future.

In the Canal we see this transition period as a period of opportunity to improve our product and services. The process of approval of the Canal regulations will allow us to review and improve them for the sake of our customers and users. We should not be afraid of change; it is a healthy process and a permanent one, because an organization such as the Canal must stay ahead of the changes and needs of the shipping community it serves.

In his presentation, Dr. Ritter explained the legal framework for the operation of the Canal under Panama's jurisdiction, and Joe Reeder, the Chairman of the Panama Canal Commission's Board of Directors spoke about the progress in the waterway's process of transition to a Panamanian administration and how it is carried out as one team with one mission. These presentations actually show that the process is advancing in an orderly fashion, with an awareness of the tremendous responsibility it involves.

Allow me to discuss mainly the concepts behind our visualization of the mission of the Canal in the 21st century and its future role as an integral part of the Republic of Panama, and the type of relationship we hope to have with the customers and users of the Canal.

A fundamental aspect is the neutrality of the Canal. In this regard, the Treaty on the Permanent Neutrality of the Canal that will continue in force after the year 1999, the Constitution of the Republic, and the organic law of the Panama Canal Au-



thority clearly stipulate that "the Canal shall remain open to the peaceful and uninterrupted transit of vessels of all nations in terms of full equality, so that there will be no discrimination against any nation or its citizens with regard to the conditions or costs of transits."

Another equally important aspect is the competitiveness of the Canal. We know that the Panama Canal is an integral part of the world's maritime transportation system, and should therefore be capable of competing with other routes or modes. The Panama Canal does not have a monopoly over the east/west routes. Aware of this, we seek all possible efficiencies in order to serve an increasingly demanding clientele that requires new and better services. Therefore, the Canal should remain efficient, reliable and safe and provide its services at a cost that is adequate for the market it serves.

It is this concept of competition in a global trade what will effectively guarantee that the Canal will keep its position and the advantages it offers to the shipping world, and will have a fair, equitable, and reasonable tolls policy as expected by the customers and users of this international shipping route.

At the same time, we need to have an adequate financial policy in order to maintain the efficiency and productivity required of the waterway, with its own administrative and financial autonomy, and not as part of the general state funding.

This policy is clearly defined in the Constitution and the organic law of the Panama Canal Authority, as a commitment on the part of the Republic of Panama to keep the Canal operating with full administrative and financial autonomy. Therefore, I wish to reiterate that the Canal will continue to have all the necessary resources for its operation, maintenance, and capital improvements as required.

The fact that Canal resources will be devoted to its operation and improvements after 1999 is shown by the capital investment programs at a cost of nearly one billion dollars that have been budgeted and are fully under way; we expect them to be completed by the year 2004.

In these first two days of Congress sessions you have learned about:

- The modern Canal maintenance plans we are carrying out, and those we will be conducting in the future. Also, that the Panama Canal is an organization enormously oriented toward maintenance.
- Details of the widening of Gaillard Cut, which has been moved ahead 12 years to meet current and projected traffic demands.
- The modernization of the Canal locks with new technology and equipment in order to guarantee a more efficient, safe, and easy maintenance of the locks, reducing the required maintenance time and increasing the waterway's reliability.
- The commitment to improve our equipment with the acquisition of new and more modern locomotives, marine support equipment and towboats, all of this to guarantee an uninterrupted and efficient service to the vessels we serve.
- The high level of the training of our work force and the plans to improve it even more, as well as the safety measures for the operation of the waterway.
- The importance of our watershed, which supplies the Canal's most important natural resource. We have described the specific plans we have to maintain and conserve water, which is essential for the operation of the Canal, the environment and the population in the area. This issue is so important that the Panama Canal Authority has been granted by the Constitution of the Republic of Panama the necessary authority to protect, maintain, and conserve all water resources within the Canal watershed.
- The very modern marine traffic and resources control system we are implementing, which although still in its prototype stage, is the most modern system in the world. It will allow us a better management of our resources, will make us more productive, and above all will make the Canal one of the safest routes of the world to navigate.

All of this is an indication that the Canal is not being administered just to take it up to the year 2000, but that action is being taken for the Canal to be more efficient, safe, and reliable well beyond the year 2000 because this is a fully operational and dynamic organization that provides an uninterrupted service to its customers and users.

The modernization process is continuous and requires, among other things, a change in the current corporate culture to take it from a government agency operating on a breakeven basis, to a flexible corporation with the ability to quickly adapt itself to market requirements, one that optimizes its resources, maximizes its development opportunities, and responds to the needs of its customers. This is the model after which we are patterning the structure of the Canal agency of the 21st century.

As part of this process, we have initiated the establishment of control measures or benchmarks at the quality and excellence levels found in the organizational, administrative, and financial processes of multinational corporations, which have proven to be more efficient and less burdensome than those of public administration.

All these aspects we have described are important for the development and structuring of the Canal enterprise of the 21st century, and will be developed over the short and medium range. I will now explain the relatively short range plans we have to guarantee the viability of the Canal over the long range.

I wish to refer to the last few briefings this morning. As you may recall, the traffic forecasts provided by the two independent consultant show that even with the improvements under way at the present time, the Canal will reach its maximum operating capacity around the year 2010.

We are convinced that it is the Canal agency, which is now the Panama Canal Commission and will be the Panama Canal Authority after the year 2000, the one that should determine the steps required for its expansion and improvement. This is an integral, vital factor in managing the Canal as required by the Constitution, with full independence and autonomy.

Demand projections are a tool for decision-making. However, for a decision of the magnitude

we are talking about we require other tools. This is why, as explained, we are conducting two studies in addition to demand projections, which are the analysis of scenarios, and a general engineering study. These three studies will assist us in minimizing risks and developing an adequate strategy for a project of the importance of the third set of locks.

The findings require a speedy analysis process to complete as promptly as possible the engineering phase and the environmental impact and water requirement studies in order to have a better idea of the cost of the project and its financial feasibility.

We have established an office in the Canal administration to develop this important project and provide as soon as possible a plan for the construction, financing, and implementation of the project for a third set of locks. It will guarantee that the Canal will not only continue to provide an efficient service, but will be safer and more reliable as required by the shipping community we serve. Gentlemen shippers, I assure you that ships now being built known as post-Panamax will sooner than later redefine the term Panamax, because they will also be able to use this route.

We are hoping this forum will serve to establish a new relationship between the Canal and its users. Article 19 of the organic law of the Panama Canal Authority requires an advisory board in which Panamanians as well as foreigners can participate. As Dr. Ritter pointed out, we believe this initiative will allow us to keep a formal and frequent communication with the major representatives of the shipping industry.

The Canal administration recognizes that there is no better relationship between enterprises that a direct supplier/user one. For this reason we have initiated an extensive program of visits to our users to meet each and every one of you, in order to reiterate to you that the Canal is here to serve you and that our doors are open to your comments and suggestions that may assist us in improving our service to you.

As I said at the beginning of this talk, we are just in time to do this because all of us here are aware of the implications of the forecast world



trade boom for international shipping, and thus for the need of having a competitive interoceanic route.

You may rest assured that we are already developing the Canal of the 21st century, and that it will be safer, more reliable, and more modern. This will make the Panama route your best alternative to move your products, as it will provide benefits to our customers and users as well as to its only shareholder, the Republic of Panama.

The geographic area of the Panama Canal is unique in the world as it has, in addition to the Canal, what I consider as the only port of the world straddling two oceans. The privatization of the ports on the Atlantic and Pacific entrances to the Canal is creating a fast development of containerized cargo. This, in conjunction with the privatization of the railroad and its future modernization as well as the revamping of the transisthmian road system, are just the preamble of Panama's transformation into an important international maritime services center, and will make the Canal route ever more significant, with a greater aggregate value for you, its users.

I wish to state clearly that in Panama we all recognize that the Canal is the country's main enterprise. As President Ernesto Perez Balladares said in his opening speech, in the case of the Panama Canal, we Panamanians know how to rise above our differences.

Prior to closing, I wish to recognize all the generations of Panamanians and foreigners who devoted their lives to the construction and the operation of the Canal, especially those who with their support and decided commitment continue to facilitate the peaceful and smooth transfer of the interoceanic waterway to the Republic of Panama.

We are aware that we are carrying on our shoulders the weight of all these generations, and you may rest assured that we will do everything possible to make Panama grow and develop as the most important node in the transportation chain in the Americas and this hemisphere.

• *The Honorable Alberto Aleman Zubieta*  
*is Administrator of the Panama Canal Commission*



**THE CANAL IN THE 21st CENTURY: Summary of the Question-and-Answer Period:**  
Following the Address of the The Honorable Alberto Aleman Zubieta

**Moderators:**

**Christopher Hayman**

**H.E. Olga Bosquez Poveda**

Following the address by Alberto Aleman Zubieta, Administrator of the Panama Canal Commission, several questions were raised. The first question was posed by the moderator, Christopher Hayman, since it had been the subject of considerable informal discussion at previous events of the Congress. Mr. Hayman asked the Administrator if he would share with the participants his ideas and feelings about the value of establishing an ongoing dialogue between the Panama Canal Commission and its users, and, also, how could this be implemented. Mr. Aleman stated that the Commission considered dialogue between the Canal and its users to be extremely important. He did not know of any successful enterprises that did not converse with their clients. Mr. Aleman said that since the Canal was such an important route for world maritime transportation, the Commission must have a permanent and continuing dialogue with its customers and users. He indicated that Article 19 of the organic law is emphatic in stating that the Board of Directors of the Panama Canal Authority should establish a consultative committee which could include Panamanian members, as well as members from other countries. Regarding this issue, Mr. Aleman said that in a recent meeting in London, he had asked Mr. William O'Neil, Secretary General of the International Maritime Organization, if he had an interest in participating in a Panama Canal consultative committee. Mr. O'Neil responded a short time later stating that it would be a great pleasure to be part of such an organization. The Administrator remarked that the more information which is available from the users will assist the Commission in making decisions which are much more practical and in tune with the needs of the maritime industry.

Bruce Farthing, Director of Intercargo, asked what thoughts the Canal Commission had for consulting cargo interests about their future plans considering the importance of the Canal to them. In other words, not just to extend the consultation process to the users in a direct sense, i.e. shipowners and operators, but go beyond that to talk to the owners of the cargo that is being transported. The Administrator responded that Panama Canal Commission management understands that there are users and customers. To the Commission, the users are the ships that transit the waterway each day, while the customers are the countries and the producers who are owners of the cargo and who benefit by using the Panama Canal.

Another participant asked what are the steps which will follow the traffic projections and completion of the other third locks studies. How will the financial arrangements be managed? Who will be in charge of this work, the Panama Canal Commission or the Panama Canal Authority? Mr. Aleman said he believed that the presentation by Mr. Arias covered the steps that need to be followed. Once these steps have been taken, including a more exact definition of the risks, an analysis of the anticipated cargo, the type and size of locks that should be constructed, location and environmental impact studies, then the cost of construction can be determined. After the costs have been analyzed, the financial evaluation can be made. When everything is prepared, and the viability is known, the Commission will go out on the market just as any other commercial venture. The Commission will go to the financial markets to look for and structure the financing, depending upon the magnitude of the estimated income and related expenses. The Administrator considers that the Panama Canal Commission would have the initial responsibility for the project and the Panama Canal Authority would assume responsibility after the year 2000. According to Mr. Aleman, the Panama Canal is an ongoing business and strategic decisions regarding the steps which the Panama Canal should follow



are not limited to the Commission nor the Canal Authority, but instead are part of the sequence of events which occur daily at the waterway, just as the transiting of vessels takes place each day.

A Panama Canal Commission union member said that at a previous session, a Commission official mentioned that one of the means of cutting Canal costs could be by reducing personnel. What is the new Panama Canal Authority's view on that issue? The Administrator mentioned that he was not aware of that particular statement; however, the Commission should not think of reducing personnel, but rather operating in a businesslike manner and raising the level of productivity and efficiency. Increased efficiency is not achieved by eliminating personnel.

Mr. Hayman remarked that there had been considerable discussion at the conference about the importance of the container sector as the generator of additional traffic at the Canal, the impact of the post-Panamax container ships, and the change in tariffs for containers on deck. He asked if Mr. Aleman could provide a little background on the decision to charge for on-deck containers and to discuss this in the context of the recent toll changes. The Administrator stated that the decision to charge for on-deck cargo was designed to make the tolls structure more equitable. This is not a new idea and the Commission has been considering this concept for the past several years, since the new configuration of container vessels provides for much of their cargo to be carried on deck. The adjustment is a change in the distribution of tolls, not a charge based on the exact volume of the containers, but one that brings the tariffs for vessels designed to carry on-deck cargo more in line with the other Canal users. The Administrator feels that the change in the Canal toll structure for on-deck cargo is just and equitable.

Mr. Hayman mentioned that the cruise lines are becoming more frequent users of the Canal and this trend could accelerate as the transfer of the waterway to Panama at the end of the century approaches. He asked if the Administrator would comment on how the relationship between the Canal and the cruise industry is developing, especially in light of discussions about generating more cruise tourism and, perhaps, the construction of a cruise terminal in Panama. Mr. Aleman responded that the cruise business is extremely important to the Panama Canal and for tourism in Panama. The Canal is making substantial investments to improve the visitor's center in Miraflores so that in the year 1999, there will be a new, modern facility which will provide the cruise industry with a better place for its passengers to visit the waterway. In addition, the Commission is working closely with the International Council of Cruise Lines (ICCL) to identify ways in which the Canal can improve the services offered to the cruise industry. The Commission is also exploring the concept of allowing cruise vessels to transit Gatun Locks and anchor in Gatun Lake, so the passengers can disembark and visit the Colon Free Zone, Gatun Lake and other areas which still need to be developed. Mr. Aleman added that the Canal has an interesting history with many unique places for tourists to visit. The Canal has a great deal to offer tourism development in Panama, such as supporting the possible location of cruise terminals in Colon and Fort Amador. By offering first class service and facilities, the Canal will assist development of the cruise industry, the waterway itself, and the entire Republic of Panama.

Responding to a question about what the Panama Canal Commission is doing to coordinate with Panama in the preparation of the new regulations that will govern the waterway, the Administrator mentioned that the Commission has been working very closely with the Transition Commission for several years and one of the principal projects in the transition plan is the development of the regulations. This is an excellent opportunity to take the existing regulations and revise, and improve them.



Mr. Hayman asked the Administrator if he could describe the processes that will occur before a final decision is made on the third locks project. How will this work in terms of the various agencies involved, which agency will head up the project, and what time frame is involved. Mr. Aleman said that the Commission has initiated a revision of the previous third locks studies to update them in light of current changes in the maritime industry. These studies have been completed and the Commission is now in the second phase of the analyses. The Commission is studying the dimensions of the proposed locks, what depth and width should they be. The Canal is considering the possibility of a depth of 60 feet versus the 72.5 feet proposed in the original studies. The widening of Gaillard Cut is being accomplished, which is an integral part of this project; however, there should be no need for further deepening of the channel. Regarding water, there is a watershed which has the potential for not only producing the necessary water, but also energy. In addition, there is a study concerning the alternative of using a synchrolift to transit a large number of small vessels without the requirement for water. The Administrator stressed that these studies will continue and various alternatives will be identified. More importantly, however, is that the third set of locks will be developed to assure the world shipping industry that the Panama Canal continues to be an efficient, secure and viable transportation route. The way the Canal will compete in the future will be through increased confidence in efficient, secure transit service. Canal customers and users must be guaranteed that there will not be delays due to backlogs or from transiting a waterway that is near maximum capacity. This assurance is very important. Accordingly, the decision concerning the third set of locks and its dimensions is possibly the next step that needs to be defined as well as the resources required to make this project viable.

Ambassador Bosquez remarked that the Administrator had recently visited London and spoken about the importance of safety for transiting vessels and the operation and efficiency of the Canal. He asked if the Administrator would comment on the application of international standards of safety at the waterway. Mr. Aleman said that the Commission had recently made an inventory of the security measures to determine how they might be improved. Although the Canal is considered to be a very safe waterway, once the recommendations and new technology of the Volpe study are implemented, the safety of transiting vessels will be substantially enhanced. In the future, the Commission will also be very strict on vessels that are not in the proper condition to transit the Canal and create a safety hazard to other transiting vessels as well as to the waterway.

Mr. Benigno Sotomayor, Ecuadorian Minister of Foreign Commerce, stated that the west coast of South America represents about 20 percent of the tonnage passing through the Canal. He applauded the establishment of a consultative committee which includes Canal users as members, and inquired when it would be formed and how would the members be selected. The Administrator said that these decisions were the responsibility of the Board of Directors of the Panama Canal Authority. Presently, the members are named by the President and the Cabinet, and are subsequently presented to the National Assembly for approval. He was certain, however, that this would be one of the first actions taken by the Board of Directors when the committee is formally established, especially after the positive reaction shown by the Canal users at this Congress.

Mr. Jonathan Athnos of the Armada Group asked the Administrator to clarify the actual need, if any, today or in the future, for the pre-booking system. Mr. Aleman remarked that he hoped the reservation system would eventually disappear once the third set of locks were constructed and the Canal had sufficient capacity so vessels would not experience the delays which occur today. The existence of the booking system is to satisfy those sectors of world shipping that require expeditious transit and are willing to pay for that service. The cruise industry, for example, needs assurance that





passenger vessels can transit during daylight hours on the day of arrival. The various sectors of the maritime industry have different requirements and the reservation system is an attempt by the Canal to be receptive to the needs of the shipping community. The system does not satisfy everyone, but it attempts to meet the needs of the great majority, and Mr. Aleman believes that goal is successfully being accomplished.



*I*NVESTMENT *O*PPORTUNITIES,



*T*RANSHIPMENT AND *C*RUISE *T*OURISM

## INVESTMENT OPPORTUNITIES, TRANSHIPMENT AND CRUISE TOURISM:

Investment Opportunities in the Reverted Areas of Panama by Dr. NICOLAS ARDITO BARLLETA

The next ten years are perhaps the most important in the history of Panama. We will assume the responsibility for the operation of the Canal and at the same time we will gradually incorporate the former Canal Zone, known today as the Interoceanic Region, into our national development. This region totals approximately 94,000 hectares, a little more than four times the island of Hong Kong. Within this area there are 7,000 buildings and structures, theaters, schools, hospitals, and golf courses. The Interoceanic Region Authority or Autoridad de la Región Interoceánica (ARI) is the government entity charged with the responsibility for receiving and privatizing these assets, and the challenge to Panama is to integrate them into our national development. I am here today to inform you about what we are doing and to invite you to participate in the effort to utilize these so called "reverted" areas and assets, primarily in productive activities.

The incorporation of the former Canal Zone into the development of the country is important to all Panamanians. In fact, it is a State matter and of national interest. It is an effort that involves the entire country: the administration of President Perez Balladares, the political parties, and the civilian society. All of us at the ARI who are responsible for assisting in achieving this goal, are very grateful for the support provided by the government and by all areas of national life. We are convinced that with the incorporation of these areas into our development, great opportunities will open for growth, generation of employment, increased ties between Panama and the international economy, and above all, it will allow us to contribute to the commercial integration process of the Western hemisphere.

My presentation today is a combined report on the progress, the vision and the development strategy for the reverted areas.

For the benefit of the delegates invited from abroad, before speaking on specific issues regarding the projects that are underway and the opportunities that abound in the interoceanic region, allow me to begin with a brief summary of the framework within which we operate and from which we promote the best utilization of the reverted areas.

Panama has a small economy, the principal component of which are services. The services industry also generates 75 percent of our exports. The importance of the interoceanic region is evident if we consider that 80 percent of the gross internal product of the country, and 75 percent of exportations are Canal related and that 60 percent of the population resides in the area surrounding the Canal. It is expected that within 20 years, 80 percent of the Panamanian population will reside in this area.

The key elements to the service industry that play very important roles in the strategic development of the reverted areas are: the transportation services, comprised of the Canal; the ports at either end of the Canal that have been recently privatized under contract with Hutchison International Terminal - HIT of Hong Kong -- the railroad, the privatization of which is underway with Kansas City Rail; the construction of the container ports, which I will speak more on later; the transisthmian highway; and the complementary services: the Colon Free Zone which, I might remind you, is the largest in the western hemisphere, with a gross activity of over \$10 million annually; the banking center which is enjoying a high level of activity with 110 banks from all over the world and over \$33 billion in assets.

As part of the development strategy of the reverted areas, we now seek to add to this combination of services: maritime, tourism, and industrial activities, the City of Knowledge, as well as commerce and communications, in order to create a greater conglomerate of service activities on the banks of the Canal that are profitable for investors and generate exports and employment for Panama, thereby incorporating us into the world economy.

It is within this context that we promote the improvement of the Panama Canal and the development of the reverted areas. Our strategy includes: the modernization of the operation of the Canal, the development of unexplored opportunities for Canal transits and the gradual incorporation of the reverted areas into the national development.

Regarding the Canal, you have already heard from its Administrator about the challenges facing



it for the coming century. It is important to point out that whatever happens to the Canal in the coming years will greatly influence the development of the reverted areas, particularly as pertains to our strategy of maritime development, as I will explain in a few moments. Therefore, we are working very closely with the Panama Canal Commission as well as with other pertinent entities concerned with maritime matters, the National Port Authority and the National Maritime Commission.

The responsibility for operating the Canal will continue under the Canal Authority which will replace the current United States Federal government agency once the operation is transferred to Panamanian hands at noon on December 31, 1999. The responsibility for incorporating the former Canal Zone into the national development, that is, the reverted assets except for the Canal itself, becomes the responsibility of the Interoceanic Region Authority.

Our objective is to attract investments to the reverted areas that will generate and diversify exportations and employment, reduce the housing deficit of the country and utilize the raw material of the country. And in doing so, of course, to provide profitable business opportunities for the investors who establish themselves in Panama.

Ever since I had the privilege of becoming the General Administrator of the ARI, we have advanced along different paths. Among our achievements are the preparation, finalization and formal adoption of the plans for utilization of the lands and for the incorporation of the military bases. In addition, we have instituted numerous commercial, industrial and tourism projects, the sale of housing and other projects of a social nature. Likewise, we have made considerable progress towards regulating the properties, which is an arduous task that must be done before placing them on the market.

I would now like to present to you the plans for land utilization, which are the guides to the activities in the reverted areas. The studies that the plans are based on were conducted by the United States consortium of Nathan Associates together with a Panamanian firm, and they have been unanimously approved by our Legislative Assem-

bly with the support of all political parties, the national government and the civilian society.

The first is the Regional Plan, which includes the Panama Canal watershed and the second is the General Utilization Plan which, based on the first, incorporated the former Canal Zone into the development of the country. The Regional Plan constitutes the most comprehensive and current study of the resources, the opportunities and the limitations that Panama must be aware of in order to utilize the reverted areas and the watershed.

Based on the information and awareness of those opportunities and limitations, the General Utilization Plan was prepared, which in fact is a territorial blueprint for maximizing the incorporation of these areas into the economic, social and urban development of Panama, protecting the environment and protecting the Panama Canal.

On the map of the Regional Plan you can see the interoceanic region, divided into three major sectors: the sectors surrounding the City of Colon on the Atlantic Ocean and Panama City on the Pacific Ocean, where the greatest amount of reverted infrastructure is concentrated; and the central sector that includes Gatun Lake and the Watershed that covers much more territory in an east west direction and is the setting for one of the richest biodiversities of the western hemisphere. From ocean to ocean the Canal is 80 kilometers long.

The General Plan establishes in detail the optimum utilization of the lands for the different sectors that we are promoting based on a comprehensive regulation with the necessary flexibility for adapting to the changes in the development of the country. The Regional Plan concentrates primarily in achieving a sustainable development strategy for the entire Canal watershed.

These plans have been prepared taking into account five major categories of criteria:

Economical: to generate investments, production, exports and employment

Social: for the participation of the Panamanian people in the benefits produced by the utilization of the reverted areas

Urban: to functionally and harmoniously incorporate the areas and surrounding installations into the two terminal cities



Environmental: to preserve the watershed and its biodiversity

Canal: to protect the operation and future expansion of the Canal

The plans are consistent with the strategy for incorporation into the national and international economic activity I alluded to earlier.

Based on all of this work and on the promotion being conducted at the local and international levels, we are able to state that to date there are investment commitments over the next five years of \$800 million dollars, which is a good indication and which allows us to confidently state that the incorporation and utilization process has begun and is underway, that the opportunities are clearly established and, therefore, we invite more investors to become informed and to join us in the development of these opportunities.

Those opportunities are concentrated mainly in the sectors we believe have the greatest potential for development in the exceptional geographic area surrounding the Canal: the maritime sector, the industrial sector, the tourism sector and the commercial and communications sector.

As I point out the projects that have already been established in the different sectors, I must emphasize the under utilization thus far of the areas along the banks of the Canal. For 80 years this area was off limits to Panamanians and off limits to commercial activities. To date, the United States has utilized the interoceanic region as a strategic site, a security zone, and the Canal has only served as a means of transportation. No port area in the world today has the opportunities that we have in Panama, even while protecting the watershed.

### **Maritime Sector**

The opportunities in the maritime sector are evident in view of the over 14,000 annual transits through the Canal, with over 190 million tons of cargo and almost 700,000 passengers and crew members. When all they do is pay a toll and purchase 15 percent of their fuel, in spite of a waiting period of 18 hours for Canal transit, we can easily reach the conclusion that we are under utilizing this facility. Therefore the first item of the strategy is to improve the services to the vessels that use the Canal, from fuel to repair and maintenance of

vessels and containers and the supply of food and supplies. The first significant example in the reverted areas is the Saudi-US company, Ali Reza-Mobil Oil. This company is reconditioning the Arraijan Tank Farm that has a capacity of 1.2 million barrels of fuel, and they will invest \$25 million more to improve the installations. There is a great deal of potential for the development of profitable business utilizing the "down time" during which vessels must wait, and for improving the exportation of services from Panama through the operation of the Canal.

The second item, and this is a very important step that we have already taken in the maritime strategy for utilizing the reverted areas, is the privatization of the operation and administration of the terminal ports of Balboa and Cristobal. With an investment estimated at \$170 million dollars over the next five years, Hutchison International Terminal will contribute to the diversification of the port services, improvement of their productivity and a decrease in operating costs. Likewise, the renovation of the interoceanic railroad, with an investment by Kansas City Rail of close to \$40 million dollars will create an interesting synergy between the two ports at the Canal terminals, and will essentially convert them into one port on two oceans 80 kilometers apart, serving international commerce.

In addition, other significant investments are the container ports, such as Moinsa, which with an initial investment of \$150 million and another \$25 million in process, is already operating a container port on the Atlantic. Also the Evergreen container port which is already under construction, with an investment of \$100 million.

Therefore, with the development of container ports on the Atlantic and on the Pacific in the Balboa area, agreements will be reached between the principal world wide shipping companies and the port operators for increasing the movement and transshipment of containers through Panama to North America, Central America, the Caribbean and South America. By the end of the century we may have between 1 and 1.5 million containers annually being transshipped through Panama, which will make the country the principal container transshipment center of Latin America, adding



value to the economy, opening the doors to other activities and complementing the operation of the Canal.

A fourth area for potential development stems from the information that almost 20 percent of vessels transiting the Canal do so in ballast, in other words empty. Panama could become an important link in the international transportation chain, including storage and distribution.

### **Industrial Sector**

The second sector where we see significant opportunities for development of the reverted areas is the industrial sector. The potential exists in Panama, although we have not developed it as have our neighbors: in the Dominican Republic there are 14 industrial areas that employ 140,000 people and export \$1.2 million in merchandise; Costa Rica has generated 60,000 jobs; Jamaica 90,000; Honduras almost 40,000. We can do the same here from a similar position.

Investments in the industrial sector are concentrated in processing zones for exportation. The main one is being developed with Taiwanese investors on the Atlantic side in Davis, where there are already investment commitments of \$20 millions, installations nearing completion, two companies already operating and 7 others in the process of being installed. We are also negotiating with a Korean consortium, to be located in Cardenas, on the Pacific side near the Canal. Another industrial project, Petroport, has already invested \$5 million in a liquid gas installation on Telfers Island on the Atlantic side.

With the development of the maritime and industrial sectors, our aim is to establish a niche in the market as a result of the combined effect of more efficient and economic ports, 14,000 Canal transits, the transshipment of approximately 1 million containers annually, the integration of nearby airports, in addition to the 1,300 companies operating in the Colon Free Zone with ties and clients throughout Latin America and the credit facilities provided by the international banking center. The combined effect of all of this could provide an excellent platform for the exportation of products that are manufactured and finished in the industrial areas of Panama to the regional markets. It is

this synergy between various important sectors of the national economy that we are trying to strengthen over the next ten years in order to achieve the objectives mentioned previously.

### **Tourism Sector**

Another area of opportunity is the tourism sector. Here we have also lagged behind our neighbors who have developed this clean and rapid growth industry. Nevertheless, we have many of the same, and in some cases better, attractions. Again I mention the examples of the Dominican Republic, Jamaica, Puerto Rico, Guatemala, Mexico and our immediate neighbor, Costa Rica, who generates \$600 million a year in tourism, almost equaling Panama's income from the operation of the Canal.

To date we have finalized investment agreements for Amador on the Pacific side as well as for other areas, for approximately \$350 million, involving tourism plans prepared for Amador and for Gamboa, complementing the plans which I have already mentioned. The Master Plan for the development of Amador as a tourist center includes the development of hotels, commercial establishments and a port for cruise ships.

Two hundred cruise ships pass through the Panama Canal every year, but they do not stop in Panama. The idea is to create an environment that will make it attractive for the over 200,000 tourists aboard these cruise ships to come ashore on the Pacific side, in Amador, as well on the Caribbean side, in Cristobal, and to take advantage of the recreational and commercial areas that are established here. The construction of the infrastructure and subsequently the hotels and commercial development in Amador should begin in the next few months.

Other types of tourism being promoted within the national development strategy for this sector is ecological tourism. We believe that the potential for ecotourism in the interoceanic region is significant for one principal reason: besides supporting the transit of vessels through the Canal, the watershed is the basis of one of the richest biodiversities in the hemisphere. Panama has a great variety of birds, with over 900 species, which is considerable given the surface area of the coun-



try. In the annual survey conducted by the Audubon Society, over 350 species have been observed in one day within the interoceanic region. In addition, there exist 1,200 different types of orchids and locations that have as many as 184 variety of trees per hectare. But the most significant feature is that this biodiversity can be enjoyed without having to travel great distances.

For example, the town of Gamboa located in the middle of the Canal in Gatun Lake and on the Chagres River is 35 kilometers from Panama or from Colon. Together with the Panamanian Institute of Tourism we are working on a project to make Gamboa an ecotourism village for the American continent. This will permit the development of commercial activities while at the same time conserving the watershed and the biodiversity of the area. At present we are negotiating with two corporate groups for the construction of ecotourism hotels in that region in the center of the Panama Canal.

On the Atlantic side there is also great potential for ecotourism. In Espinar, on Gatun Lake, is the former School of the Americas. With an investment of \$20 million over the next two and a half years by a Spanish-Mexican consortium, this structure will be converted into a hotel serving the city of Colon and offering opportunities for ecological tourism due to the natural beauty of the area.

### **Commerce and Communications**

The development of commerce in the reverted areas has a dual function: internally, it will incorporate important commercial centers into the terminal cities, complementing the housing developments and responding to the expected growth of the population; externally, it will increase the Free Zone type of activity, reaffirming Panama's outstanding position as a merchandise reexportation center for the hemisphere.

In this sector, the principal investment is the commercial development of 40 hectares in Albrook, which reverts next October 1. There are also small projects, such as gas stations, theaters, bowling alleys, tourist centers, office complexes, all distributed within the interoceanic region.

In the area of communications, the intention is to integrate the development of air, land, rail-

road and port infrastructure into an intermodal concept that facilitates the logistics of production and distribution of manufacturing businesses. This system would be governed by the most advanced technologies for telephone, electronic transfer of data and the information highway.

### **Other Projects**

Among the other projects, we have negotiated the privatization of Gorgas Hospital, with an investment of \$15 million to convert it into a specialized regional institution with a psychiatric center, a drug rehabilitation clinic, an oncology center, among others. We also have important investments in reforestation, especially on the West Bank of the Canal, which contributes to the protection of the watershed, avoids the usurpation of land and generates jobs. And in addition, constitutes a profitable business for private investors.

On the other hand, we have social projects that we have granted as concessions to government and educational non profit organizations.

In conclusion, the ARI has received over 300 applications for land and property for a diversity of social and productive projects and we have approximately 140 projects being processed in the different sectors mentioned.

### **City of Knowledge**

Another opportunity for development is the one designated by President Perez Balladares as the City of Knowledge, an education and research complex in Panama aimed at a basically international market. This project, with commercial and non-profit education, research and development facilities, for the training of locals as well as foreigners will complement other economic, social and urban development in the area.

The concept is the compendium of various activities in a single community that in the future will be located in the area of Clayton:

First, academic institutions that establish activities related to teaching, dissemination of knowledge and seminars on the Latin American region and the Caribbean. The programs that will be offered will be in areas of special concern for Panama: ecology, maritime studies, international banking.

Second, public research institutions. The Smithsonian Institution, for example, with its headquarters in Washington, D.C. has had its Tropical Research Center located in Panama since 1923 and invests about \$20 million annually in Panama. The Smithsonian being an example of a prestigious institution, our objective is to attract 3 to 5 institutions of this type in different areas of study.

Third, a technological center where private corporations establish their laboratories and facilities for research and development of new technologies. For example, companies that produce medicines based on tropical flora. The consolidation of these institutions in a technological center would add a practical element to the other two more academic components. We have received both financial and technical support from the European Community for the development and promotion of this component of technological centers.

And so, all of these activities that are already underway comprise a part of the strategy that we are establishing within the plans for achieving a conglomerate of economic activities much greater than currently exists, that are inter related and generate more jobs and exports that are beneficial to the national economy and are of interest to the integration of Latin America.

The reversion of United States property to Panama is occurring on a schedule that ends in 1999, when the majority of the properties organized and developed with the Panama Canal itself and the larger military bases are reverted. On October 1st we will receive Albrook, an air base on the Pacific side that includes 468 housing units, 84 buildings for offices and institutions and an airport.

The housing units that we receive are currently being sold within the national community. Within Albrook, it appears that we will be able to create a community of foreign retirees, taking advantage of the pleasant surroundings and of the already favorable immigration and retirement laws that exist in the country. This type of development is equivalent to a kind of permanent tourism for Panama, inasmuch as it would generate income.

The housing that was reverted in Espinar and Davis, two former military bases, has been sold to

residents of the Atlantic side, creating a novel residential concept of garden city for a new Colon.

With the growing amount of property available under our responsibility, both in Colon and in Panama, we are continuing with the development and zoning in order to offer them to the community for different purposes.

With the development of both ends of the Canal, it is expected that a considerable impact will be made on the cities of Colon and Panama. The projects that have been approved for Colon, including the container ports, the port of Cristobal, the renovation of the railroad, Petroport, the shopping center to be put out to bid shortly, the cruise ship terminal currently being negotiated, the School of the Americas hotel and the Davis processing zone, total \$250 million dollars of investments committed over the next 5 years. Having been stagnated for the past 30 years, we expect that the impact of these projects on Colon will revive the economy of that city in terms of the investments as well as the subsequent activities of ports, tourism, industry and the like in order to achieve a significant and beneficial change for its population.

In the case of Panama City, being a much larger city, the impact is more difficult to perceive; nevertheless, there are already commitments to projects valued at over \$500 million between the development of Amador, Ali Reza-Mobil Oil and the Cardenas processing zone.

Panama has something that no other country can offer. We are in the geographic center of the region, we have one of the most important communication routes, a democracy, an educated work force and a pro investment government. And now we have 94,000 hectares along the banks of the Canal and 7,000 buildings for development.

At this historic event we want to invite you ideas and your proposals. We have all the elements to assist your companies in the process of globalization and expansion of their markets. Panama has once more opened its doors.

• *Dr. Nicolas Ardito Barletta is Administrator of the Interoceanic Region Authority (Autoridad de la Region Interoceanica-ARI)*





## INVESTMENT OPPORTUNITIES, TRANSHIPMENT AND CRUISE TOURISM:

Maritime Services by CARLOS ERNESTO GONZALEZ de la LASTRA

The construction of the Panama Canal by the Americans was started with the mistake of setting the administrative offices in Washington, prompting a bureaucratic chaos which made President Roosevelt appoint Colonel George W. Goethals, an Army engineer, as the Committee's chairman and the Canal Engineer in Chief. Goethals' influence was such that he was able to make the U.S. Congress declare the Panama Canal as part of the defense system of that country, and it was turned into a fortification. The issue prompted a big discussion at the American Congress in 1912, as many Congressmen were in favor of a neutral canal dedicated to world trade. If this group of American Congressmen would have succeeded, today we would not be discussing the issue of maritime services of the Panama Canal and investment opportunities would have been possible from the opening of the Canal and not now, 85 years later. The military bases along the Canal have been a wall hindering the use of the waterway as a center for multiple maritime services.

But as the Spanish saying goes "It is never late when there are good opportunities."

Today's world trade together with the process of globalization of the economy has contributed to the growth of international trade, increasing at an 8 percent yearly rate.

Obviously it has influenced technological changes in the building of vessels, increasing the world fleet and the size of vessels.

Obviously, containers are the elements that are prompting the need for transshipment centers and gross cargo handling by feeders.

Article 311 of the Constitution of Panama gives a new prospect to the Panama Canal within a global maritime framework: "The Panama Canal Authority and all those institutions and authorities of the Republic working together with the maritime sector will fall under the national maritime strategy. The executive will hand in a proposal to the legislative body to coordinate all these institutions and promote the country's economic development.

### Investment Opportunities

Following is the framework for investment opportunities:

- A Panamanian maritime cluster
- Market segments - services
  - Cargo
  - Vessels
  - Owners
  - Similar and secondary industries

### Clusters

"Clusters" are defined in terms of the geography or specialized industrial sectors and they are related to one another. In the case of the Panamanian maritime sector, the definition includes physical clustering of related industries. Some of them are increasing, although in a modest way, and others lack development.

### Market Segments

This takes us to clear cut market sectors — the Panama Canal, services to vessels, services to the owners, similar maritime services and services to the cargo.

### Services to Cargo

Following are the services offered to the cargo:

- Port terminals
- Interlinear agreement
- Storage center
- Dry canal
- Regional distribution
- Center for the repair of containers

Four (4) third generation ports are been developed along the Canal.

*Manzanillo* - an annual movement of 500,000 TEUs, forecasted to increase to 750,000

*Balboa* - Panama Ports Company (Hutchison) 50,000 TEUs, forecasted to increase to 400,000

It is the Pacific Rim the area that represents great opportunities for port development due to Asia's enormous participation in world trade.

*Cristobal* - Panama Ports Company - current movement, 100,000 TEUs; forecast, 300,000 TEUs

*Colon Container Terminal (Evergreen)* - to be inaugurated in October; the forecast is 300,000 TEUs.

Note that these four ports forecast movements of 1.75 million TEUs per year, making the Canal embankment an important transshipment center.



These four ports represent one port complex; therefore, we could say that Panama is the only country with a port at both seas.

#### Future Port Development

The western side of the Canal is as wild as pirate Morgan found it 325 years ago when he attacked old Panama. Without any urban development -- there are no industrial or commercial zones -- Fort Sherman is located at the entrance of the Canal on the Atlantic and covers 9,000 hectares to be developed. This is the perfect site for future port expansion, as well as the Pacific entrance at the site known as Farfan. Evaluations carried out by Japanese experts showed that it is the ideal site for a port complex.

There are 142 trade routes that use the Panama Canal, 28 of them are important — the Canal provides access to main world trade centers.

Commercial shipping lines show that besides the United States east coast - Asia route, Latin America employs the Canal as part of its trade system. 27 percent of the routes originate or are destined for a country in Latin America.

The Canal is a "bulk carrier" canal but its main cargo consists of agricultural products that represent 50.3 percent of the cargo. Studies demonstrate that Panama could be a center for grain distribution.

The turnover of military bases such as Corozal, which has large refrigerated rooms, allows for the building of a storage center for perishable goods.

Panama is ideal for a cargo area brokerage center as 2,300 ballast vessels cross the Canal each year and those who come laden usually have available cargo space. The chart shows the average use of different types of vessels. Upon discussion of the communication systems that we will discuss shortly after, we could copy London's "Baltic market."

As a result of this situation shipping lines are reaching "interlinear agreements".

There are different strategic partnerships amongst the vessels crossing the Panama Canal.

#### Dry Canals

In support of the Canal, two dry canal systems

are being developed along the 80 kms separating the Pacific and Atlantic oceans.

*Panama Railroad* -- Railroad modernization and construction of the Panama-Colon highway.

*Chiriqui Dry Canal* -- Another dry canal covering 97 kms has been built at an agricultural region close to Costa Rica. This canal links the two seas by means of small ports for exporting general cargo and containers.

*Multimodal Structure* -- Panama is the place in America best suited for a multimodal structure to develop a regional system of cargo brokerage.

#### Services to Ships

Services to the vessels represent another market sector. Studies undertaken by the Interoceanic Region Authority demonstrate that there are different services available to the vessels:

- Panama Canal
- Repairs and maintenance
- Crew - training
- Supply of marine bunkering
- Supply of spare parts
- Repairs and installation of electronic and telecommunication systems
- Repair of engines, plants and refrigerated systems.

#### Number of ships handled at Central American Ports

Nicaragua	162
El Salvador	359
Honduras	1,687
Guatemala	2,078
Costa Rica	2,179
Panama	12,959

#### Services to the Ship

Repairs and maintenance.

There are 13,500 vessels crossing the Panama Canal de Panama per year and 12,000 vessels berth here.

81 percent of the vessels handle cargo (10,900) while 19 percent are ballast vessels (2,600) It is believed that of the 2,600 ballast crossings, 950 may enter dry docks as they are in ballast.



4,000 vessels transit as cargo; this could be an open market for minor or emergency repairs.

It is estimated that Panama's area of influence (Central America, the Caribbean and South America) accounts for 3,200 vessels.

5000 vessels is the estimated market size and if there is a 30 percent repairs program or yearly mandatory inspection, the Panamanian market would not be less than 1500 vessels.

Braswell Shipyard forecast the repair of 105 vessels in 1997 with that representing its maximum capacity.

If we use the dock at Mount Hope's industrial division, we have an area for 95 vessels per year. Note that the figure representing the available area is 200 vessels, 11 percent of the market for repairing vessels in Panama.

#### **Crewing and Training**

Approximately 400,000 crewmembers cross the Canal each year.

There are approximately 30,000 crew changes taking place every year, less than one percent are Panamanians.

Therefore, the Interoceanic Region Authority is marketing training centers for naval personnel at the regional level and the national government will sanction a new labor maritime legislation in the upcoming weeks in order to promote international management shipping agencies and agencies for crew recruiting in Panama.

#### **Marine Bunkering**

Panama sanctioned a law establishing fuel free zones; there are 12 such zones in the Canal at present.

Only 18 percent of the vessels crossing the Canal are supplied with fuel — the market represents 80,000 million barrels and only 20 million are sold.

#### **Services to Shipowners**

- Vessel registration
- Administration
- Insurance
- Financial services
- Naval mortgage
- Credits

#### **Panama Canal Traffic Management System**

The system allows rendering of services to the vessel anywhere it is located before arriving in Panama.

#### **Logistics and Information Center**

These possibilities could be extended to a logistics and information center.

- Handling of voice and data communication
- EDI with the Canal
- EDI with the banking center
- EDI with the ports and Free Zone
- Teleconferences (video and voice)
- Link via Internet
- Weather forecast
- Variety of programs (educational, leisure, etc.)

#### **Investments of the Panamanian Maritime Sector Underway**

*1997 - 2005 US\$1,720 mm*

• Panama Canal	965 mm
• Evergreen Container Port	100 mm
• Cristobal / Balboa	150 mm
• MIT Manzanillo	100 mm
• Panama Railroad	80 mm
• Mobil Oil Tank Terminal	25 mm
• Transisthmian Highway	300 mm

- *Carlos Ernesto Gonzalez de la Lastra is Advisor to the Interoceanic Region Authority (ARI)*



The next ten years are extremely important in the history of Panama. We will assume the responsibility for the operation of the Canal and at the same time we will gradually incorporate the former Canal Zone, known today as the Interoceanic Region, into our national development. This region consists of a total of 94,000 hectares, which represents 5 percent of the national territory. The Authority for the Interoceanic Region (ARI) is the government entity responsible for receiving and privatizing these assets and the challenge for Panama is to incorporate them into our development. The Regional and General Plan for the Utilization of Lands that was developed by the consulting firm of Nathan Associates, is already a Law of the Republic, having been approved by the Legislative Assembly. These Plans govern the development and best utilization of the Canal areas, while at the same time providing guidelines for the privatization of these areas which were characterized as "dividing the land and uniting the world".

The principal task of the ARI is to attract investments to the Interoceanic Region, thereby generating exports and jobs, attacking the country's housing deficit and utilizing the national raw materials.

One of the sectors being promoted by the ARI, in addition to the maritime, industrial and commercial sectors, is tourism.

In spite of being a country with a great deal of tourist attractions, we have lagged behind our neighbors who have taken advantage of the development of this clean and rapid growth industry. Based on figures from the World Travel and Tourism Council (WTTC), worldwide tourism generates \$372 billion dollars and employs 212 million persons, that is, one out of every nine jobs. It is, therefore, the economic sector with the highest percentage of productivity. Being aware of these advantages, the Government of Panama has set the development of this industry as one of its principal objectives. The ARI, in coordination with the Panamanian Institute of Tourism (IPAT), is promoting an ambitious tourist program in the Canal areas.

Panama is on the verge of becoming a tourist attraction. The tourism industry is seeking new markets and Panama is much more than a Canal,

although the Canal is in and of itself the most important tourist attraction it can offer.

However, in addition, in Panama we are able to travel from the Atlantic to the Pacific Oceans in only one hour and fifteen minutes, we have 2,989 kilometers of coast line suitable for all types of aquatic activities, including Panamanian fishing which is internationally renown.

Approximately 3.5 million years ago, the Isthmus of Panama emerged from the ocean, forming the present bridge which joins the Americas. All species of animals migrated through Panama from north to south and vice versa, enriching our fauna and creating the richest and most abundant biodiversity which is still the subject of research by scientists from all over the world.

Panama is proud of having more species of animals and trees than Europe, including Russia, or North America, including Mexico.

The flora of the world include 33,000 species, of which Panama has 33 percent. We have over 900 species of birds, 1,200 species of orchids and 10,000 plants within 12 different climactic areas.

In Panama there are locations with 184 varieties of trees per hectare, more than exists in any other place in the Western Hemisphere.

Twenty five minutes from Panama City, in a place called Gamboa, the world record for bird watching has been surpassed, with 539 species seen in a single day.

However, there is another place called Amador. Its construction was started in 1907 and completed in 1914. It is a land fill made with excavations from the Culebra Cut (Gaillard Cut). The construction of the break water, known as the Causeway, was started in 1908, and provides the protection needed by vessels entering the Pacific side of the Canal.

The Government of Panama has designated Fort Amador to be utilized as a high level tourist center and the ARI contracted the services of the consulting firm Edward D. Stone and Associates to develop a Strategic Plan for the Tourist Development of Amador, thus providing guidelines, character and discipline to the project. Fort Amador has a total of 162 hectares on the main land, 12.5 hectares on Perico Island; 13.5 on Flamenco and 15.8 on Naos and Culebra Islands.



The intense promotional program by the ARI has resulted in the signing of three important investment contracts for Amador, totaling over \$300 million dollars.

Of these contracts, the most important one is with the United Enterprise Trust Group. In September of 1996, the ARI signed a contract with the Korean-American consortium, United Enterprise Trust Group, for the construction of a tourist complex in Amador valued at \$300 million.

In addition, the government expects to invest close to \$55 million in reconditioning Amador's infrastructure in support of the multimillion dollar investment to be developed in this beautiful sector of the Canal area. This includes the construction of a small hotel and restaurant by the Panamanian firm UNESA, one of the many projects that include a professional golf course, a marina and a port of call for cruise ships.

A letter of intent entitled "Amador Port Development" has been signed for the creation of a port of call for cruise ships, that will include a duty free commercial center. Also, a letter of intent has been signed with the Panamanian firm Buenaventura, for the construction of a hotel, a boutique and a marina on Flamenco island.

The United Enterprise Trust Group tourist complex will establish Amador as the new attraction of the Americas. Its investment is the largest made for the development of a single project in all of Central America and the Caribbean.

Just 15 minutes from the center of Panama City, the Korean-American consortium project includes a complex of 50 villas on Flamenco Island, a 500-room luxury hotel on Naos Island, with a rotating restaurant on the top floor and a complex of 300 time-sharing apartments on Perico Island. Its construction will begin in a few months. It will have a monorail connecting the three islands, a shopping center, a convention center, its own port of call for cruise ships and a hydroplane that will serve to connect the tourist complex, Panama City and Tocumen International Airport.

The General Administrator of the Authority for the Interoceanic Region has stated that these projects will increase tourism in the country. None of the 250 cruise ships that transit through the Ca-

nal annually docks in Panama due to the lack of ports and adequate tourist complexes that offer these services. These facilities, in addition to others that will be constructed in Colon, the Atlantic sector of the Canal, will establish Panama as the most attractive tourist site of the region within the next few years.

- *Marcia Mercedes de Morgan is Director of Promotion and Marketing, Interoceanic Region Authority (ARI)*

Since very early ages, man has felt the need to move, either to satisfy his own curiosity, to enlarge his commercial trade or only to relax.

Panama's privileged position has allowed great discoveries in its territory that have contributed to change world history. It was in Panama where Vasco Nuñez de Balboa discovered the Pacific Ocean. Spanish conquistadors left Panama for new lands and it was through the Isthmus that first the French and then the Americans thought that this magnificent worldwide engineering masterpiece that we know today as the Panama Canal could be built, site that has gathered nationalities from all over the world.

We have noted that, historically, Panama seems to have emerged in the world to fulfill its manifest destiny: to serve as a bridge for union, peace and world brotherhood. Evidence of what we have just mentioned is that in our country a tourist is a friend, not a stranger.

However, putting aside the human point of view and quantifying tourist activity, we could say without doubt that tourism represents the third level in the balance of revenues of our country and the first amongst traditional export items. During 1996, the three main sources of revenues for the Republic of Panama, in million of dollars, were:

Panama Canal	541.9
Colon Free Zone	363.9
Tourism	343.1

During the same year of 1996, tourism led the first place in revenues resulting from the export of traditional products, such as:

Tourism	343.1
Bananas	184.0
Shrimp	74.7

To date, 68 percent of our visitors come to Panama for business reasons and shopping and only 16 percent for vacations. We should not deny the importance of tourism generated by businessmen and wholesale purchasers that traditionally has developed in Panama. We could say that in a recent survey carried out throughout the country, it was determined that there are 1,398 tourist at-

tractions that could be the subject of methodical commercial development, allowing their conservation while being world sites for relaxation. Of the 1,398 attractive tourist sites, 71 percent represent natural sites with evident tourist attraction. Ten percent constitute sites where folkloric and cultural values make them of utmost importance. As a crossroads of the world, Panama has become an example of peaceful cohabitation of all races, which under no reason has led to reducing the importance of our aboriginal ancestors. At the end of the present century, there are seven aboriginal groups in Panama: Kunas, Embera, Wounaan, Bugle, Ngobes, Teribes and Bri-Bri, who inhabit sites which were favored by mother nature. They themselves to defend their culture have become an example that should be acknowledged by us. This mixture of cultures and ecology makes possible the rendering of a unique product in the world, which is the Kuna Yala or San Blas territory, where the Panamanian Caribbean mingles with century-old Kuna culture, which is an unforgettable experience for all who have the opportunity to enjoy it.

All these aspects prompt us to think that tourism is to become, in the near future, the activity by excellence that will contribute in a decisive manner to the economic and social development of the Republic of Panama.

Therefore, the National Government by passing Law 8 of 1994, established tourism as an industry for public benefit and national interest. This Law promotes tourism investment through fiscal incentives, which in only three years of enforcement has prompted investments in tourism for 184.5 million dollars.

Law 8 of 1994 establishes general incentives for public lodging investments, which concentrate in the exemption of import taxes for a 20-year term that will include introduction of materials, equipment, furniture, devices and motor vehicles necessary for rendering the services; likewise, it establishes a 20-year exemption of the income tax, taxes for berthing or landing at airports, that the company uses, that the investor is to built or renovate. However, prior to Law 8 of 1994, thanks to joint efforts with the Organization of American States, aiming at establishing a plan according to tourist



development; nine zones were identified, which due to the variety of natural and cultural attractions have been the object of a special declaration of Zones of National Interest for Tourism Development, which are the following:

ZONE NO. 1	LA AMISTAD
ZONE NO. 2	BASTIMENTOS
ZONE NO. 3	ARCO SECO
ZONE NO. 4	FARALLON
ZONE NO. 5	METROPOLITANA
ZONE NO. 6	PORTOBELO
ZONE NO. 7	SAN BLAS
ZONE NO. 8	LAS PERLAS
ZONE NO. 9	DARIEN

These zones cover the whole country and represent a special attraction for tourism development; therefore, these are general incentives granted by the Panamanian State to investors engaged in public lodgings. Those investors who develop plans in the Zones for Tourism will be offered a 15-year income tax exemption and a 20-year ITBM or 5 percent tax exemption.

The Law also provides for activities related to restaurants, specialized tourism centers, purchase of transportation equipment to be used by receptive tourism agencies, including facilities for the production of films that could promote tourism in benefit of the Republic of Panama.

Likewise, the Panamanian State has regulated the right to offer lands, islands and landfills for private use, in order to grant concessions, to be developed in benefit of tourism activities. The concession is granted for up to 40 years and the process is a simple and easy one.

The Law of Incentives to promote tourism activities aims at the development of this activity by all investors, resulting in the same benefits enjoyed by all countries who have by means of tourism sought revenues for the social development of their countries. However, in the case of Panama we are sure that it is unique, although the country is used to receiving and welcoming visitors and it seems to be destined to become a link for all races.

Latin America has been a fruitful land, men have dedicated their lives and efforts to truly develop the region. Amongst these prominent Latin

American sons, we must enhance the great Statesman Simon Bolivar, who was not wrong when he said: **"If we were to choose a capital, the isthmus of Panama will be chosen for this important destiny."**

*• Sara Sanchez Saez is an Attorney  
and Chief of the Legal Aid Department,  
Panamanian Institute of Tourism*

**OPPORTUNITIES FOR INVESTMENT, TRANSHIPMENT AND CRUISE TOURISM: Summary of the Question-and-Answer Period:**  
Investment Opportunities in the Reverted Areas/Maritime Services/Cruise Tourism

**Speakers:**

**Dr. Nicolas Ardito Barletta**

*Administrator of the Interoceanic Region Authority (ARI)*

**Carlos Ernesto Gonzalez de la Lastra**

*Advisor to the ARI*

**Maria Mercedes de Morgan**

*Director for Promotion and Marketing, ARI*

**Sara Sanchez Saez**

*Chief Legal Counsel, Panamanian Institute of Tourism (IPAT)*

**Panelists:**

**Ron Brinson**

*President and CEO, Port of New Orleans*

**Stephen A. Nielsen**

*Vice President for Caribbean Affairs and Operations, Princess Cruises*

**Michele M. Page**

*President, Florida-Caribbean Cruise Association*

**Dr. Hugo Torrijos**

*Director General, National Port Authority*

**Carlos Urriola**

*Vice President for Marketing, Manzanillo International Terminal*

**Paul Rickmers**

*General Manager, Panama Ports Company, S.A.*

**Edward Horng**

*President, Colon Container Terminal*

**Moderators:**

**Christopher Hayman**

**H.E. Olga Bosquez Poveda**

The questions, answers, opinions and suggestions centered around such issues as the potential threat to health or human life by utilizing military areas where environmental contamination problems or undetonated explosives may exist, the parties responsible for cleanup and the costs thereof; the additional commercial services currently offered by the Panama Canal that could be offered by the Panama Canal Authority when the Canal is transferred; the distribution at the national level of the benefits generated by the business activities conducted in the areas that have been reverted or are to be reverted; plans for the construction of a new bridge or a tunnel that would complement the present bridge; the potential for the container handling business; the impact on that type of business by the construction of a third set of locks; the experience of the privatization of the ports; the requirements that would enable Panama to take advantage of its relative position in the cargo transshipment business; the impact of the restructuring of world commerce on the cargo transshipment business in Panama; the port requirements for handling the potential transshipped cargo that would result from the construction of a third set of locks for vessels up to 150,000 DWT.





It was explained that because of the under-utilization of the military areas of the Canal, the contamination problem is not as serious as it is in the military industrial bases. The problem lies in the firing ranges which occupy some 17,000 hectares, 50 percent of the military areas. However, those firing ranges are far away from the areas with infrastructures that are being offered for development. The cleanup and its cost are the responsibility of the United States, in accordance with the Treaty; conversations in that regard are currently underway.

It is not expected that the Panama Canal Commission will become involved in any additional commercial activities. The activities that are developed by taking advantage of the transfer of the Canal and the reversion of the areas shall be offered preferably to the national as well as international private sector. Panama has ensured that the benefits that are generated from the transfer of the Canal and the reverted areas are distributed throughout the total population and national territory. The jobs that are generated will be available to all. The demand created by the development of tourism will create markets for agricultural products and craft work that are produced throughout the country and the income generated from the sale of reverted properties will go to a trust fund for social development to be used for social projects throughout the country.

The need for an additional bridge or a tunnel under the Canal is evident, specially on the Atlantic side. Any new bridge must take into account the possible construction of the third set of locks because of its dimensions, including the height for ships of up to 150,000 DWT. We may probably see those investments within the next ten years.

The restructuring of world commerce favors Panama's opportunities for increasing the cargo transshipment business; however, it depends on Panama offering quality services and at competitive prices. To take advantage of the business that could be generated by the third set of locks, the port facilities must be improved in order to handle vessels of up to 150,000 DWT, in particular the draft of the ports.

Regarding cruise ship tourism, the debates centered around the requirements of a port of call, on the current level of interest of the cruise ship industry for making Panama a port of call, the perception that exists among tourists and the tourism industry regarding the conditions offered by Panama, plans for the construction of cruise ship ports, the benefits generated by the cruise ship industry in the countries that have developed that industry, the cost increase for Canal usage, and incentives to the cruise ship industry, special rates and job opportunities offered by the cruise ship business.

The following were identified as requirements for a country to become a port of call: (1) that it can be included in the itineraries; (2) that the port can logistically be reached; (3) the perception of tourists and travel agents as to whether or not the port is worth while, the satisfaction offered to passengers, the existence of sufficient short tours to interesting locations, the facilities and quality of the transportation service, the availability of these services, if the facilities offered by the port meet the requirements of the industry; and (4) the operating costs of vessels once they arrive at the port. There was agreement that there exists an interest in the cruise ship industry for using Panama as a port of call. The perception over the last 10 years has not been good, but there is optimism as to what Panama will do. The emphasis of the cruise ship business must be in the Caribbean area where the cruise ship activity is concentrated. Colon is a beautiful city, but its present image of ruin and uncleanness has to be changed. Panama Ports confirmed its plans for the construction of a port for cruise ships in the Atlantic and possibly another in the Pacific. The cost for using the Canal is increasing for passenger vessels: \$150,000, \$160,000 per vessel and next year \$180,000. The Canal is

becoming a niche for small passenger vessels; however, they do not offer the income potential to the Panamanian economy as do the larger vessels. Incentives must be provided to the cruise ship industry to make use of the Canal's attractiveness and to convert Panama into a port of call. The contribution of the cruise ship business in countries that are ports of call is significant, \$150 per passenger in the port of call during 7-hour visits. The crews, with a ratio of 1 to 2 1/2 passengers, spend about \$60.





***P*ANAMA AND THE *M*ARITIME *S*ECTOR**

I open my remarks by acknowledging the fact that many around the world do not perceive Panama to be a true maritime nation. This is because along our difficult national history, maritime affairs had to be dealt with in spite of, and not concomitant with, developments related to the Panama Canal. Here, it is worth noting that, save for the ship registry dating back to 1925, the rest of the maritime activities in this country were not really in the hands of Panamanians until 1979, when the Torrijos-Carter Treaties went into force.

Although unfortunate in many respects, the historical circumstance of having had to devote most of our efforts to the task of perfecting our national sovereignty has, however, offered us a unique opportunity. I speak here of the unique, God-sent opportunity that we Panamanians have had to plan our maritime future, carefully scrutinizing the truth of our weaknesses, and also visualizing the possibilities and the potential that lie at our feet. There are few nations around the world and there have been indeed even fewer times in the history of nations, where and when such an auspicious juncture has been arrived at.

I believe this Universal Congress of the Panama Canal is an unequivocal sign that our country is on the verge of an entirely new era, that we have toiled to prepare ourselves and that we continue to strive to forge a better future. It is precisely about this future that I wish to speak to you about today.

### **The National Maritime Strategy**

Since late 1996 and in clear recognition of the need to craft a coherent and profound strategy in order to achieve optimum utilization of Panama's maritime patrimony, the National Government decided to undertake a totally different exercise: a mixture of economic impact and competitiveness studies, international consultations, and a strong component of national discussions to canvass national opinion. The inventory of our maritime patrimony was scrutinized to distill our essential strengths and weaknesses, as well as our real ability to compete regionally and internationally on various fronts.

As a result of this effort, a few weeks ago we arrived at a national consensus about what we wish Panama's maritime future to be. Our national will

is embodied in the National Maritime Strategy, which contains the essential elements of the new policies that Panama will put in force in order to upgrade the quality of its maritime activities to the standards expected of us by the international maritime community.

The National Maritime Strategy has six cornerstones or strategic development goals, which I shall now explain in some detail.

### **Unification of the Maritime Competencies of the State**

The cornerstone of Panama's new policy is the unification of the maritime competencies of the Panamanian State, currently spread over several ministries and autonomous agencies of the Panamanian Government. This unification takes place pursuant to the United Nations Convention on the Law of the Sea (UNCLOS), the umbrella legislation we have chosen as the framework for our actions.

In order to achieve this unification, we have decided to create the MARITIME AUTHORITY OF PANAMA, conceived to be an elite agency of the Panamanian Government and modeled to suit the new administrative and technical requirements of the State's reengineering efforts being promoted by our Government. The new agency combines the following characteristics:

- A presence at the level of the Cabinet Council
- Autonomous ability to take decisions with respect to national maritime affairs
- Administrative and financial autonomy, subject to audits
- Its own patrimony and the right to administer it.

The Authority's characteristics that I have outlined above respond to the very particular needs of maritime activities, and they ensure that the new agency will have the flexibility required to handle the magnitude of our country's responsibilities.

The main organs of the Maritime Authority of Panama are the following:

- The Board of Directors
- The Group of Advisers to the Board of Directors
- The Office of the Administrator



- The Panamanian Maritime Research Institute

For operational aspects, the Authority shall be organized in four directorate-generals, as follows:

- The Directorate General of the Merchant Marine
- The Directorate General of Ports and Maritime Ancillary Industries
- The Directorate General of Fisheries and Coastal Resources
- The Directorate General of the Coast Guard

These four directorate-generals are formed by merging the various agencies and departments that now carry out those functions. By way of example, then, the Directorate General of the Merchant Marine is formed by merging the Directorate General of Consular and Maritime Affairs with the Nautical School of Panama, so that under the new department we will have the functions of ship registration; maritime safety administration, including Port State Control; matters relating to seafarers; and compliance with the relevant provisions of UNCLOS. Generally speaking, we want Panama to have a maritime administration tailor-made for the maritime community's new reality, and for the enhanced magnitude of maritime activities in Panama in the years to come.

**Compliance with International Conventions**

The second cornerstone of Panama's National Maritime Strategy is the formulation of strict parameters that lend substance to, and fulfill, the numerous international conventions that Panama has ratified with respect to shipping, fisheries and other related matters. The core objective is to create an administration that is effective and serves the international maritime community with a true service vocation. To achieve this, Panama intends to follow the industry's best practices, with the aim of attracting an international clientele whose goal is business success with adherence to internationally-agreed norms.

Within this concept we also find a new willingness to work at the sub-committee level of the various international organizations; a reevaluation and improvement of our relations with governments, shipowners and seafarers; and the reorganization

of our international service structure through changes in our consular system, geared towards an adequate separation between technical and fee collection tasks.

**Foster Competitiveness**

On the basis of the recognition that one of the major flaws of Panama's maritime sector is the scarcity of qualified Panamanians, such as will be needed to satisfy the demand for marine personnel to be generated in this country around the turn of the century, the National Maritime Strategy sets forth as the third development goal a totally new proposal: to constitute Panamanian human resources into a relevant factor of the Strategy; to create the Panamanian Maritime Research Institute with a heavy business component; and, generally, to foster the development of Panama's human resources.

We also adopt strategic planning based on research as the basis for Panama's future maritime development.

**Foster National Production**

With the aim of opening up new markets for several national products, the National Maritime Strategy posits as the fourth development goal a series of measures that include the creation of a fishery products auction, the promotion of bunker processing companies, and an increase in the domestic production of foodstuffs such as fruit, vegetables and meats for the consumption of vessels transiting the Panama Canal or entering Panamanian ports. Likewise, we will endeavor to promote our geographical position --the Panama Canal, the ports, the road and railroad links, etc. -- as a strategic beltway, to launch Panama as a world class center for multimodal transport.

**Promote Cabotage**

Fully aware of the States' responsibility in fostering maritime safety and efficient means of transport, the fifth strategic goal of the National Maritime Strategy is to create fiscal incentives and provide technical support for national and foreign companies wishing to invest in cabotage shipping, and/or to develop related industries and activities



We shall strengthen these activities through our bilateral, multilateral and globalized trade agreements.

#### **Support for Related Sectors**

The sixth and last cornerstone of the National Maritime Strategy promotes a reevaluation of national legislation and the adoption of such changes as may provide an adequate framework for developing activities and sectors related to maritime affairs, including enhanced fiscal incentives, technical support and market know-how. Included in these sectors are tourism in general and cruise tourism in particular; the set-up of plants to process fisheries products; and the creation of cargo consolidation, storage and distribution facilities within the country.

#### **Conclusion**

The liberalization of world trade and the entry into force of the UN Convention on the Law of the Sea (UNCLOS) have generated structural changes in all facets of maritime affairs, including shipping and fisheries. This has also forced a reevaluation of the mental and business patterns that countries follow in order to respond to the new challenges these instruments pose.

For the Republic of Panama, UNCLOS in particular contains key provisions that deal with fisheries, the merchant fleet, preservation of the marine environment, promotion of research, and an overall improvement of our efficiency in maritime affairs. To put these into effect demands a total revamp of the way in which we now do business.

Panama's National Maritime Strategy is the product of a broad consultation process, similar to that which bred the Constitutional Title and later on the law that creates the Panama Canal Authority, and one which conciliated the opinions and points of view of government, business and civil society. Through this Strategy, which I have briefly described here today, the Panamanian Government offers you, distinguished representatives of the national and world maritime community, its vision of Panama as a Maritime Nation of the 21st century. We hope the Strategy is proof of our effort to fulfill, not only what we have agreed to do, but also what others expect of us. For this reason, I

encourage you to make any comments or suggestions you may deem appropriate, in the understanding that all contributions made to improve the quality of our performance in maritime affairs is, indeed, most sincerely welcomed.

- *H.E. Dr. Olmedo David Miranda Jr. is Minister of the Presidency and President of the National Maritime Commission*



**PANAMA AND THE MARITIME SECTOR: Summary of the Question-and-Answer Period:**  
**A Policy for the Future: Panama's Maritime Strategy**

**Speaker:**

**H.E. Dr. Olmedo David Miranda Jr.**

*Minister of the Presidency*

**Panelists:**

**Philip Embiricos**

*Director, Embiricos Shipbrokers Ltd.*

**Christopher Horrocks**

*Secretary-General, International Chamber of Shipping*

**Patricia Martin**

*Director, SEGUMAR*

**Ivette Ng de Jaen**

*Technical Director, National Maritime Commission, Ministry of the Presidency*

**Moderators:**

**Christopher Hayman**

**H.E. Olga Bosquez Poveda**

The dialogue centered around the subjects of the policies of the maritime sector, the institutional mechanisms, the image of Panama in the maritime world, the coexistence of the Maritime Authority which will be created and the new Panama Canal Authority, the registry of ships, the compliance with the international standards of safety in navigation, the scope of rules concerning coastal trade, the maritime training programs, the international cooperation with training programs, and the sources of income for financing the Maritime Authority.

The Panamanian speakers and panelists explained that there exists a maritime strategy that defines goals, objectives and policies for making Panama a major center for first class maritime services. The legal instruments are being created for guaranteeing these services and the Maritime Authority will be created as an elite institution of public administration. The Panama Canal Authority will be represented in the Maritime Authority in order to ensure the appropriate coordination, consistency and coherence in its actions, inasmuch as the Constitution requires the Panama Canal to be a part of the national maritime strategy. Achieving that coherence at the level of public administration is not only guaranteed by the Constitutional provision and the organic law of the Panama Canal Authority, but also because the President of the Board of Directors of the Canal Authority will be a Minister of State and the Maritime Authority will be headed by the Minister of the Presidency. That is, a Minister that is very close to the Canal and another that is very close to the President of the Republic.

It is recognized that Panama's image in the maritime world will not begin with its assumption of the management of the Canal. That image exists with the registration of ships, the operation of the ports and other services to navigation. Panama is making a great effort to ensure that ships flying the Panamanian flag comply with all of the requirements of international maritime organizations, particularly the International Maritime Organization.



It was made clear that the policy concerning coastal trade did not mean that this service would be restricted; the service could be provided equally by national and international companies. It was explained that the national maritime strategy places great emphasis on the educational and training aspect of maritime personnel. Panama is happy to receive any type of international cooperation from such entities as the National Oceanic University of Taiwan that was represented at the Congress. The Nautical School will become part of the Maritime Authority as well as the Institute for Oceanographic Investigation. Panama is in the process of approving a special labor law for the maritime sector which recognizes its special characteristics and requirements, in order to encourage the employment of Panamanians at sea. It was reported that Panama is party to the international agreement on Standards, Training, Certification and Watchkeeping of Seafarers, which regulates the maritime profession. It was reported that there is a lack of personnel for work at sea, which could benefit Panama.

Finally, it was stated that the maritime strategy is very well conceived, but that it has to be implemented. The Minister of the Presidency reported that the legal structure exists and that the chronology of events are scheduled through February 1998 and beyond. Regarding the questions concerning the source of funds for the Maritime Authority, it was reported that because it is a matter of consolidating existing entities, the funds assigned to those entities in the annual budget will be utilized, in addition to the funds that are considered as necessary, inasmuch as the national maritime strategy is a government priority.





The Panama Chamber of Shipping was originally founded in 1960. In those years the association was as really a very informal grouping of only steamship agencies who were dedicated to attending vessels' transits of the Canal and calls at the now extinct Canal Zone. In the confines of the Canal Zone, only limited commercial private activities were permitted. However, it was not long after the opening of the Panama Canal that the Canal Company, as it was then called, realized that a steamship agent provided an indispensable service to the vessels which transit the waterway. As a direct result of this, certain commercial licenses were issued for private companies to operate in the Canal Zone and for many years the local steamship agents operated in conformity to North American laws, in particular Louisiana, until the implementation of the Torrijos-Carter Treaty which went into effect in 1979. In October 1st of this year this rather loose association converted itself into the "Camara Maritima de Panama" and registered its status formally as an association in the commercial life of the Republic. It was not long before many other companies with strong links to the shipping industry became members, such as petroleum companies, transport companies, container yard operators and recently a private terminal, and attorneys specializing in maritime law.

The role of the steamship agent, which is still the nucleus of our organization, covers a wide spectrum of activities. An agent is a transport intermediary and makes all the necessary arrangements to permit the transit of a vessel, guaranteeing all related expenses; likewise for vessels calling at the major ports in the area. There is also a ships husbandry side of the business in which agents are heavily engaged, i.e. crew changes, handling of spares, coordinating of repairs and the 101 items that a vessel's owner or operator may require. In fact a true agent is the extension of the owner's or operator's head office.

The goal of the Chamber of Shipping is to protect the interests of international shipping in this area, to overview the performance and costs of the various services provided by third parties and to work together to find common cause to protect the principals' interests in the area. Also the Camara

serves as a forum for the exchange of ideas between the membership and to be informed of the various changes in our country which affect the shipping industry, such as customs regulations, port conditions, and to foster a close and harmonious relationship with the Panama Canal Commission, the National Port Authority and the new private terminals which are emerging. Our membership provides a unique resource of collective experience regarding the many facets of the industry.

Now a quantum leap backward to the initial relations between the waterway's administration and agents, also amongst the agents themselves. Judging by correspondence from 1915 it appears a dichotomy had developed almost immediately between the powers that be and the commercial sector, the customers, to the point where the administration of the day expressed their reservations about the necessity of permitting agents to "interfere" at all. The following is an extract from a letter to Capt. Hugh Rodman USN; Marine Superintendent of April 13, 1915 from Capt. Clifford Payne, a well established agent in this area, who incidentally is thought to have played a role in Panama's independence movement from Colombia in 1904.

*Captain Hugh Rodman, USN  
Marine Superintendent. The Panama Canal*

*Sir, I beg to acknowledge receipt of your favor of yesterday's date with reference to an article which appeared in "FAIRPLAY," dated January 28th last.*

*The article in question contains extracts from a private letter which was written by me in December 1914, to a personal friend interested in shipping matters. Although the original letter was not intended for publication, I hold myself entirely responsible for the statements contained there in and reproduced in the article in question.*

*The writing of this letter was prompted by the request for an explanation of the reasons for the systematic circularizing of steamship owners, which I understand emanated from your office, in deprecation of the employment of Agents or Banks in connection with their financial or other arrangements at the Panama Canal, and also in defense of my own right to conduct a legitimate business beneficial to shipowners and indirectly to the Panama Canal.*



To such an extent was this system, which can only be called persecution, carried, that owners repeatedly wrote me asking for the cause or object of your circulars, and stating that although they much preferred to continue doing their business through my firm, they were afraid that they would be penalized in consequence.

In your circulars, you speak of agents as being "Third Parties," and causing delay. I beg to point out that we are not "Third Parties" in any matter which we take up for the owners whom we represent. We are "First Parties" or Principals, authorized to settle with you finally for behalf of our clients any and every matter that may arise. Not as you state in your circulars, to cause delay and lengthy correspondence, but if necessary, to take up with your board and to settle at once without any correspondence or delay whatsoever, any question that may arise.

In one particular case that I may mention and which occurred in September of last year, we were asked by the owners in the end of November, to take up the matter of some alleged discrepancies in the accounts. This we at once did with the Collector who however ignored us and took the matter up with the owners brokers in New York. The brokers not being cognizant of the points raised, wrote the owners, who again wrote us and their brokers. In consequence, we understand that the matter is not yet settled to the owners satisfaction and that correspondence is still going on between New York, Glasgow and Balboa. This does not bear out your statements. We could have settled the matter at once.

If you are prepared to state that steamship owners are not to be allowed to conduct their business through their agents, but must deal solely with the Panama Canal, we retire and leave it to the owners to take the matter up with the Canal or US Government. In the meantime if these companies prefer to conduct their business in their own way, are their agents to be ignored and themselves to be circularized from your office until they are bullied into conducting their affairs against their own best judgment?

There are countless unavoidable contingencies constantly arising in both the practical and financial operation of ships which can only be promptly

and efficiently handled by men with years of practical experience in mercantile shipping business, holding full powers from the owners to act for them at once in their own best judgment, if expensive delays are to be avoided.

It is not always convenient for the owners that their business affairs are made public to a Government bureau. It is not always convenient, anyone with practical mercantile shipping experience knows, for owners to pay large sums of money before the obligation to do so is actually incurred. Of these and many other advantages, by which both shippers and owners have always benefited in the conduct of their business, you are trying to rob them, they will resent it.

I hold no brief for any other firm of steamship agents or for any bank, I write solely in the interest of shipowners, my own firm and indirectly the Panama Canal. I have in every way promoted the advantages and recommended the use, of the Panama Canal, to shipping firms. I can mention the names of at least four large steamship companies which are gradually coming over from the Suez and Good Hope routes to the Panama Canal, I believe on my representations. The interests of my firms are parallel to those of the Canal in the promotion of its use.

Returning to the "Fairplay" article in question, I am as I before stated, entirely responsible for the statement made in that article. If you so will lay before a Public Notary, sworn to secretary, ample documentary proof of those statements.

In no case will I produce private correspondence in public.

Trusting that you will give this matter your due consideration.

I beg to remain, Yours truly

#### Fairplay Weekly Shipping Journal-January 28, 1915:

I have received the following letter from Captain Clifford Payne, representing the Anglo-American Steamship Agencies, Inc., of Panama. The enclosure he refers to is an article from the Canal Record, wherein the US Government seeks to impress upon the shipowner that he would be better served by eliminating the ship agent and leaving himself

entirely in the hands of the Canal authorities. Captain Payne directly and vigorously traverses this statement, and gives chapter and verse for his assertions. If these are correct -- and I have no reason to doubt the accuracy of Captain Payne's statements -- it would seem to be at least premature for the shipowner to leave his interests entirely in the hands of state officials who, however desirous they may be of carrying out their duties smoothly and successfully, must in the nature of things be new to the job. If the autocratic manner, combined with red-tape, with which we are so familiar in this country prevail on the banks of the Canal, we can well imagine that the shipowner would be all the better for a man on the spot to do the prodding up. The saving of the agent's modest fee is a bait held out by the U.S. authorities. We are all glad to get something for nothing but is quite conceivable that the "something" may be in the nature of an unpleasant surprise and dear at the price. The policy of the U.S. Government seems to be to monopolize all the business on the Canal such as bunkers, stores, stevedoring, etc. This may be carried too far, and as my correspondent points out, the chances are that someone will have to pay dearly in the end. The agency seems to have been instrumental in adjusting the question of surplus bunkers of steamers in ballast, for which the authorities wished to charge dues as cargo. Captain Payne is now in London, and will be pleased to deal with any questions raised by shipowners using the Canal. His address is 1, Fenchurch Avenue, care of Messrs. Turner, Davidson and Co., who have arranged to act as agents for the Company in Europe

Captain Payne also wrote a ten page letter, with attachments, to General George Goethals, the then Governor of the Canal, refuting the Governor's allegations that his (Capt. Payne's) complaints were self-serving and conveyed a false impression of the conditions at the waterway. This must have taken quite some courage and has rather a David and Goliath flavor.

Fortunately for the members of the Camara Maritima, Capt. Payne's view prevailed and many steamship agencies from those times still flourish, Payne and Wardlaw, which became Associated in later years together with Andrews & Co., C.B. Fenton, C. Fernie, Panama Agencies, Boyd Steamship,

Norton Lilly, Wilford & McKay, all established themselves as the waterway opened, and in some instances quite some years before.

Here is an extract from a Norton Lilly history which was compiled to commemorate 150 years of operation 1841-1991 (in the U.S.) and which established offices on the Isthmus in the early twenties.

Existing correspondence from 1916 indicates that Norton Lilly protested a series of delays then occurring in the Canal. One vessel, the CITY OF VENICE, took three days in transit, having been forced to anchor at Cristobal and then in Gatun Lake. The New York office inquired, "We would ask you to please investigate the circumstances and advise us just why the steamer was delayed, particularly in these times when vessels are so valuable. We think you [the PCC] will find on investigation that we are one of the largest payers of Canal tolls." Subsequent delays occurred and Norton Lilly protested that "a delay of 5 days for a chartered steamer would mean a loss of \$12-15,000." The PCC later responded that delays [were] caused by extensive dredging" Several years later, in 1920-21, Norton Lilly. Wrote to the PCC and indicated that they might return to the Cape Horn route should Canal rates increase greatly, as was then rumored. They were quickly assured by the PCC that the rates would not increase.

Sounds all very familiar, does it not ! Although the Dollar figure mentioned would be very reasonable at today's values!

As a final illustration that passions were still running high, but this time between the agents themselves. Here is an extract from 1927 of a plea from a local agent to the American Steamship Owners' Association in New York to channel U.S. liner agency appointments to U.S. agents.

The Administration of the Panama Canal for statistical purposes requires from the agents certain pertinent information regarding each vessel transiting or calling at the Canal regarding origin and destination of cargo, its nature and other similar facts which, if used by competitors would be extremely damaging. It is therefore deplorable that American shipping should allow such opportuni-



ties to be seized by the British to obtain valuable information of a confidential nature.

*It is a notorious and well known fact on the Isthmus that the British agents there of American Lines are the most outspoken in the denunciation of American Shipping and service and most ardent in the criticism of the Panama Canal and everything else that is American. Like the rest of the British residing in Panama they can never forgive the United States for having successfully built the Panama Canal.*

*In this connection it would be interesting to learn whether the British agents mentioned above have ever attempted to interest their American principals in lifting cargo at the Canal and whether, if they have, it is offered when the Agent has a British vessel on berth or expected at the same time as the American. Much of such cargo is transshipped at Cristobal for North Pacific or Atlantic ports and most of it is now taken by the Furness-Withy ships unless the Panama Mail has been designated as the on-carrier. Cargo for New York is secured mainly by the Panama Railroad S.S. Company and it is inconceivable that they would divert any to another line, even if they were its agents.*

*I do not know of a single instance at the Panama Canal of a British Line having an American Agent.*

Well, Capt. Payne's fears were not realized, despite Norton Lilly's threats to go via the Cape, traffic has continued to increase, and the Brits did not monopolize the business! However, in contemporary times I am sure the Canal has considered us at times as a recalcitrant group of misfits! Perhaps they are right. Notwithstanding the pressures which generate when problems and congestion occur at the waterway the Panama Canal Commission makes every effort to keep us informed and provides regular opportunities for the "Camara" to ventilate our views and concerns. The Administrator, his deputy and their officers are all very accessible on a daily basis.

But the industry is facing severe challenges as expressed in a recent BIMCO article.

#### BIMCO Weekly News (NO. 26 -25 JUNE 1997) DISCUSSION ON COMMISSIONS

*Argentina's Centro de Navegacion has recently expressed concern to BIMCO about a disturbing situation which has been developing between liner owners and their local agents.*

*The fierce competition between different lines, the inability of conferences to level the situation and their subsequent disappearance due to the sharp drop of freight rates, as well as the ensuing fall in agent's commissions, have been accepted facets of the industry for some time. However, several new developments threaten an agent's income even further.*

*Originally, the freight rate covered the cost of transport and all associated costs and the commission was usually 2.5% to 5.0%. However, recent exceptions to the total freight rate have led to the splitting of freight rates into "net freight" and "surcharges", where agents receive commissions on only the net rate.*

*The surcharges category, on which no commission is granted, is continually gaining an even greater proportion of the total freight, leading to a further decline in agent's commissions.*

*The drop in total freight rates and the later appearance of "surcharges" has, according to Centro de Navegacion, limited the agent's income beyond reasonable levels.*

*Centro de Navegacion is therefore proposing that owners agree to including "surcharges" as part of the freight, thereby allowing agents to obtain increased commissions and ensuring their survival.*

*BIMCO regrets the deplorable conditions in the freight markets that fierce competition is causing for owners and agents worldwide.*

*It is difficult to foresee any meaningful improvement in the short term and, until the pendulum begins to swing back, the situation of operators and their often long-term agents may continue to be difficult.*

The agents at the Panama Canal are an integral part of the local maritime industry, indeed are part of Panama's history, and we look forward to

working with new administration, providing input, and yes, criticizing constructively if need be, in the new century.

• *Michael Ross is President of the Panama Chamber of Shipping (Cámara Marítima de Panamá)*



2000

### Introduction

The Universal Congress of the Panama Canal is the appropriate event to present before you, the representatives of all the elements involved in the international maritime industry, some relevant aspects concerning the Panamanian Open Registry, a worldwide leader.

### Evolving Toward Perfection

The evolution of the Panamanian Open Registry sets forth the effort, persistence and professionalism of all Panamanians, who have, in one way or the other, been part of the 72 years of experience that are the fundamentals of our success.

Throughout 72 years of continuous services, the advantages of the Panamanian Open Registry have progressed towards the optimization of the quality in the services offered to our users.

Nonetheless, some might wonder why the Panamanian Open Registry is number one in the world. I will expound on some of these reasons:

The registration procedure is unique and simple, which allows for the registry of a ship, in normal conditions, within eight (8) hours.

We offer reasonable fees that are highly competitive in comparison with other countries.

In regard to the fees, it is worthwhile to remark on the positive effects of the fiscal incentives that have been achieved by this administration through Law 36 of June 1995.

In summary, this Law offers the same shipowner or a shipping corporation, a set of substantial discounts on the order of 20 percent from the registration fees for three or more ships representing a total of 50,000 to 100,000 gross registered tons (GRT).

This law also provides that groups of vessels (three or more) that exceed 100,000 GRT shall be granted reductions up to 50 percent on registration fees and up to 50 percent on the annual levies or duties paid.

Still another relevant aspect is that the Directorate General of Consular and Maritime Affairs (SECNAVES) may waive fees to the groups of vessels representing more than 100,000 GRT, for any duties that have been paid in another registry. Such waiver shall apply to the same fiscal period of the first year of registry, inasmuch as the owner

guarantees keeping the vessels registered under the flag for a period of at least four consecutive years after such registration.

The elimination of the consular invoice requirement, in abeyance with the guidelines established by the World Trade Organization, eliminates the unnecessary paperwork as a benefit to international business.

Likewise, Law 36 of 1995 offers better incentives to the officials in the Consular Offices, encouraging them to work beyond duty hours in order to surpass the fiscal collection objectives.

The effects of this Law are perfectly tangible, demonstrating that the Panamanian maritime administration has succeeded in the strategies designed for the attraction of vessel registries and the strengthening of the Registry.

The system of Ship Mortgages and the Law of Incorporation for Corporations are two additional juridical elements supporting the Panamanian Open Registry. The Ship Mortgage system insures the credits for the construction or exploitation of the vessel; whereas, the Law of Incorporation for Corporations allows for the privacy of the name of the proprietor or the proprietors and the exemption of duties from the utilities generated outside the Panamanian territory.

On the other hand, the free nationality of the shipbuilder, the exemption from a minimum tonnage prerequisite for ships less than 20 years old; the exemption from taxes, are also advantages which contribute to the Panamanian Open Registry position as number one in the world.

130 consulates represent Panama around the world, 61 of which are mainly dedicated to Merchant Marine affairs. This facilitates services to the Panamanian merchant marine and growth of vessel registrations.

### Statistics of the Panamanian Merchant Marine

The Panamanian Open Registry is constituted by 13,717 vessels representing 111.2 millions GRT, according to statistical data from the General Directorate of Consular and Maritime Affairs which includes ships with less than 100 GRT.

During 1997, 220 newly constructed vessels have been registered, a fact which strengthens the Panamanian Merchant Marine.

Concerning the type of vessels, 6,014 cargo are predominant, followed by the of 2,165 recreational yachts; 1,345 tankers; 858 fishing vessels and 651 tugboats, among the most significant figures.

Regarding statistics, it is important to make reference to those appearing in the Lloyd's List, a specialized magazine in the maritime field, that places Panama as the leading country, based on the 1,000 gross tonnage registry. Among the ten most important countries are Panama with 4,306 vessels, Liberia with 1,610; then follows Cyprus with 1,569, and Bahamas with 1038.

As a registration office, SECNAVES has generated the most significant number of registrations with a figure of 1,464 ships through 1995, 1996 to this date.

In this respect and throughout the same period, the Consulates of Tokyo and Kobbe are outstanding with 550 and 164 registrations, respectively.

### **Collection**

For the Panamanian economy, the economic activity of the Panamanian open registry represents a major item in the budget. Parallel to the behavior of the Merchant Marine, the collections have also kept an increasing pace of growth with very positive projections.

During the present year, 30.7 million dollars have been collected, a figure which surpassed the collection last year during the same period by 4 million dollars.

### **Accomplishment and Projections**

In the Panamanian Open Registry, the new accomplishments imply a new projection.

We have already accomplished the initial stage of systematization of the Directorate and we plan to have completed this by the end of the year, so that each official may obtain the information he requires on his own working place.

This systematization includes a permanent communication with the Merchant Marine Consulates, the Bureau of Maritime Security in New York and the Permanent Seat (Representation) of the Republic of Panama at the International Maritime Organization in London, through INTERNET, e-mail and the Hexagon system. Likewise, it is sig-

nificant here to remark that SECNAVES offers a 24-hour service, which permits us to supply the demands of Eastern countries and Europe, despite the difference in working schedules.

Thanks to the collaboration of the International Development Bank, we have achieved the elaboration of a single form for all transactions required for the registration of vessels. At this point, the form is on a trial process and we plan to use it officially within a period of six months, approximately.

We have strengthened the fight against drug trafficking in ships under Panamanian registry, through the effective coordination and exchange of information with other countries. In this aspect, we plan to continue with the application of sanctions and cancellations of the vessels with are involved in this type of felony.

Committed, as we are, to the agreements we have as members of the International Maritime Organization (IMO), and as subscriber to the Covenants issued by this high organization, we have started a process of training for the technical personnel, to enable them to supervise the ISO 9,000 and the International Safety Management (ISM) Code.

We cannot dismiss the fact that the application of the ISO 9000 regulations imply an internal reorganization of the system, since the purpose is to insure that the services offered may satisfy the expectations of the users.

Since one of our objectives is to optimize the quality of the ship registration services, the ISO 9,000 becomes the required regulation to keep our criteria concurrent with the international reality in this field. Besides, Panama complies with the Resolution of the International Maritime Organization A-739 of November 4, 1993.

Within this area of the application of Conventions and its amendments, we are also in the preparation stages and the training of the personnel of the Technical Department in this General Directorate for the application of the STCW 78 and the 1995 amendments.

The facts which justify the revision of STCW78 in regards to the organization on board, the new training methods and the changes appertaining the training of personnel, coincide with our posi-



tion as a maritime administration, convinced as we are of the permanent training and the professionalism required as a culture of maritime security.

SECNAVES, through its Maritime Safety office in New York, SEGUMAR, performs annual safety inspections to Panama flag ships. From 1994 to 1996 these inspections have increased by 30.54 percent.

Currently, the Panamanian Registry has 370 inspectors around the world. If we compare the first half of 1996 to the first half of 1997, we can see that there has been an increase of 11.55 percent on the number of annual inspections performed this year.

The Panamanian Maritime Administration participates in the port state control program through the Vina del Mar Agreement. This instrument was developed under the sponsorship of ROCRAM, which is a regional cooperative operational network of countries in America and the Caribbean.

Finally, we wish to convey, as representatives of the Panamanian Open Registry and as a member of the Maritime Sector of this country, our conviction that because of our historical legacy as a maritime nation, because of our geographical position, and because of our dedication, Panama will reach optimization in the development as a center of multiple services par excellence.

*• Abraham Sofer B., LL.M., ACI Arb, is Director General of the Directorate General of Consular and Maritime Affairs (SECNAVES) of the Ministry of Finance and Treasury*



**PANAMA AND THE MARITIME SECTOR:** Transcript of the Question-and-Answer Period:  
Steamship Agents and the Canal (Past and Present)/The Panama Registry

**Speakers:**

**Michael Ross**

*Chairman, Panama Chamber of Shipping*

**Abraham Sofer**

*Director General, SECNAVES*

**Panelists:**

**Philip Embiricos**

*Director, Embiricos Shipbrokers Ltd.*

**Christopher Horrocks**

*Secretary-General, International Chamber of Shipping*

**Patricia Martin**

*Director, SEGUMAR*

**Ivette Ng de Jaen**

*Technical Director, National Maritime Commission, Ministry of the Presidency*

**Moderators:**

**Christopher Hayman**

**H.E. Olga Bosquez Poveda**

Mr. Hayman:

I would now like to call upon one of our panelists, Philip Embiricos, who has already been introduced, to add his comments on the topics that we have been discussing this morning. Philip, I believe you have some slides to show?

Mr. Embiricos:

Good morning, I am sorry to burden you with another little speech, but I will try to be very brief. I came here to talk about flag and the first thing I did when I came here was to look for the Greek flag and I could not find it. And I threatened industrial action with my friend Fernando Manfredo and miraculously it appeared just now, so it is sitting very close to the American flag, so I can now talk and I will try to be very quick. I mean, we heard from President Betancur and the texture of the flag, and I think that is what you have all to think about, the quality of the Panamanian Flag. Now, you have the largest fleet in the world, therefore, it is incumbent upon you to have the best quality flag, or as best as it is humanly possible: we are never perfect. And your problem is very much the problem that the tanker owners had a few years ago after Exxon Valdes. The media became very sensitive to oil tanker owners and everybody was treated as substandard, rust buckets, etc., etc. So, it was incumbent on the industry to start searching for some form of controls to try to achieve a better control of their quality, and I would like to ask for the first slide. There it is.

You can see this slide, over there, and it is drawn like a chain. In other words, to obtain results, you do not need to work in one direction. You have to work in many, directions. And, in fact, all those actions are interrelated and the chain is only as strong as its weakest link. And as you can see here, we have ISM, International Safety Management Code, which has been talked about before, and which is



really the peg of the quality of the safety management of ships. These regulations now are going to be mandatory by July 1, 1998. On the other side, you have company .....in terms of ..... These are sort of safeguards which the oil companies started putting in, and they have their own inspection, regardless of our inspection, which might be carried out by the flag or by the port, the ports. And that is the port's control. And finally, we tried to develop more stricter and stringent service. This was developed, very much under the impulse of INTERTANKO and OCIMF who is the oil companies forum, and with all these things, we were able to actually achieve a much better quality. If you look today at the number of accidents of tankers, they have been much reduced. The quantity of spillage has been reduced, and in fact, because we cleaned our act, the action of the press is not so derogatory any more. And I think this is what Panama should try to do.

Let us have a look at the next slide. Yes, there we are. These are the detention rates of the Panama flag, of open registries, during the years of 93 - 95, and as you can see, Panama is well above average, although the average does not figure here. But if we look at the next slide, which is 1995, what you can see is that Panama shifted columns, really, it is getting into the good boys' club. Whereas on the left-hand side you have, what I would call, the people who are really in trouble. But what you should consider is that Panama is still much higher than Liberia, its main competitor, and it is also higher than the average of European Union. Therefore, I think that you should try to achieve some sort of controls, a quality chain, which I have titled the Panama Quality Chain. And foremost there, you have the flag state control, and we are sure that SEGUMAR is very intense in achieving more inspections and I think that those inspections should be concentrated into some key ports like Rotterdam, Singapore, of course, Panama, where so many ships come through, and somewhere in the United States, whether it is New York or the Gulf, and wherever they think that they have the loose cannons.

The other thing that I think is important--we heard from Mr. Sofer how quickly you can register a ship--but sometimes I think maybe one should verify that the people registering ships have actual adequate insurance, because that is a very good pointer as to whether you have trouble or not. Next, which we talked before, is the ISM, where I think Panama is making some progress.

And the other thing, which is the last link in the chain, is classification society selection. In other words, Panama has an agreement with various classification societies to provide certificates, trading certificates. And I think that by doing an analysis of the detention rates they might be able to find out that certain classification societies are incurring in high percentage in those detentions. Therefore, it might be advisable, at some point, to stop wanting people that, you know, if you come and register your ship with such classification, we will not take you. Or, you are with this classification, we suggest you change, because if within a year or a year and a half (you give them a good period) you are still with that classification, we will be forced to withdraw you from our registry. So, and all this should be done within a unique entity. And I prepared, of course, these slides, when I was in London, totally unaware of what the Minister was going to talk about and I quoted the Panama Flag Administration, but it is the Panama Maritime Administration, it is the same concept. As I said, the Panama Flag Administration should mirror the Panama Canal Administration. It should be non-profitable, independent of political constraints, and financed directly by part of the flag used and the fees. And I think that is very much what the Minister was trying to say. He did not say it in the same words, but I come out of this Conference very much confident that Panama is going the right way. And as the French Minister of Henry IV said, the two mammals or "los dos senos de la Francia son la agricultura y la crianza" and I would say that for Panama, the two clusters of success are going to be the Panama Canal Administration and the Panama Maritime Administration.



Mr. Hayman:

You have raised a number of very interesting points there, Philip. On the question on the number of detentions, of course that has to be looked at in the context of the size of the fleet in question, and, on that basis, the record of Panama in the second slide that you showed looks to be quite good.

Mr. Embiricos:

Yes, what the second slide is showing is that the average rate is coming down. Because these are all averages in function of the fleet. In other words, they take the number of ships in the fleet, they look at the detentions, and they make a ratio. But so what that shows is that Panama has made great strides.

Mr. Hayman:

I would like to, if I may, ask Abraham Sofer and, perhaps, Patricia as well, and others on the panel which are interested, perhaps Chris Horrocks and Ivette also, to comment on some of the points which Philip made in his presentation just now, in particular on the question of ensuring, I think there were two or three suggestions that he made, in particular on his last slide, first, ensuring that those who register have adequate insurance; second, the ISM Code point that he made; and then third, the point about classification society selection. Abraham, could you start off by giving us your reaction to those ideas?

Mr. Sofer:

First I would like to give the good news to the audience that beginning this year, 1997, the Republic of Panama is no longer in the black list of the US Coast Guard for detentions. That is, those are very good news and shows us with facts, not with words, that detentions of our ships has dropped sharply. In regard to classification companies, Panama complies with Resolution A-739 of November 4, 1993, of the International Maritime Organization. A resolution by the General Office of Consular and Shipping Affairs obliges all classification companies to comply with this IMO resolution previously mentioned, so we want to mention that Panama only recognizes classification companies having the ISO 9000. The majority of those companies are IACS, but there are others there. Presently Panama has authorized about 21 classification companies, approximately. In respect to the insurance issue, I want to comment that Panama has an open registry that is very flexible. If we start to impose additional requirements, we have to think about it thoroughly to be able to continue being number one as the leading registry. But I do think that in certain necessary cases, such as those with tankers and that type of ship, a possibility should be considered and examined. The example we can mention is the tanker accident occurring in Japan recently, which was a Panama flag ship. I do not know if Patricia has an additional comment.

Ms. Martin:

Detentions of Panamanian ships have dropped because we have increased annual inspections substantially through ports all over the world with the more than 400 inspectors that we have. As Abraham said, we expect to end this year, 1997, with more than 4,366 inspections. They represent 17 percent more than the prior year. This way we try to have ships with the greatest deficiencies to be detained, even by the administration itself before a port state control detains them until they comply by eliminating those deficiencies. As far as the ISM is concerned, we already said, in the previous question, of the ships that need to be certified by July 1 of next year, 1998, Panama has already 27 percent of its ships certified with the ISM. So the Ship Registry is making a huge effort and we are on the right path.



Ms. Jaen:

I think I would like, perhaps to depart a bit from what Abraham and Patricia have mentioned this morning. This morning, when we heard the Minister propose a new Maritime Strategy, the second one of the key development goals of the Maritime Strategy is precisely strict compliance and adherence with international conventions. And I do want to say, for the international audience here today, that Panama, as the Minister posed this morning, will go for top quality clientele that does want to adhere to international standards. So there will be, in the new Authority, a very strong commitment to international standards. This is not to say that we will affect things like fiscal flexibility and manning and things like that, but we do firmly believe and it has been the result of these seven months of extensive consultation, that the ship-owning community who are our customers, definitely want to see a move towards quality as a priority, they want to see certain changes made in the way that we administer things, and certainly SECNAVES is moving within the resources, as the Minister mentioned this morning, within a Ministry structure. And this is why we are moving away from a ministerial structure to a more flexible structure, to financial autonomy and ability to move in the right ways that we see. So we will see a strengthening of the turn that Abraham and Patricia have seen, and the new Authority will definitely move like that. You do not have access to the document that actually went to the Council of the Cabinet of Panama, but that document very clearly states that we will define the national maritime strategy for Panama and that includes, as a top priority for the international fleet, the STCW-7895 amendment, the IGS, the ISM Code, and the other IMO instruments. We will also go, with respect to the fleet, and this in the area of fisheries, we will go towards a more cooperative position with international fisheries authorities, and all of these is definitely within the scope of Part 7, High Seas, of UNCLOS, Law of the Sea Convention. And please remember that the new authority and the new maritime structure of Panama, the new strategy is completely contained within this document and we will try, as best as we can, to comply with that. UNCLOS has been called the Constitution of the Seas, it is the Law of the Republic of Panama since July last year, and we will try every way we can to move in that direction. UNCLOS is the umbrella legislation, then under that comes all of the IMO and the other conventions in the maritime area: ILO, etc. But it has been accepted by the Council of the Cabinet that we will move very certainly in the way of quality.

Mr. Horrocks:

Well, I am glad that Ivette just said what she said. Panama can be proud of having the largest fleet in the world, I think that is unquestionable. But numbers are not everything. And lurking in those numbers, as we have seen from the figures that Philip put up, are some ships which probably Panama would be well advised to see leaving the register. Philip Embiricos showed the 1995 European figures. The 1996 figures came out just ten days or so, I saw them before I left Europe, and Panama is still on the target list for 97 - 98 in Europe, though as he rightly said, the average detention rate is coming down for Panama. But while it remains on the target list, that is a source of intense irritation for that great majority of users of the Panama flag whose vessels are being stopped and subjected to particular port state control inspections. It is not in the interest of any user of the Panama flag to find that his ships are somehow being assumed to be in some way deficient, simply because they are flying the Panama flag and it must be priority number one to bring Panama down below that level in the way, as Philip has said, Liberia has managed to do. That is a significant achievement on their part. There is one other thing I might just mention. Comment was made about the classification societies just now, and in the context of the ISM Code to which reference has been made, and I do not want to get

too involved in the detail of that, I know that there was a, if I can put it this way, a rather negative sign given by Panama when it was decided to use some classification societies, however well they made have gone through their own ISM 9000 processes, but some classification societies which were not members of IACS (and for the benefit of the translators, IACS is IACS, not Ajax in English, nothing to do with the Trojan Horse or the Dutch Football Team). It may be that the IACS membership is in a sense a monopoly--it is, I am being told on my right. I mean, that is the case. But the fact is that it has established a level of corporate credibility which rightly or wrongly has not been conferred on classification societies outside the membership of IACS. And my own view is that Panama's recognition of non-IACS members, unfair as it is on those non-IACS members to exclude them, gives the wrong message in terms of the promotion of a sound and well rounded and efficient register. As that marvelous Carlie Simon song "Nobody does it better," and what I think Panama, like any major open register should be striving for, is to have that as their sort of theme song. When Panama can say genuinely "Nobody does it better," then it has achieved what it needs to achieve.

Mr. Hayman:

On the classification society point, I think Abraham mentioned a total of 21 societies which are accepted by the Panamanian register. The number of IACS societies, I think, is now 40, am I right, Chris? or thereabouts. Perhaps I could put to you, Abraham, and to you, Patricia, one of the points that Chris has just made, specifically about the societies. Can you contemplate and would you consider redefining the classification requirement to limit it to the IACS standard or not?

Mr. Sofer:

First I would like to say that the Panamanian maritime administration requires the ISO 9000 from classification companies. The ISO 9000 is issued by an internationally recognized society. Both the IACS and the Panamanian classification companies that have the ISO 9000, have it from internationally recognized companies. I can mention SGS, a Swiss company with offices in Panama. I know that the process to obtain the ISO 9000 is costly, both in terms of money and time, in order to prepare for compliance with the minimum requirements. The Republic of Panama, the Directorate General of Consular and Maritime Affairs of the Ministry of Finance and Treasury demands the minimum of requirements called for through Resolution 739 of 1993 by the International Maritime Organization. For the time being, we do not intend to be restrictive with only being an IACS member, but want compliance with all IMO requirements, whether members or not of IACS. I did want to point out to all, the public in general and Mr. Horrocks, that Panama was elected in November 1995 to the Council of the International Maritime Organization. In November 1997 we expect to be reelected in the same Council, category C. That the Republic of Panama has the support of countries as important as the United States, Great Britain, countries of Asia and Latin America, from Africa also, means that the maritime administrations of those countries recognize the effort that is being made by the Panamanian maritime administration to implement all those measures related to maritime safety.

Mr. Ross:

As a steamship agent, probably we are always a little bit parochial in our view, but I think there is an operating dimension here for vessels transiting, referring to what Mr. Embiricos said and "Doing it better" as Chris said, but I think we do not want to turn this into a sort of Ayatollah state for transiting ships and everybody is being inspected and creating havoc with the transit schedules. So, some balance, I think, should be applied for transiting vessels and if they get an intermediate transit,



Panama

perhaps, get it on the other side, but I can see this drifting into quite a headache. So I thought I should mention that.

Mr. Hayman:

Any further comments from the panel? Patricia, would you like to comment?

Ms. Martin:

Regarding IACS members, they are very good friends of Panama too. It does not mean that if the IACS inspected the vessel or certified the vessel it will not be detained. Those vessels, of those classification societies, get detained so often as any other organization, and they are IACS members. I do not agree of giving the opportunity only to classification companies members of IACS and not other companies, which as Abraham said, comply with IMO's international resolution 739-A, which specifies all requirements that a company must have. The administration provides the certification to the company as long as it complies. All those that are recognized by Panama comply with that international requirement of IMO. While IMO, as an international organization does not tell us what company should not be there, I do not think that we should even think of eliminating it.

Mr. Embiricos:

I think, you know, we should be aware that more and more there is selective targeting. In other words, for flags that have high detention rates, the chances is that you are going to be inspected and over-inspected. And it does not matter whether your ship is good or bad, you are going to be inspected. And as somebody said, well, as Michael said, well, you know, there is going to be delays. But, you know, it does not matter whether you are in the Panama Canal or whether you are in Singapore, or wherever you are, I mean, you are going to be delayed. Now, if you are a bona fide operator and you operate a good ship, you are going to get actually fed up if you are stopped all the time. And after a while, you may seek to change your flag. So I think, you know, this is pure philosophy. It is actual practical reaction of an operator. So I think what Chris has said and what I have tried to say or tried to introduce is this type of thinking. You have to start thinking very closely on what your priorities are. Because in the long run, you may be the first register now, but if this selective targeting starts operating more and more, and it was started by the Coast Guard, and it is catching up, then you are going to find that some very good owners, and the creme of the Panama flag is going to leave and you are going to be left with the bad people. It is the other way you have to go around. You have to try to identify which ones are the rotten eggs and try progressively to get rid of them. That is the idea. And you do this by analyzing your detention rates in function of classification, of type of owners, you know, and many other things. It is really a matter of looking at your statistics and trying to analyze them and finding where the rogues are. And once you have identified certain criteria, then you can start creating another little link in the chain that I was suggesting.

Ms. Jaen:

I think it came out very clearly in our seven months of discussion, and particularly we sat at DG VII in Brussels with the European Commission. They were very clear and very generous to spend a whole afternoon with us explaining what will happen as of July 1 next year when the ISM goes into force. The system is such that definitely as Chris and Philip have indicated, shipowners will be targeted, they will be targeted and we do not wish a good bona fide Panamanian shipowner to be subject to any kind of inconvenience, because, of course, if they are detained just because they have



an X flag, they are going to get a bit upset in the end. This was very clear to us; extremely clear to us. They detailed the procedure exactly how it is going to go, exactly what is to be expected, they showed us their computer system and how these operators are actually going to be, I think, prosecuted. And it was a very, poignantly point made to us. If the Paris Memorandum is, you know, of no interest to us, or we feel that it is not O.K., in November this year they are getting together with a Tokyo Memorandum so that they will also implement the ISM Code effectively as of July. There will be no delays. There will be no letdown. This is a point very well taken. We understand it and I think that we will move to try to keep those owners who are responsible in series. The other component of this maritime safety issue that we are discussing here today is actually its relationship with the Panama Canal. As you all know, approximately 17 percent of all the ships that transit the Panama Canal are Panamanian Flag, so we have a direct correlation there. These vessels are not only in some other people's ports, 17 percent of them actually come through here. And if they are no good, then we will have "no good" shipping through here. And I think must of us Panamanians in the audience would feel odd if we ever have an accident that affected our beaches, which are right around the corner at the entrance of both Balboa and Cristobal. I think Panama for the future will define a maritime safety standard that is good enough to attract those operators who are definitely within the squeezing margins that they have mentioned in this meeting, also respect international norms. And I think that standard, although it is a very delicate balance, we will have to strike it in the interest of providing one complete package, a unified policy for maritime safety that reflects the commitment of Panama as a Flag State, as a Port State, as a Canal administrator, the integrated maritime sector, our strategy, should be a quality one in the area of maritime safety.

Mr. Hayman:

(Terje Gloersen, Norwegian Ship Owners Association) According to IMO, class societies must comply with their Assembly Resolution on recognized organizations. How many of the 21 societies that you mentioned, Abraham, and organizations recognized by Panama satisfy the requirement of this resolution?

Mr. Sofer:

As I understand the question, in my saying 21, I refer to an approximate number, not exactly specific, since there could be a little less or a little more. I did want to comment that early this year we cleaned up the classification companies recognized by Panama. All those companies that did not comply with the ISO 9000 and with Resolution 739 were canceled from the Panamanian open registry. The International Maritime Organization, IMO, demands a minimum of requirements, but it is the Panamanian administration which provides recognition to that classification company. I understand that the majority of the IACSS are recognized by Panama. We can mention American Bureau of Shipping, Lloyds, Norske Veritas, Bureau Veritas. Rinave has not yet been recognized; at this time their request is pending. Russian Register of Shipping is not recognized. They are recognized on a case by case basis, in accordance with conditions. We are trying to take measures and in that sense I want to say that I have personally coordinated this with the IMO Secretary, HE William O'Neil, in order to have compliance with that established by IMO.

Mr. Hayman:

There is a question here for Michael Ross, which I would like to bring in now. He has had an easy ride up to now, so Michael, it is your turn. There is a well-established, I guess, legal precedent of the



Maritime Court of Panama that establishes that agents' business is clearly distinct and separate from that of their principals, i.e. shipowners, so they may not be sued directly or be served process of law for acts of shipowners. Do you have any comments on this precedent of the Maritime Tribunal of Panama?

Mr. Ross:

As far as I know we are not liable for the faults of our masters, of our principles, although some years ago, it is not too relevant now, but with the National Port Authority, we used to get very old invoices, some of them going back fifteen years, and then sometimes our poor principal had long gone bankrupt, or disappeared, or changed trading and we were getting these bills and we were being forced to pay them. So, it is rather a gray area. I know it is more defined in Spain and places like that, where the agent is responsible for whatever misdemeanors his principal commits. Here it is a little gray. Although I know people view the agent... third parties here look at the agent... it is rather like unfortunately in an airline crash, nobody sues the travel agent. But here, if something happens, or you cannot pay a bill on behalf of the principal, they immediately say that it is the agent's responsibility. And we have issued a few papers on that to the Chamber of Shipping, trying to educate people locally, including ourselves. So I can only say, most of us, I think, have P & I coverage for these contingencies too. So there is a certain gray area.

Ms. Bosquez:

(American Bureau Shipping) We have here an interesting question relative to the port state control, mainly in respect to the functions of Panama as a port state control. In that sense, American Bureau of Shipping asks about the relationship existing between the functions of Panama as a port state control and Canal activities. If they would be applied on the arrival of ships at Balboa, Cristobal or in the Canal. Perhaps in this sense it would be worthwhile to make a brief comment about the capability we have developed in the formation of inspectors and the regional agreements that IMO has encouraged to the effect of establishing uniform inspection standards so that countries can comply with their functions of port state control and the role that Panama is prepared to do.

Mr. Sofer:

The Republic of Panama is signatory to the Viña del Mar Agreement, ROGRAM, which obliges our country to inspect 25 percent of foreign flag ships arriving at our ports. Concerning the Panama Canal, we are very cautious when we order the inspection of a ship that is transiting the Canal, since we want, as Michael Ross mentioned, to provide free transit to ships. There are cases where an inspection of the ship can be made. We always try to do so at the entrance or the end of the transit in order not to interrupt it. We also authorize certain inspections through the Technical Department of the General Office. Those inspectors have received training thanks to the International Maritime Organization, which has sent to us this last year three different experts to train the Technical Department of the General Office. Patricia, would you like to expand?

Ms. Martin:

The technical personnel of SECNAVES have traveled to Mexico and Brasil to receive port state control training as well as training on the annual inspections made by Panama as a state flag.



Ms. Jaen:

If you allow me Olga, yes, thanks. I think that this precisely illustrates one of the benefits of the strategic objective number one in the National Maritime Strategy. The unification of the national maritime sector, in preventing the proliferation of authorities that have to do with detentions, etc., is one of the benefits of this strategy. And precisely, under the Merchant Marine Office, the General Marine Office, as it is being conceived, will have very close coordination with the Panama Canal to cause the least possible disturbance. The Panama Maritime Authority will have as a goal of its execution that of serving, as I mentioned it this morning to Dr. Eloy Alfaro here, as the adequate backdrop to allow the activities of the Panama Canal to develop in all their splendor, with a minimum of inconvenience and that will be, if I may say, the fundamental role that the new Maritime Authority will play. We will not have discrepancies nor problems and I am sure, I say, I have worked at the Panama Canal Commission, and I am sure that we will have the ability to coordinate when it becomes necessary. In any case, the rest--in accordance with Viña del Mar--25 percent of inspections, will be made on arrival at the port and except for very few exceptions, when it is strictly necessary, it will be made at the Panama Canal.

Mr. Hayman:

(Professor Woo, Oceanic University of Taiwan) How effective do you feel that the reduction in registration fees by 30 to 50 percent for those vessels that you mentioned, how effective has that process been? Let me remind you that the number of ship registrations dropped in 1997, as it showed on your graph. So I wondered if you could just comment on that registration fee area.

Mr. Sofer:

Many thanks to Professor Woo of the Oceanic University of Taiwan. I wanted to say that the 1997 charts do not show that the figures have dropped, but that the year has not yet been completed. There are still several months to go to end the year. We will close at the end of December or beginning of January of next year. I did want to comment that Law 36 of June 1995--for which I feel proud, to have formed part of my team with Alejandro Kouruklis, Fernando Zolorzano, in developing this law--has brought big benefits to the Panamanian treasury. I can show this with tangible facts. In 1993, the Directorate General of Consular and Maritime Affairs collected \$42 million. In 1994, beginning this administration in September, the year ends in December with \$44.8 million. In 1995, SECNAVES' collection was \$47.9 million and in 1996--the total was \$44.1 million. We want to say that in 1997, to date, the collection is \$30.7 million. Approximately, by year-end the amount is estimated between \$48 and \$50 million. Now, the question is why the total in 1995 was higher than that of 1996--\$47.9 million versus \$44.1 million. The answer is that the administration decided to follow the guidelines of the World Trade Organization, WTO, and eliminate the consular invoice. That is a revenue that was received through the Directorate General of Consular and Maritime Affairs. An alternate tax is created, called fee for Customs services, through the General Customs Office. That is, if the Consular and Maritime office is prevented from receiving \$6 million for the Treasury at the end of the year, the state continues to receive it through the General Customs Office, which is also part of the Ministry of Finance and Treasury, but is paid here in Panama. Instead of having a long-delayed, bureaucratic process of waiting for the signature of a Consul--the consular invoice--this method makes commerce easier with a more expeditious delivery of merchandise.



Canal



It is a pleasure to be at this important conference, at one of our principal maritime crossroads - a place where an enormous number of our global routes converge.

When this magnificent waterway was built, like the one constructed between the Red Sea and the Mediterranean some thirty years earlier, it changed the face of world shipping. Regarded at the time of its inauguration as one of the wonders of the modern technological world, it provided a number of beneficial changes that we continue to recognize as important, eighty years later.

It made shipping safer and more reliable, reducing the need for long ocean passages around the Cape of Storms that had taken the lives of so many seafarers over the centuries. And although it was not regarded as quite so important in an era before global warming was recognized as a danger, the Canal has saved enormous quantities of bunkers and been both environmentally and economically beneficial!

We have had men on the moon and we are rather more blasé about technological developments today, but the Panama Canal, eighty years on, still retains the power to impress, perhaps more than it ever did, with the far higher proportion of ships which are of near-Panamax dimensions and require precise handling and scheduling as they transit the waterway with such efficiency.

Within a few years of the opening of the Panama Canal, the international shipping industry had learned to use it to its greatest advantage, although perhaps we have always taken it for granted. It is always there, always available, and although we might complain at the occasional hours spent in the anchorages in the Pacific and Atlantic awaiting transit, it is a period of every voyage that we have learned to rely upon.

In short, the Canal makes a vital contribution to international shipping and we have no doubt that it will continue to do so, despite the alternative routes that are available and the increasing numbers of ships in the world fleet which are too large to fit through the chambers.

We continue to value the waterway for a number of well-defined reasons, which no doubt will be appreciated equally by those who will become

the "new management" of the Canal in 1999, as they have been by the existing Authority.

Firstly, world shipping values the Panama Canal for its stability. We have been able to count on those operating the waterway for their constancy, in a maritime world which has been extraordinarily volatile. We know, from one year to the next, that the Canal will be available to us 365 days a year; we know the extent of the disbursements which will be required for a transit and the basis upon which all our dues and costs will be calculated.

In the past, we may have complained about the singular policies of the old Company which insisted on re-measuring our ships on the occasion of their initial transit and calculating our dues to their own unique system, but at least we then knew where we were. In our world of currency fluctuations, and infinitely variable costs, which have to be balanced against limited earning powers in a highly competitive market, we appreciate these small mercies and hope that this important element of stability will be equally valued in the future.

Secondly, international shipping appreciates the Panama Canal for its dependability. We know that once we have put our ships into the hands of the Authority, they are in the hands of experts and will be safely "re-delivered" in the opposite ocean, without any untoward event. We know that the remarkable system works, and that the controllers and the pilots, the tug skippers and locomotive drivers and their respective crews, are well trained and committed to their tasks.

They always have been, and we are confident that this regime will continue, enhanced by the exciting program of improvements that are currently in train.

And as shipowners and operators who send our ships into all the ports of the world, many of which frighten us and our captains considerably, we appreciate professionalism when we see it so dependably exhibited in this waterway. Both dependability and availability are words that suitably describe the Panama Canal as we know it today, and we are critical customers who recognize the value of service.



Thirdly, we operate in a world that is justifiably consumed with the importance of transport safety, and this preoccupation is also our considerable concern.

In the approaches to the Canal and throughout its length, large ships operate in close proximity to each other, as they are manoeuvred between the stone walls of the lock chambers and throughout the narrow confines of the cuts.

The Canal and its waters has been, from a statistical standpoint, one of the safest places for a ship to be and we are delighted that safety continues to be of prime importance and your constant preoccupation. I have to say that BIMCO, and other shipowners' organizations are becoming increasingly concerned at the numbers of accidents in port and pilotage waters throughout the world, and at the awesome liabilities we face as a result of many of these human errors. All of the actions that the Canal authority is able to take to improve safety, we endorse, and your aims for safety.

Stability, availability, dependability and safety all seem to be set for a further enhancement, with the present program of modernization we see taking place in the Canal today. We appreciate this investment in systems, communications, lock and ship-handling equipment that will be to our ultimate advantage, giving us quicker transits, reduced delay and more precise programming which will assist us in the "just-in-time" world we inhabit.

We also recognize that these various enhancements have a separate function, in that they keep the Canal competitive, and represent a refreshing identification with the market-oriented industry in which your customers operate. We have always, at least in modern times, run our ships in a world of terrifying competition, and of course, the Panama Canal also faces the same sort of environment.

Forty, thirty, even twenty years ago, the shipowner used the Canal because there was no feasible alternative. For instance, a cargo from the Pacific to Atlantic coasts of the Americas was, what might be described as a "captive" market.

Forty years ago, scale economics had not yet advanced to such a stage that many ships were too large for the waterway. Frankly, you were in the position of a happy monopolist -- the single store that everyone had to pass.

Today this situation has completely changed and the operators of any canal used by international shipping has to bear in mind their position in the marketplace, just as we their customers are forced to concern ourselves with competition, costs and efficiency.

The Asian shipper moving goods to the Eastern seaboard of the United States is in the happy position of making route choices these days between a quick sprint across to the West Coast on a post-Panamax containership and a double-stacked train to the destination, or a direct sailing on a smaller vessel that passes through your magnificent waterway.

The availability of pipelines, cheap intercontinental road transport and the large bellies of Jumbo jets for light, high value and time-critical cargoes, have all impacted on the Canal and its traditional users. The Canal may remain a vital link in the intercontinental transport chain, but it cannot take the customers for granted and has to sell to them with the same enthusiasm and commitment that is exhibited by those charged with filling our ships in our highly competitive market.

How the world does indeed change! We have tunnels under the English Channel, bridges connecting Baltic countries once dependent solely on sea transport, fast ferries and soon we may expect ships which will change our entire view of traditional transport economics. Your customers have to change with this world, or perish, and as I am sure you are aware, an eighty five year old waterway has to do exactly the same.

You might feel somewhat inflexible; with your concrete infrastructure and mountainous terrain, the constraints of your lock chambers and the other physical limitations you labor under. Nevertheless, the shipping world that provides your customer base will respond to marketing and financial strategies that prove that you understand what we are about. We operate today in the most fiercely competitive climate that those who have served in the industry for forty years or more can ever remember.

We have to be sharp to survive in such an environment, and we have learned to control our costs and hone our efficiencies to razor edges. Customers of BIMCO's one thousand shipowning





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members become ever more demanding, requiring on the liner berths precise scheduling, same day sailings, guaranteed deliveries and an extraordinary standard of close supervision of their cargo from origin to destination.

In the tanker trades there is a fanatical (if completely appropriate) demand for environmental excellence, product purity and safe transport, and such demands are replicated everywhere our ships trade.

For our part, we can only deliver these efficiencies to our demanding customers, if those who provide services to us, similarly give us improved value for money.

In such a climate, you should not be surprised that shipowners everywhere are looking for enhanced services and improved efficiency, at keen and competitive prices, and this goes for authorities who provide canal transits, just as it does for those who sell us port services, engine room spares, towage contracts or bunkers. And we will go where we get the best value for these expensive purchases. It is a harsh world, but the only one we know.

So we are encouraged when we read that this wonderful waterway is engaged in a lock mechanism improvement program and locomotive investment that will make the chambers operate with greater efficiency. We are cheered to be told that better communications and vessel traffic control will enable transits to be made more expeditiously.

In our demanding trades, even an hour saved in a three-week passage, is worth hard cash to BIMCO members. The reduction, or elimination of waiting time prior to transits, is a goal that is worth striving for and will further delight us.

We will also appreciate the sort of marketing that we ourselves have become adept at, as we seek to seize market share. We have had to become ruthlessly price-competitive and while we might deplore the bargain rates we offer, we have very little choice, because this is what our customers demand as a condition of gaining business.

And while it might not be appropriate for the great waterway of Panama to initiate a "buy three and get one transit free" campaign, it is important to recognize the realities of the markets we operate in, and to ensure that your market share is not lost to the double-stacked trains, pipelines and the

ocean transits around the capes. The competitive position of the Panama Canal is an important consideration with every review of your pricing structure.

And of course the waterway is not the only consideration in this increasingly maritime-conscious country. BIMCO notes with complete approval and enthusiasm the decisions of the Government of Panama to enhance the maritime infrastructure.

The growth of a complete service center for shipping management and operations, alongside the great waterway and the rapidly improving port system is good for international shipping and something our association can unreservedly identify with. It gives world shipping more choice and greater efficiency and it is to be welcomed in a maritime world that can never have too much genuine professionalism.

For our part, BIMCO is very happy to do what it can to assist you in these aims. We would welcome more Panamanian members and associates who could bring much to us and who I am sure would profit from sharing in what we are able to provide in terms of information and technical assistance. This conference is being held in an important part of the maritime world at a significant time both for Panama and international shipping. We will hopefully transit safely and sail off together in company. Excellencies, ladies and gentlemen, thank you for listening.

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**Panelists:**

**The Honorable Alberto Aleman Zubieta**

*Administrator, PCC*

**The Honorable Joe R. Reeder**

*Chairman, Board of Directors, PCC*

**Fernando Manfredo, Jr.**

*President, Organizing Commission, Universal Congress of the Panama Canal,  
and Former Administrator, PCC*

**Bruce Farthing**

*Consultant Director, Intercargo*

**Victor Pino Torche**

*Director, Compania Sud Americana de Vapores, S.A. (CSAV)*

**Matthew Sams**

*Vice-President of Caribbean Relations, Holland America Lines-Westours, Inc.*

**Claus Mohrmann**

*Senior Vice-President, Hapag-Lloyd (America) Inc.*

**Ronald Bergman**

*President, Baltic and International Maritime Council (BIMCO), and Chairman, Nordstrom & Thulin*

**Moderators:**

**Christopher Hayman**

**H.E. Olga Bosquez Poveda**

Mr. Hayman:

Thank you very much indeed for that Mr. Bergman. It's a very good start, I think, to the afternoon's discussion and I would like to start the proceedings by asking the other panelists, whom I have not yet introduced, to comment on some of the things that Mr. Bergman said. Just to refresh your memory we have also on the panel, this afternoon, the Honorable Joe Reeder, who is Chairman of the Board of Directors of the Panama Canal Commission. We have, of course, Mr. Alberto Aleman, who is the Administrator of the Panama Canal Commission and Mr. Fernando Manfredo Jr., who is the President of the Organizing Commission of the Universal Congress of the Panama Canal. And I would like to start by asking these gentlemen, starting with you if I may, Chairman Reeder, to comment on the report card which BIMCO provided for the Canal, concentrating perhaps on the comment that he made in particular at the end, emphasizing the point about defending the Canal's financial independence.

Mr. Reeder:

Chris, as you know, in the last three years we have considered going to the Federal Register in implementing a toll increase. One of the important reasons for that, as I mentioned in my comments a couple of days ago, was to ensure that there wasn't a hidden debt or hidden liability that was passed from the United States to Panama. I think we achieved that, as you know, as has been mentioned and described in the various presentations. We have a seven-year capital investment program that approximates a billion dollars. We believe that is covered by this toll increase and we believe the Canal can't pass without this assurance to the shipping industry. I'm not sure I understand, and perhaps



we'll come back to you on the thrust of this point on the financial independence, if you are going beyond that particular point. OK?

Mr. Hayman:

Mr. Bergman, do you want just to enlarge a bit on the comments you were making toward the end about the need for the Canal to retain its financial independence?

Mr. Bergman:

What I meant was, if the Canal will be in the position to have funds, that they stay in the Canal authorities' hands.

Mr. Reeder:

Well, OK that helps. I think it would probably help to have our Administrator speak to that from the standpoint of the organic law, but probably the most important aspect of that law is the autonomy of the Canal, the separate budgeting of the Canal. I think, basically, the leadership of Panama understands the importance of ensuring that the high maintenance, the high reputation of professionalism of the work force and the infrastructure itself be protected. So, I don't think that there is cause to worry about that, but I would ask Alberto Aleman to describe that part of the organic law that provides that protection.

Mr. Aleman:

First of all, allow me to commend you for your speech, Mr. Bergman, most of all for the part that refers to the quality of human resources present at the Panama Canal. I have no doubt that we have high quality manpower and management personnel. I believe that the quality of work and personnel present at the Panama Canal has been demonstrated throughout this conference. So, thank you very much for that, Mr. Bergman. In regard to the administrative and financial independence of the Panama Canal, it has not only been developed through the organic law, but this was taken up by Panama and placed as part of its political constitution. Panama acknowledges the importance of having an independent financial administration of the Canal and this is shown not only in the organic law, but also in its Constitution. As I mentioned yesterday during my presentation, you can rest assured that the Canal will have the necessary funds to operate, carry out maintenance work and improvements in the measure these are required. I would also like to mention that in the Canal we understand, and we are very clear about this, that we have to be competitive. Obviously, we do not have a monopoly, and that competitiveness that we have to show in the market is what will make the Canal implement systems and turn it into a more safe Canal, a more modern Canal, a more equitable Canal, efficient and trustworthy, providing excellent service to all users in a way that they would have greater added value when using the Panama Canal.

Mr. Hayman:

Thank you very much indeed. What I would like to do now is to start to move to the discussion on the sector-by-sector basis, and I think the first sector that we should address this afternoon is the container sector. A lot of references have been made throughout the last two and a half days to the importance and potential for growth in this area. And speaking on behalf of the container industry we have on the panel Claus Mohrmann, who was until last year responsible for operations of financial responsibilities at Hapag Lloyd headquarters in Hamburg. But in April last year he has brought his experiences to bear in the United States when he assumed his current position as Senior Vice-President of Corporate Operations in Hapag Lloyd America Inc. I understand from Mr. Mohrmann that Hapag Lloyd makes about 40 transits of the Canal a year. It is a major operator in the container



industry, and I know that he has been actively involved in Canal affairs. So, Claus, could I ask you to summarize the position of the container industry on the Canal as you see it.

Mr. Mohrmann:

First, I have to correct you, Chris, it is a hundred calls the company makes and, of course, we make much more if we count also what we do in our corporation services. If I summarize what is the relationship of the container industry to the Canal--and I would like to follow from this what Mr. Bergman said--yes, a very important business partner for us is the Panama Canal. We are, at least in 1995, we were the second largest customer of the Canal, in terms of income. We feel very hard hit from the latest rate increase, because, of course, not only it was a large increase but there was also a change of the regulation base for our industry. We are paying now also for on-deck space--what was our surprise, what was, we feel it is unfair. I've already opened the discussion today, and I would like to repeat what I said at that presentation as well. The container industry needs a reliable service. We are working on a clockwork service, and any distortion disrupts our product, our customers and our cost structure. Also, we are a very fragile customer, as many of our traffics, especially the East-West traffics, have alternatives to using the Canal. The cargo can be diverted from Asia to the East Coast of the US going the other way around the world. It can go by transshipment on rail in the US, where the inter links are becoming more and more efficient. There are on-dock rails developed everywhere and the transshipment from the ship on to a dedicated double-stack rail train is becoming more and more easy. And we are, of course, limited by width and depth restrictions and line of sight restrictions in the Canal. So, this is important to us. We must at some stage seek for alternatives if these factors are not improved for us. If I try to summarize what we expect from the Panama Canal after the transition: we expect a business partner, who reacts to our change requirements. We expect a business partner, who attempts to reduce costs, become more efficient wherever possible and not only passes on cost increases to us in the way of higher tolls. This is all I would like to say at this stage.

Mr. Hayman:

Thank you very much. Alberto Aleman.

Mr. Aleman:

Yes, I'm glad to hear that you see the Canal as a business partner and you can rest assured of that. We will be doing everything that we are doing now to be more cost efficient, and also we know and understand that we are to be competitive. And that is what is driving us, moving us in the direction where we are. We aim to be competitive, to be safe, to be reliable for your business, to be on time, and also we are working towards making a Canal that can provide to you better conditions for your shipping needs. That is what we are looking for in the building of a third set of locks, analyzing the size of those locks, maybe to accommodate not only what we know today as Panamax ships, but basically what your industry is referring to today as post-Panamax. If the economies are there, if the business is there, you can rest assured that we will move in that direction. So we are a system that is going to remain competitive, that is going to be more of a business partner and we will try, indeed, to be very much a business partner that responds to your needs and solves your problems. We are more and more trying to have that open communication. As I already mentioned, I think this has been a great forum for us to have that open communication, to meet face to face with you, the customers, with whom we deal so much. I hope that you not only continue your business with the Canal, but that you double that volume of business. Thank you.

Mr. Reeder:

Chris, if I could just add one aspect that should give comfort, is the announcement that the Presi-



dent made in the last two weeks, the President of Panama, with regard to the successor Board and the composition of that Board. I just wrote down the names of very successful businessmen on that PCA Board. This is a list of some of the who's who in Latin American business: Sammy Lewis, Emmanuel Revilla, Moi Mizrachi, Raul Montenegro, Vallarino, and, of course, your administrator Alberto Aleman. So, responsive to the concern, you have businessmen in the leadership of the successor entity in 1999. I think that should be of some comfort.

Mr. Hayman:

OK, thanks very much. Fernando Manfredo.

Mr. Manfredo:

The concern of keeping the Canal with the best financial administration and at the lowest possible costs has always been a priority. If you compare the number of employees of the Panama Canal at present with the number of employees working in 1979, when I was first appointed, it is almost the same number, although the number of transits has increased, including the number of transits of larger vessels, which need more support personnel. There has always been the concern of keeping costs as low as possible. We can say the same about maintenance costs. There has been a reduction without decreasing the level of maintenance, by using better technology, better materials, which give extended life to the assets. However, we have to keep in mind that the Panama Canal is a business that like any other corporation in the world is subject to external factors, such as, for example, inflation, recessions, competition. Therefore, when these factors are present, they have a detrimental effect in finances, so, there is a need to make some periodical adjustments. For example, when the Treaty was enforced, there was the need to increase the tolls in order to compensate for the additional costs to be paid to Panama by virtue of the Treaty. Immediately after that, we had the benefits resulting from the oil from Alaska. Oil from Alaska increased the number of transits and this compensated the increase in costs due to inflation. There was no need to increase tolls. When the Alaskan oil stopped, this coincided with a period of recession in the worldwide economy and it was necessary to make adjustments to tolls. Afterwards a Canal improvements program required the need to add a small capital factor to the toll rates in order to recover the investment to be made. But, what I want to assure to you is that my experience during my years in the Canal, and what I have seen and witnessed afterwards, is that there is not even an ounce of fat in the body of the Canal because that has always been a permanent concern of the administrations.

Mr. Aleman:

What Fernando has just established is true; however, I also want to say that those toll rate adjustments are not necessarily cyclical, but are peaks and mountains. That, we know and understand, affects the shipping industry. When Panama is able to provide that administrative and financial independence that has been established and of which Mr. Bergman spoke, this will allow Panama the flexibility to handle in a more orderly fashion the adjustments that are required by any enterprise similar to the Canal. This will allow us, for example, to make reserves ahead of time for projects in which we have to make capital investments, something which today is not allowed under the US Federal system. Therefore, we will be able to be more in tune with the needs of the market we serve, and this is important. This is one of the most important factors of that fiscal, administrative and financial independence of the Panama Canal that will allow it to better service the industry it serves.

Mr. Hayman:

Thank you very much for those answers. Let me just go back to Claus Mohrmann. I am sure you have other things to say. I would just like to raise one other issue and ask you to address that. I think



I'm right in saying that in your presentation you didn't actually mention this issue, which I had really been expecting to be quite high in your list; namely, the adjusted approach to containers on deck. Is that because Hapag Lloyd as an operator is quite content to pay that additional charge or what?

Mr. Mohrmann:

Well, I thought we fought the battle last winter when we had the hearings, and we lost it. I wonder whether it is worth now addressing it again as I don't think we can change it. I would rather address other things which are ahead of us, which we can jointly influence to the better. But, if the forum feels differently about it, let's talk about it.

Mr. Hayman:

I think I've been firmly put in my place there. Thanks very much for that.

Mr. Reeder:

Why don't I share with this group, Claus, what you told me off the record. You were in fact successful, in your comment, because you succeeded in postponing for six months the implementation of the tolls and the reason that was important to us at the PCC was the statements that were made, not so much that it wasn't fair to charge. Containers on deck, for some 82 years, have been traveling literally for free. That meant obviously that the other types of cargo had to pay the difference. We really did not hear much on the way of comments that cargo containers on the deck should not pay. The concern expressed, I think you expressed it more eloquently, was you needed time in order to implement, because that was something that you had to factor in and that was the purpose for the six-month delay. But I would say this, I appreciate your passing us on to other issues, but we are always open to consideration, because as time goes on, one of the primary guiding lights in the setting of tolls has been, and I'm rather confident that would continue to be, fairness. And obviously, everyone has a different perception of fairness, but the goal is fairness in here, that containers on deck and the charging for containers on deck is entirely fair and, I might add, consistent with what has been the policy of the PCC and the Panama Canal from the very beginning. And that is charging for volumetric capacity of the ships that carry cargo.

Mr. Hayman:

OK. Thank you very much, Chairman Reeder. I think, Claus, I interrupted you, you were just about to make some other comments. Would you like to go ahead?

Mr. Mohrmann:

I wanted to comment on what do I regard as seeing a company trying to cut at costs structures. To say I have maintained this staff level over ten years, I don't regard as doing that. If I look on the Panama Canal's business volume, the number of transits has increased by just 13 percent over the last ten years. We have so many new technologies, which allow doing workload with a lesser number of staff, cheaper than ten years ago. I would expect to see this reflected in a lower number of head counts doing this job. If I see what the container industry does, we have increased the business and this is going for most of the companies by 20-30-40-50 percent over the period, and I guess small container shipping lines have increased their staff, but most of them have reduced their staff to do this. So, there are other ways of becoming more efficient and just to stay where it was ten years ago in our industry is not good enough. And this we also expect from our business partners, this is what I wanted to say earlier on.



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Mr. Aleman

Yes, I think that and I agree with that fully. I believe the Panama Canal is being very competitive, it is turning into that type of business. We have improved our systems. What we have shown at this Congress is new technology being implemented at the Panama Canal. When there is talk of head counts or the number of people, we also want to point out the great amount of work being carried out at the Panama Canal: maintenance work, improvement work, capitalization work, in such a way that we are not only training our personnel, but also re-training them for the new technology that they will have to use to service the industry. We are going to implement, and we have been doing so for a long time now, the method in which we are going to measure our competitiveness, how we are going to measure our efficiency. The truth is that we are another element in the international transportation system and that element has to be as competitive as the best one. Therefore, we agree that we have to improve, we have to use technology, we have to use new ways of saving costs, in such a way that it is not simply doing things the same old ways and passing on the costs to you, the users. It is our responsibility to be efficient in order to benefit you and ourselves in the measure that you keep on using more and more the Canal, because it will provide you with added value.

Mr. Hayman:

Thank you, you want to come back Claus?

Mr. Mohrmann:

I don't know what your further plan is, Chris. I have a few more detailed things I would like to raise, but I don't know when you would involve the forum here and when you will take the word away from the container industry. Before that, I have some other points.

Mr. Hayman:

Would you like to move away to a different sector.

Mr. Mohrmann:

I don't like it to move away.

Mr. Hayman:

You don't want to move away. OK, well, if you have some more points, I would suggest that you make them now and then we will move on to a different sector, detailed or not.

Mr. Mohrmann:

The points. When I said that I didn't want to discuss again the measuring of on-deck space, it is because I have other points where you can help the container industry without extra cost to you, really.

One thing is guarantee us the draft all the time, that we always can bank on the draft which we have normally in the Canal because any shortage cuts ship's capacity even further.

Line of sight rules are very restrictive in the Canal. I understand that international rules are not as tight as yours; you would give us more space on deck if you go to international rules. I heard earlier today that you want to go to international standards, so do away with Panamanian standards. This all helps to make things simpler, but also helps us to use the ship more. Be a bit generous on using on- deck space if we have problems overloading it, because this is all valuable space, which reduces our per unit costs when we transit the Canal. Why do we have a different measurement system for the Panama Canal? Why can't we use the international one? This is all extra workload burden, takes time, takes resources.



Why after there was a damage and the surveyor has been on board, and our surveyor tells us the ship is suitable to pass the Canal, why are there these different institutions to check this from the Canal authorities' side? Why can't the ship go through based on the surveyor's okay? Why does it have to need another Canal authority's okay to do so, which delays things further, people are not available. This is an extra day again to do things. So, there are small things where you can help, by just adopting the international standard.

Why do we have to get our compasses checked every year, even if we have 200 ships? This is also a small thing, but something special that we only face in the Panama Canal.

Specially, guarantee capacity every week and guarantee a transit every week. This is important to us to run our tight schedules in the most efficient way we can, and if you can support us there, this helps the container industry. Thank you.

Mr. Hayman:

OK. Thank you very much. Administrator.

Mr. Aleman:

The draft guarantee. Even though the Canal has good water reserves, we might experience developments such as El Niño, which we are experiencing right now. And that is something with which nature is not helping us. Hopefully, it will rain and rain a lot. I think that during the years that the Canal has operated, 83 years, there have been a couple years in which the Canal's water draft restriction has been a problem. So, it is not a common problem and, hopefully, we can guarantee that. I can tell you that there are three major bottlenecks in the Canal: 1) the Gaillard Cut. We are currently working on the Cut and expect to have the work ready by the year 2002; 2) the locks. We are now analyzing a third set of locks, and 3) water. We are doing a demand study on water due to the increase of demand. Panama and the Panama Canal, I think, are the world's biggest exporters of fresh water. We export about two billion gallons a day.

Line of sight. That is based on the needs of our pilots to get into those locks. We have been working with the industry and we can continue to work with the industry so that they can have as many containers as they can. We are not implementing this because we just want to burden them; we are doing this because of safety. So, we can work on that and I am sure that our people and your people can work together to find a way to solve and improve on that. But, basically that line of sight for us is important to be able to see.

Damage and survey. I imagine that you are talking when we have an accident; again this is a safety matter. If it is an accident that occurs in the Canal, is that what you are referring to?

Mr. Mohrmann:

An accident prior to . . . Yes, at the entrance of the Canal.

Mr. Aleman:

Prior to the entrance of the Canal? Well, we do have a BLI (Board of Local Inspectors) and we require 24 hours, because there can be a claim and that is how we operate. There is no other body, it is basically part of the Panama Canal.

Mr. Mohrmann:

Why? We don't have the 24 hours.



Mr. Aleman

Well, and then if that is OK, the ship can continue and we are not liable for the damage done to the ship.

Mr. Mohrmann

If the surveyor has been there, if the technician has been there to do this.

Mr. Aleman

You mean the BLI?

Mr. Mohrmann

Yes.

Mr. Aleman

Well, once the BLI is finished the ship can go. We don't detain the ship for 24 hours, that's the maximum time that we require to do the BLI. The 24 hours would be depending on the amount of the damage. If we can go there as fast as we can and release the ship, fine; but we require that the Canal have 24 hours to do the BLI. We don't detain the ship for 24 hours.

Mr. Mohrmann

We had the case that there was nobody available to do this right away, the person just was not available to do it.

Mr. Aleman

It could be a case by case scenario, but then we have to look into that, how we can be more reliable to the clientele. But we try to do this as fast as we can. We understand that the business is to continue, not to stop. The compass checks is a safety matter. Hopefully when we implement the GPS that we are putting in place, that won't be a requirement as important as it is today. I agree, we will look into that. It is a safety matter, if you have two compasses in the ship already checked, that saves time and I agree on that too. So, our people will look into that regulation. Some of our regulations, and I want to stress this, date back to 1914 and we have to revise them. I mentioned yesterday that we have the opportunity now to look at them and improve them. We are working day to day. So, we welcome these comments. The guaranteed capacity, it has to do with the draft restriction if there is any, and also the line of sight. Actually, one of the driving forces behind the reservation system that we implemented at the Canal is to satisfy those needs. We are working at capacity, but at the same time we are providing the industry those on-time services they need. We are trying to respond to that. Hopefully, in the future the reservation system is not going to be needed because we will have more than enough capacity to serve everyone that comes to the Canal.

Mr. Hayman:

Very good. Chairman Reeder.

Mr. Reeder:

I would just ask our Administrator a point of clarification on the question of the delay, if there is an accident. Is it true, Alberto, that if a ship wishes to proceed without the BLI, that is certainly an option that it can take and then it can proceed, and I'm not sure that is Mr. Mohrmann's understand-





ing, but if it wishes to proceed, it simply cannot proceed, leave, without the BLI getting in there and then subsequently submit a claim. But, if haste is of that kind of importance, our ground rules are 24 hours to get the BLI in there, because we know how important time is to you. You may know of an instance where that didn't occur, but that would be an aberration, that's not our standard, but you can leave instantly if you are capable of doing so, but you can't later submit a claim against the Canal. Is that correct Alberto?

Mr. Aleman:

That is correct.

Mr. Mohrmann:

I don't want to stress this for too long, but this man could be no more than three hours away from the place of the accident in Panama. He can be there in three hours, why 24, why not three hours?

Mr. Aleman:

When we say 24 hours, again it is the time that it takes from the accident, when the time the accident occurs until we complete the BLI. We don't know that every accident is going to be an easy one. It could be a difficult one, so what we have imposed at the Canal is that it won't take more than 24 hours to be resolved. The shipowner has the decision. If he feels that is a minor scratch or something like that doesn't warrant a BLI, he can decide to keep on going. Obviously, if it is an accident of major proportions, he would like to have a BLI done. And we need to have our experts over there and also our surveyors, so that we can have all the data. Because we know that we can be claimed against and we have to make that decision. I want to stress that we only do in the Canal an average of 30-35 BLIs a year. No more than that. Out of the 14,000 plus ships that come through the Canal.

Mr. Mohrmann:

Could I say something more on the line of sight. I can see the conflict of the pilot's requirements and, of course, our capacity requirements. At the moment, your pilot's requirements are more than international standards. Can we have a discussion to see how we can compromise and maintain safety, but give us more space on our ships? Is there a way that this can be discussed and compromises can be found?

Mr. Aleman:

Definitely so, this is the idea of this type of conference, to get together, work with our pilot force, work with our marine people, so that we can look at how we can improve both sides, so we can make this a win-win situation. We would like to provide service the best we can, so we can service you in this matter. In fact, also, we have to point out that even though international standards are international, the Panama Canal is unique. It is structured that way.

Mr. Mohrmann:

The Kiel Canal is similar. It is smaller, but similar.

Mr. Aleman:

You said it, smaller.

Mr. Mohrmann:

But it is another Canal with narrow locks as well.



Mr. Hayman:

OK, gentlemen, thank you very much indeed for that exchange. I would like to compliment both parties, because I think that covered a number of detailed areas in a quite effective way. So thank you very much, Claus, and I think we should move on if we may to a different sector and move to the dry bulk area, and ask Bruce Farthing, the Director of Intercargo, which is the industry association representation of the dry cargo operators, to summarize first of all, Bruce, the extent of the dry cargo sectors usage of the Canal and the concerns which your colleagues have.

Mr. Farthing:

Thank you very much indeed. I am delighted to be here and indeed honored to be on this panel today and make a short statement. Could I first of all, congratulate Fernando Manfredo Jr. and his team on this tremendous work and the way in which he has gathered so many people here today. I've attended many conferences over the years; I don't think I've ever seen quite so many and, indeed, I have not heard so much audience participation. That I know is what you want, Chris, to be a feature of this. I know I have to be brief. Can I just say that Intercargo is not, of course, a cargo owners' organization, it is a shipowners' organization. It represents the dry bulk sector of the industry that was founded only a matter of 15-17 years ago. The role is to promote and protect those who own, operate or manage dry bulk ships. From small beginnings, we now have a membership, not I fear as big as Ronald Bergman's, but we have nearly 200 members from 34 countries, 1,250 bulkers, roughly about nearly 100 million tons deadweight of dry bulk capacity. Quality was mentioned this morning. May I say that we aim to be a quality organization in terms of the quality of our membership. How do we achieve this? We require them to have ISM certification by the first of July of next year. We require them to be classed by a society which is a membership of IACS and we require them to be in a P&I Club which is a member of the international group. As you said, Chris, the dry bulk sector, well, the dry sector is the biggest user of the Canal. If you look at last year, which we have the full particulars of, there were virtually 6,000 transits during the year of bulk or general cargo vessels compared with something like a little under 3,000 for the reefers, about 2,500 for tankers and a little less for the container vessels. So that does give an indication of 44.3 percent of transits of general or dry bulk cargo; so therefore, we are the most important sector and the most important user of the Canal. And of course, we are in the business of providing service to trade and particularly with the grain trade in Asia, 35 percent of tonnage through the Canal in 1996 was destined for Asia and Asia itself now imports some 55 percent of the world's seaborne bulk commodities. If I try to say what are the requirements of dry bulk shipowners, I would say minimum delays. This is a little like motherhood, perhaps, but minimum delays and an efficient and necessary booking system, which is also understood, continued general efficiency, value for money, and finance ring-fence, a point already made by Ronald Bergman. Avoid bureaucracy, I know it is difficult, but so far as possible, continue your maintenance and may I say here, how impressed I was by all the work going on in the Gaillard Cut. It is amazing what is going on there, when you compare it to what is going on over the years also. I raised the issue of monopoly, I am fully aware that the Canal does not have a monopoly position, so far as any sector is concerned, but it has a near monopoly position, so far as the dry bulk sector is concerned, insofar, as dry bulk cargoes cannot be transhipped efficiently or economically. You cannot send dry bulk, as you can containers over any land bridge. You cannot as for oil, pipe it across and you cannot, as for passengers, send it across by road or rail. In short, for the dry bulk sector, there is really no alternative other—of course, and I'm fully aware of this—than going around the other way.

I have been delighted to hear, I don't understand the full details, but I have been delighted to hear that there is a new mechanism being developed for a dialogue. I imagine this will be, not so much on detail, but on generally economic, commercial and operational aspects of Canal policy. I

would certainly welcome this. I wonder whether, and again the point I raised in the questionnaire, I wonder whether you could not in the Canal administration think of bringing in the cargo interests, because after all, what are ships about? They are about carrying cargo. A ship without any cargo is not worth anything. I would suggest that you give thought to bringing in the cargo interests, and let them say what views they have. In the end of the day they are the ones who are going to pay the tolls, the dues. I don't know whether there is any sort of mechanism, I came here with no sharp shopping list of complaints, but I wonder whether there is any mechanism for the resolution of difficulties, indeed is there anything such as, in modern jargon we call a help line, just an idea, which I would throw out.

Now, of course, dry bulk shipping, we always say, is vital to world trade and in the same way the Canal is vital to world trade. In the dry bulk sector we talk about ourselves being environmentally friendly, cheap, safe and efficient. And I would hope that those principles could apply equally for the Canal, as a sort of guiding light, I'm sure they will. So that looking ahead, we in Intercargo are only too happy to help if we can. We have heard the very exciting news about the new maritime program and administration this morning. So, with the Canal administration being put up in a new way, and the maritime regime, you have a new picture, we are only too ready to help where we can. We trust that the Canal authorities will be able to keep up with the growth of world trade. All the forecasts are for continued, indeed massive growth. So, that the Canal has a major task in keeping ahead. If in any sense we could help in dialogue or in any other way, we are only too willing to do so. Thank you very much.

Mr. Hayman:

Bruce, thank you very much indeed for those comments. I think that you raised a number of very interesting points. I would like to ask if Administrator Aleman, if you could respond to some of the things which Bruce said. The one thing that I would like to ask is that you set to one side for now the discussion about the ongoing dialogue, because maybe that is a subject that we should logically address right at the end of the discussion. But, if you could deal with the other points, which Bruce raised, like for example, the help line suggestion, that would be great. Thank you.

Mr. Aleman:

Sure, before that, let me just go back to the presentation that Claus was making, because any restriction that we have in the Panama Canal is a handicap to this route. And we are very clear about that. So in any way that the container industry can help us. We want to put together a panel of container people or companies and sit with our marine director and pilots, and look at those restrictions that we have. If we can solve them together, we would more than appreciate that from you. If you could do that.

Mr. Mohrmann:

Yes, I like the idea.

Mr. Aleman:

The help line, I think is a great idea. We are working towards seeing if we can implement that on a 24 hour basis, because we understand that when it is 10 o'clock in the morning in Panama, it could be 2 o'clock in the morning somewhere else. That is something that we need to have 24 hours. We are also striving to have more information put into the Internet, making accessible to all of the people to know where are their ships, if any problems occurred at the Canal. We have been toying with that idea. Some of the clients have told us that is something that should be looked into in detail, about



the security of that information. You know, who can have access to the information. We are working towards giving you as much information as possible and also that you can access the Canal at any given time. I just want to mention that and thank you for your comments, because we are working towards giving you better value for your money. To have a Canal again that is efficient, reliable and provides service to our clientele. But more than that, also Bruce, I think that the aspect of understanding that we do not have the monopoly of this route, even though, as you mentioned that the dry bulk might not have the same advantages as the container business, is important. We are working towards making a Canal competitive for all of the industry—bulk, dry, container, passenger, all of them. Because we need to compete and we need to make this the best route possible for you, our clients.

Mr. Hayman:

OK, thank you very much Administrator. Do you want to come back on that, Bruce, at all?

Mr. Farthing:

No, I'm very happy, thank you.

Mr. Hayman:

Very good. Whilst we are moving along sector by sector we may interject some of the questions that we are receiving up here. I think it might be perhaps appropriate to bring at this point a question from John Thomson of the Armada Group, since Armada is a dry bulk operator. It does not necessarily relate to anything; oh, I think Bruce did touch upon the booking system. And the question from John Thomson is this: he wants clarification of the triple booking fee. We touched upon this item with Mr. Aleman, yesterday, but it seems there's some confusion as to when the triple fee applies. Is it when: 1) you booked in condition one or two and transit in condition three, or 2) you booked in condition three and transit in condition one or two, 3) you booked and transit in condition three. This is a complicated question, but I'm happy to read again if you like to.

Mr. Aleman:

No, that is OK. It is a complicated question, but I think it has an easy answer. I'm going to answer it in this fashion. We are guaranteeing the booking fee in which you made your booking. That means that if you booked in condition one or two and it happens that you passed through the Canal when we are in condition three, we will honor the booking that you made in condition one and two. You only pay condition three, that is triple fees, only at the time when we are in condition three. That is the only time at which you pay for condition three because you don't have a booking set at the time. And at that time the Canal is on a very restrictive capacity, since we have to have more than 90 ships. There is one aspect that was mentioned there and it is what happens during condition three, if the ship books in condition three and when it is actually transiting we get into condition two. That is a very strange case, basically, but it was raised yesterday to us and we are looking into that. What we are trying to achieve is not make anyone pay something that he is not receiving. It is basically, at the time the booking is made, so I think that answered your question.

Mr. Reeder:

Well, you might also add, Alberto, this next explanation for the Congress here, what we are talking about exactly in condition three and how often. Give them some sense of how often we historically have experienced that might help them put this in context.



Mr. Aleman:

Condition three is actually when the Canal has a backlog of more than 90 ships. Then we apply condition three, in which the fee goes three times as high as the fees in the other two conditions, one and two. We go back from condition three when we get down below 80 ships in our backlog. This happens only, maximum, about ten days a year, out of the 365 days. And this usually happens depending on the number of ships that we receive during our scheduled maintenance, when Canal capacity is greatly reduced because we are operating only on one lane. And that is when that happens, so it is basically a very small percentage of the time, and before we implemented this, let me just say, that when we were in condition three, we did not honor any bookings at the time. Now, we are honoring them; not only that, we are honoring them at the same cost engaged in booking one and two. So, I believe we have enhanced very much the booking system that we now have.

Mr. Hayman:

Thank you very much, Administrator. Can I just read out a footnote, which Mr. Thompson puts on his question, because I think the Congress would be interested in his comment. He says we would also like to thank Mr. Aleman and Mr. Manfredo for making this Congress possible and hope the users' forum will continue, perhaps on a yearly basis. Good, thank you very much indeed. Could we now in that case move on to the next segment of the afternoon and bring in at this point Mr. Victor Pino, who is Director of the major Chilean operator CSAV. I would just like to give a little background on Victor, whom I had the pleasure of sitting next to at dinner last night. He has a background in the power generation industry before entering the copper corporation of Chile, before he joined CSAV as Director and President of the Executive Committee. He is also Director and President of various subsidiaries of the company. He has served as President of the National Shipowners' Association and held the Director's position from March 1990-1996. Unlike, I suspect any other member of the panel, he is also the owner of a vineyard in Chile. He produces a form of Chilean Chardonnay, which he recently has started to export under the label Don Victor. So, I for one will be looking for bottles of Don Victor, which I understand carry a photograph of him on the label, when I get back to the UK, where he is exporting, I think.

Mr. Pino

Good afternoon. Thank you very much, Chris, for the free advertising. First of all, I would like to take the opportunity to commend, as a Latin American, all Panamanians for the excellent organization of the present Congress. This is of national deep relevance, as His Excellency Mr. President said that now only one flag waves on the national territory. I think this is something to be commended by all Latin Americans and the whole world, as it shows that differences could be solved through negotiations, treaties and understanding between the peoples.

The same system of understanding amongst the people is the one we have to seek without doubt between those who administer the Canal and the users. Our company is almost a partner of the Canal. On December 2, 1914, the first vessel from our company crossed the Canal. In other words, only three months after the Canal's inauguration. Today we have 500 vessels transiting the Canal per year. But, more than talk about my company, I would rather say to you that all our relatively small countries located to the South—that is Ecuador, Peru, Bolivia and Chile—have small markets and populations; therefore within the world's globalization, we have to become part of the worldwide economy. In order to be part of the worldwide economy, it is important to have a traffic and freight and transportation system that works as a perfect transportation chain. This means that none of the links fails and it also means that the price should be very low. Therefore, I also commend the organizers and my friend Dr. Fernando Manfredo for this occasion.



Before leaving Chile we were very concerned about some issues and not so concerned about others. We acknowledged the skills and organizational and working abilities of our Panamanians friends; therefore, we were sure that the employees, technicians and professional workers, would be able without any doubts to perfectly handle the Canal from the technical point of view, from the maintenance point of view, from the point of view of having to introduce all new technologies, current communication and scientific achievements. But, frankly, I must tell you that we were concerned about the political point of view. I have worked for state-owned copper companies and whenever the state gets involved in the administration of the companies, it becomes a serious problem. There all kinds of political implications that include not only what Ronald already mentioned, trying to allocate funds, but there is bureaucracy. Each political party in power wants to appoint its employees or take out efficient employees, etc. This, of course, was our greatest concern. Fortunately, as we have learned in this Congress, a series of legislative measures have been taken in the country which, with God willing and with the support of the administrators, may be carried out apart from politics.

The second aspect that concerned us as Canal users are the toll levels. I do not want to get into details already mentioned by Claus and other panel members in regard to a series of operational problems. When I said that fortunately today communication and dialogue allow the solution of problems, it is because I hope, and this has already been mentioned, that there will be a small annual technical meeting, but, more than that, that there is continuous communication between the Canal and users in order to solve a series of problems as we have seen in our discussion here. It seemed like none of the parties was aware of the exact problem or the other's point of view. I believe that it is absolutely necessary to establish a type of customer/user relations office and not wait a year when the problems are accumulated. In regard to the tolls themselves, and that is another one of the company's concerns with enterprises in which the state is involved, obviously, today, the world is becoming more efficient and may I contradict my friend Manfredo when he states that costs are maintained in spite of inflation. I wanted to tell you that we, as shipping companies have lowered our freight rates, and we have already heard here, we are talking about 10, 15, 20, 30, and 50 percent or more during the past 4-5 years. In fact there are a lot of shipping companies that have their figures in red. We have had to implement extraordinary reengineering work, we have had to cut personnel, a lot of "fat". Every time we thought we did not have fat in the body, unfortunately, we were still very fat. We had to look into outsourcing solutions, all that sort of things that one way or the other was a matter of concern and which any political interference would prevent a company from doing. I am still worried, although at a lesser level; after all, I've been listening, but I cannot help pass on this concern to Alberto, in order for him to consider it in his plans.

Finally, today I wanted to see a bit more about this beautiful country, so I took a small plane and flew over the Canal and its neighboring areas. I really think that Panama has to take advantage of the Canal, rather than pass on the costs to its direct users. I believe Panama has to use the Canal as a large magnet and attract a great number of vessels and thus, a large amount of auxiliary services. You have to continue doing what you are doing, building terminals at both ends, railroads. You have to take advantage of the whole area that is presently used as military bases; they have to be changed from military to commercial areas and provide all types of services that without doubt will represent a great potential for the country's development. In regard to the tourist aspect, for example, a lot of people travel in my country due to the low value of the dollar, oddly enough. I always see information about Cuba, Puerto Rico, etc. You have beautiful beaches that nobody in South America have heard about; therefore, I believe that the Canal could be a real catalyst to turn Panama into a giant service business. In fact, service companies have better results and larger revenues and even employ the greatest number of people per investment unit. Therefore, it would be a mistake to kill the



goose that lays the golden eggs and increase Canal toll fees. I think that it would be better to maintain all that has been discussed about safety, efficiency, etc. with fair tolls that could allow people to come to Panama, making it possible to develop other activities that result in higher revenues than the Canal itself. Thank you.

Mr. Hayman:

Thank you very much, Mr. Pino. Could I have some comments in particular about the notion that Panama should operate the Canal—as I understand from your comment, Mr. Pino—on a break-even basis, make your money out of the services and additional activities that accrue to Panama as a result of the Canal being in place?

Mr. Aleman

I agree with you and thank you for your comments, because the Canal has to be the spearhead for maritime development in this country. We have to do everything in our hands to attract the greater number of users to the Canal, because this will yield important benefits for the Republic of Panama. If the Canal is inefficient and expensive, does not yield revenue and is not competitive, then the Canal or the maritime development of this country will not be feasible. Therefore, we acknowledge and understand that we have the enormous responsibility not only to the shipping world, but to the country, of developing all Canal neighboring areas into service areas, and those services in turn will generate interest from users to come to Panama and utilize this route. Yesterday, I mentioned that Panama is maybe the only country in the world, geographically, that has one port with two oceans. That in itself—together with the Canal, a modern transportation system, a service system--should turn this route into a very important one. However, this could be possible only if the Canal is a waterway that offers what you mentioned, an efficient, reliable route providing real added value to the users. Obviously, this must be included in the cost, because we will charge for the use of the waterway. I agree that we as a business must keep modernizing. I believe, as a businessman, that one is never lean enough; there are always ways to improve efficiency and productivity of all enterprises. The company that is pleased with itself ends being a company eliminated from the market by the other companies. At the Canal, we have a lot to do in this regard and I believe we are going to do so, because currently, the Canal is a very efficient Federal agency, but it is still a bureaucracy. We have to turn it into, as we said yesterday, a lean, efficient corporation as no other in the world.

Mr. Manfredo

I believe that our friend Mr. Pino has pointed out very interesting points that could prompt a series of studies. When the Panama Canal started operations in 1914, there were commercial operations in addition to the vessel transit operations directed by the Panama Canal. It owned hotels, vessels and retail stores and engaged in cattle breeding, dairy, and marine bunkering operations. All was registered as revenues and expenses of the Canal. Well, as a result of the 1936 Treaty, commercial activities were limited and later under the 1977 Treaty, the United States was banned from any commercial activity apart from the service of transiting vessels. If the Canal enterprise faces the problem of increasing costs which cannot be compensated by growth in transits and it is not convenient or viable to increase toll rates and the tariff of other navigational services, the alternative is for the enterprise to expand horizontally to other type of commercial activity related to maritime transportation with this amortizing the increase in costs. I am referring to transportation activities that would benefit from the maximization of traffic and which would not exist if traffic declined as a result of an increase in toll rates.



Mr. Hayman:

Thank you very much, Fernando. Can I just interject here another question from the audience? I will be doing that from time to time and Olga as well. This question comes from Mr. K. E. Nahm, who is, I hope I have pronounced his name correctly, Senior Manager Director for Pan-Ocean Shipping Company Limited, in Korea. "We are shipowner operators of dry bulk carriers that generate about 15 transits per month by owned and/or chartered vessels," he writes. "We believe that the owners-operators responsible for dispatching the vessels through the Canal and paying the tolls should be one of the main determining factors instead of the booking being allocated based on the vessel's transit and/or booking history. Could you tell us please your opinion on the above idea?" Alberto Aleman.

Mr. Aleman:

Yes, we have heard this suggestion before, that whoever charters a vessel shall have that vessel included in the user's list. We discussed this point with Armada yesterday, when we were talking to them. They have approximately 500 transits. We are examining that possibility, and this has to do with the tie system, the settlement of ties within the slot reservation system. We are trying to find a way in which we could implement this, knowing the number of transits of each company. Currently, we do it by vessel and transits made by that vessel. It may seem easy, but it also has a level of difficulty, but we will try to implement this as part of the booking system that we have at the Canal.

Mr. Hayman:

Thank you very much. Are there any other comments on that particular point from Mr. Nahm, on behalf of the panel? Thank you very much. I think, in that case, let's move on to the next sector of consideration, and that is the cruise lines and the cruise industry. The cruise representative on the panel this afternoon is Matthew Sams. Matthew was promoted to Vice-President of Caribbean relations of Holland-America Lines West Tours earlier this year. In fact, just only two or three months ago, I believe. In this capacity he is responsible for representing Holland America's interests with various governmental and regulatory agencies with which the company is involved in the Caribbean, Latin America and Florida. Before joining Holland America, Matthew spent 12 years at Carnival Cruise Lines, where he held successively more responsibilities and positions in operations culminating in his post there as Director of port operations. There he was responsible for this region, but also Alaska and Hawaii and was a representative of his company at the FCCA (Florida-Caribbean Cruise Association)—remember you met the president of FCCA, Michele Page, in the session yesterday afternoon. I think that although, numerically, the cruise industry's record in the Canal is quite small, the impact is large. And I am sure that's something, which Matthew, you refer to in your comments. Perhaps you could just start by characterizing your own company's records, so far as Canal transits are concerned.

Mr. Sams:

First of all thank you, Chris. It's a pleasure for me to be here, more of an honor to be asked by my constituents of the other cruise lines to represent them and I hope to give a little bit of a brief outline of six particular points that concern our industry, not only Holland America, but this is more of an industry statement. At the risk of being a little bit repetitive for Mr. Reeder's and Mr. Aleman's sake—they've heard our case before as it has been presented by the ICCL (International Council of Cruise Lines)—I think it may be in our best interest to once again bring these points up to share them with the forum today.





Holland America and her subsidiary, currently are on the books for 1997-1998 over 50 transits. The cruise industry worldwide—I don't have those figures—I would probably estimate them probably somewhere in the 200 fashion. Even though we are a small percentage of the market, we are a very unusual and unique niche of the market, because we don't have regular cargo. We have talking cargo and our cargo can be very demanding, very pushy, and they want to see the Canal during the day, they want to get through the Canal as quickly as possible. So our needs and desires are unique. Some things were mentioned about the price of tolls and the recent raise in tolls, on which we shared our opinions and thoughts with the administration and I think that there is a clear understanding. I want, to go into that a little bit deeper. I understood last night, I had dinner with a gentleman from the Canal and he told me, we were discussing the average price of the toll in the Canal and for cargo ships, it was mentioned that the average price is somewhere around 30,000 dollars. For cruise ships the average price is somewhere in the 140,000 dollar figure. We have ships in our fleet that in our corporation have tolls in the excess of 180,000 dollars. So, just doing some quick math—and I don't know if this is the fair way to do it—based on those numbers it is five to six times, in other words, we pay five to six times more than other users, and therefore that is why we consider ourselves a little bit special and would like to see those daylight transits. I may not consider all of the details that go along with that, but I wish that our Canal tolls were only 30,000 dollars.

And in addition to that, throughout the past several years ships have become larger and in addition to becoming larger gross tonnage and higher Panama Canal tonnage we are bringing more passengers to Panama and to the Panama Canal and because those tolls have significantly increased, indirectly, they may say or the outsider would be saying, we're being somehow indirectly penalized for bringing extra passengers to the Canal.

As I see it, I don't see it through the cargo industry's eyes. I see the Panama Canal as a tourist destination. It's somewhere where passengers want to go, they are very, very interested. I know the mechanics is very important to my counterparts in the cargo and other industries, but for us it is definitely a tourist destination. So, when these costs came into effect, our industry objected, not only because of the cost implication but we have, the cruise industry has, a big misconception that it is this big glamorous huge money making industry and unfortunately there is probably 50-60 percent of the industry that is not making any money. And the other 40 to 50 percent that is making money were selling cruises at the same prices we were more than ten years ago. So, when these increases to our costs go up, we have nowhere else to take it except from the bottom line and out of the profit or what the possible profit of the cruise lines. That's point number four.

Point number five, we have had some complaints throughout the cruise lines and two gentlemen touched on it today. The issue with accidents that may occur or incidents that may occur before entering the Canal or inside the Canal. And especially with the cruise ship, we don't have the up-to-24 hours to hang around and to wait and see what the Canal authority will say, and therefore, we feel that sometimes we are forced to sign the waiver and to proceed, when it could be handled in a more expeditious fashion. We also have had issues with Panama Canal pilots where there have been disagreements on the bridge as to who is in charge, orders given by the Canal pilot that the master of the vessel feels that may not be the best in the ship's interest. I know that there have been lines that have stressed concern about a particular pilot, have reported that pilot and there is no means to have that pilot removed from that circle of companies of vessels. Not that we want to have him removed, but never to see that pilot back on board that company's vessel again. And three months later, two weeks later when you show up in the Canal, the same pilot is on the vessel, which causes concern for the master and the company.

I and Michele and Steve from Princess had a chance to meet with Panamanian Tourism yesterday, and we've been talking to members of Tourism for several years now because the potential to



have a fantastic cruise destination in Panama is here; unfortunately, there is not a great place to stop. There is Cristobal on the Atlantic side and there is Balboa on the Pacific, but those destinations are far lacking in what any cruise operator would feel to be safe and would feel to be desirable. In talking to the members of Tourism yesterday, it's amazing that Panamanian Tourism and the Canal seemed to have different agendas and one does not necessarily agree with the other. We're hoping that when the changeover period occurs in 2000, that those two aspects and those two different points on the spectrum become much closer, because for us, again for cruise ship operators, the Canal is the destination, it's not necessarily a means to get from the Atlantic to the Pacific. It is a tourist destination, and tourism and the Canal are, from our aspect, marching to somehow different music. There is also the opinion that members of Tourism have even indicated that they would like to see the rates in the Canal be so high that we would be forced to stop in a Panamanian port, because we could not afford to go through the Canal. We would like to see it in another way; we would like to see it where we could actually enjoy the Canal and be able to stop in a destination, such as, Balboa or Cristobal. As a matter of fact, there is even a presentation given to us last night and I understand it was going to be made to the President today, this morning, that outlines a 33 million dollar project on the Cristobal side, which my line as well as the FCCA, as well as Princess, said that if you built it in the way that you say you are going to build it, with the specifications that you have outlined and if the costs are in a fair fashion, we'll bring our ships there. And the question I would like to propose to the panel is, if we did do that, if we did promise to bring a ship to a Panamanian destination, would there be, whether through Tourism or through some other fashion, some consideration given for the rates in the Canal with the goal being that not only we would stop in the Canal and use those services, but we would make a port of call, be on a Panamanian port for 8 to 10 hours a day—and the spending of cruise ship passengers as well as crew is very well known—with the ultimate profit being the Panamanian people, not only those people who are affected by the Canal, but those people who are affected by all of the services provided when a cruise ship makes a call. Thank you very much.

Mr. Hayman:

Thank you very much, Matthew. There are a lot of points there, culminating with that request or proposal at the end. Administrator, would you like to start on some of those points?

Mr. Aleman:

First of all, I would like to tell you that we value very much the cruise ship business. In addition to being very beautiful, they are very important for us because we know the importance of Panama as a tourist destination, and at the same time, more people could learn about the Panama Canal. I believe it is true that we should improve relations with the cruise industry, have more participation between both parties. The Canal is a 24-hour operation, 365 days a year, providing services to all industries. As you mentioned, cruises represent three percent of the business. But there is another 97 percent of the business that we have to service. Cruise ships demand special considerations that are important for them, that we value. They require daylight transits, they are the first in line when the day begins. They are the first to go through, because it takes approximately 8 to 10 hours to cross the Canal. They want to begin their transit at about 6:00 am, as the passengers want to see the Canal. It is true that the Canal is a destination. We are interested, as we have mentioned, in a permanent relationship. During the past four months, we have held five meetings with the ICCL to discuss issues concerning the cruise ship business. As we are able to learn more about the business, we try to make improvements in favor of your industry. When we were saying that the Canal is the spearhead in the country's maritime development, it included work on this area. I want to tell you that we have talked to one of the shipping companies about the possibility of using some of the facilities present



at the Canal to accommodate cruise ships and passengers. We are working on an agreement. Furthermore, the Canal has contracted the design of a tourist center at Miraflores, a place I believe all of you have visited, to show the Canal in an adequate manner. Passengers and visitors who come to see the Panama Canal would have a place where we can show the history, where we can properly show the Canal, so that we can have a display consistent with the industry that you represent. In regard to the accidents, once again I confirm our position, it is a requirement. Obviously, you have the problem that you cannot stop, as you mentioned, and this is something we are trying to speed up, the BLL, there are approximately 30-35 BLLs per year, out of 14,000 vessels, and I believe very rarely cruise ships are involved in this situation, as we take really special measures when handling them. They are so beautiful that we would not like to even scratch them. In regard to the incident with the pilot, we would like to add that when a Canal pilot is believed to be below the standards, we are willing to review the case. And we believe and are convinced that we have the best pilot force in the world. There is no better pilot than the Panama Canal pilot. In fact, the Panama Canal pilots are the ones training other pilots at different pilot training centers all over the world. However, we acknowledge that nothing is perfect and if the case is there, we are more than willing to hear the case and review it so this is not to be repeated. In regard to the last point about whether there could be a special discount or rate for cruise ships stopping in Panama or bringing any other type of treatment, I would have to tell you that at present that is not included in our agenda and we could not consider it. Obviously, the other 97 percent of the industry that we service could also tell us that if they stop or discharge a container, they could be granted some kind of advantage as they are being offered additional services. I believe the Canal has to be impartial. The Canal shall offer all necessary services to the industry, yours and other sectors, but in regard to toll rates, we have to be fair to everybody. We have already discussed the tolls, the answer, I regret to say so, would have to be no.

Mr. Hayman:

Thank you very much, Administrator. Matthew, do you want to come back at all on the answers that you have just received?

Mr. Sams:

I understand the position of the Canal. The only thing that I can say is that we can bring to a tourist destination a lot more than a cargo ship can bring. I think that the spending hour of a 2,000-2,500 passenger ship is more than that of the crew of a cargo ship. So, I don't think that those two things can be put into the same area, the same type of statement. If there is some type of fundamental difference or fundamental policy that the Canal has, my belief and I may be wrong here, is that the Canal eventually will have other issues on their mind, besides the Canal, and that will be the betterment of Panama, whether that is made through the Canal or through tourism or through other means. But if that is not in the Canal's agenda, I am wondering if they would be amicable, if that would be on the agenda of Panama or Panamanian Tourism to try to solicit lines that would stop in the Canal and stop at a Panamanian port. And if better rates, whether that is done via a rebate from tourism or from the Canal, can be made.

Mr. Hayman:

Thank you very much. Would you like to come back, Administrator on that point or not?

Mr. Reeder:

Could I say something on it, Chris? One of the difficulties, Matthew, and it is a very interesting point. Every conceivable effort has been made by the Panamanians in their Constitution, in their



organic law and the practices of the PCC, in the regulations that are being implemented for the entity, the PCA, to run independently of basically government bureaucracy. The kind of trade-off that you are suggesting would raise, I think, a whole host of other considerations and other petitions that would impact on what has historically been a neutral treatment of all shippers, the same method of measuring, by the way, the tolls applicable. And you've explained very eloquently how it has resulted in larger tolls for your vessels, but it is the same method we used for all the vessels and it is a segment neutral basis. It would be interesting, if we had more time, maybe, Chris, if we had the bulk shippers and the containers talk about that proposal by this particular segment, how they feel about that, because one thing this has demonstrated in the last two and half hours, there are very different interests. The different customers that we are trying to serve even handedly all seem to be coming at least on some issues from a different place.

Mr. Hayman:

Absolutely, absolutely. I completely agree with that point and I think it has come out very clearly this afternoon, as you said. In that case, Matthew, do you want to come back again, no?, OK. I think it is worth also remembering the importance which the Panama Canal placed, not just to the uses of the Canal in the sense of the ship operators, and the owners of cargo, but also to the economies, many of whom in this region are sending very high percentages of their exports through the waterway. There is a delegation here representing the Andean community, which is five South American countries: Ecuador, Colombia, Peru, Bolivia and Venezuela. It is my understanding that their representative is His Excellency Pablo Yañez, who is the Ambassador of Ecuador in Panama. I understand also that Ambassador Yañez has presented a submission to the Congress. I would like just to call upon him, if I could, to give a very short message relating to this submission. Ambassador Yañez.

HE Ambassador Pablo Yañez, Ambassador of Ecuador to Panama:

Directors, delegates and users of the Universal Congress of Panama. At this important Congress, the Ecuadorian delegation, President of the Andean Commission of the Water Transportation Authority, distributed a declaration, which includes a number of interesting points and views. On the other hand, at a meeting yesterday and with the support of various countries, a text of recommendations was presented which reads in its resolution: the Board of Directors of the Panama Canal Authority should appoint a permanent advisory commission of Panama Canal users, which would include official representatives from the neighboring or regional blocks that use the Panama Canal for trade aiming at informing the Board of Directors the way, quality and conditions in which the users are serviced. During this meeting, dear gentlemen, we have listened to intelligent presentations of historical, technical and futuristic character of the Canal. All the members of the panel have referred to the waterway with particular excitement. It seems that the enterprise is the work of all nations and it needs to be guarded, protected and updated in order to take care of it and seek the best way to do so. This prompts us to think, to give us a sense of shared responsibility, as if it is a patrimony of mankind. Obviously, the users constitute the very essence of the Canal, the energy to operate and the reason for living. This force has prompted users and Panama to reach important achievements for the benefit of progress, adjustments and administration of the waterway, strengthening world trade and international transportation. We asked ourselves, how could the Canal function in the future, based on the new Panamanian law and regulations, without the users' participating in the important and delicate functions and operations of the Canal. Law 19, which was passed by the Legislative Assembly of Panama in 1997, provides valuable concepts that place the Canal as a column in human development, like an enterprise that cannot be stopped under no circumstance, as an enterprise that complies with a main public international function, as an open task of common



transportation for users without any discrimination. All world countries somehow are related to the Canal. In regard to Ecuador, it is of special concern because being the main user from the Western Coast of South America, transporting around 70 percent of its foreign trade volume. This particular situation and the intelligent guidelines of some panel members and Canal directors, who have given the users current and future fundamental importance in the waterway, have prompted us to present the above mentioned recommendation. I am sure that it will be embraced by the Congress to materialize it in the most convenient way in the future, with the necessary and experienced recommendations of legal specialists and Canal technicians. May I take this opportunity to commend the organizers of this event, as well as for their friendliness, and for the information received from the members of the panel, who have enlightened our understanding about the Canal and the Republic of Panama. Thank you very much.

Mr. Hayman:

Thank you very much indeed, Ambassador Yañez. Would anybody on the panel like to reply, Fernando?

Mr. Manfredo:

I have received copy of the declaration distributed by the President of the Andean Commission of the Water Transportation which contains a number of interesting points and views, as a contribution to the Universal Congress of the Panama Canal. I can give the answers to the Honorable Ambassador of Ecuador that the document is going to be submitted to the proper authorities in the Panama Canal Commission and the Government of Panama for their consideration. Thank you very much.

Mr. Hayman:

OK. Thank you very much, Fernando. Moving on, let's consider some of the questions that have been accumulating here. I'm tending to give preference to those who have identified themselves in their questions and also towards the users, since this a users' forum. The next question, which I guess is directed to Administrator Aleman, reads as follows. It is from John Hughes of Joe Tankers BB. Will the Panama Canal Board confirm that they intend to fully apply the ISM Code to all vessels requesting a transit with effect from July 1, 1998, which is, of course, the date of commencement of the enforcement of the ISM Code?

Mr. Aleman

I would have to answer that question as follows. We at the Canal believe that safety aspects are very important both in maintaining the quality of service as well as in the handling of our regulations. As I've mentioned, the Canal is in the process of establishing its regulations, the same that will govern the Panama Canal Authority. At present, we follow the regulations of the Panama Canal. Part of the current revision of those regulations that we are working on and establishing right now will take all these aspects into consideration, in such a way that we will be reviewing part of the structures regulating the maritime field.

Mr. Hayman:

OK, thank you very much. Let me move on to a couple more of the questions. The next one is from Adrian Holmes of C.B. Fenton and he says: Claus Mohrmann has a valid complaint regarding dead cargo charges, but consider the operator who carries only a part deck cargo maybe only once, but will continue to pay the full deck cargo for each and every transit forever. Does the Canal consider that to be a fair procedure?



Mr. Aleman:

Each vessel establishes its capacity to be able to carry containers on deck and the main reason why the implementation of that regulation was postponed was in order to be able to determine the capacity of each vessel to carry containers on deck. Once established that is really an adjustment in the PC/UMS (Panama Canal/Universal Measurement System) of each vessel. If the vessel does not carry containers at a given moment, since it is already structured, the vessel will pay that new PC/UMS value. Because this will be similar to telling us that half of the containers they have on deck are empty. Certainly, the idea is that those with that capacity established as such will have it as their new measure when they transit the Canal.

Mr. Hayman:

OK, thank you very much. There are a number of questions here. Quite a long, interesting submission from Robert Ho of Yang Ming Line of Taiwan. If I may, since time is against us, I'd just like to extract two or three, which I think are taking us into slightly different areas from those we've already covered. There is a question, first of all about manpower, pilot manpower, and Mr. Ho writes as follows: "there is great concern about the standard of pilots in the future. Even now," he writes, "there appears to be an increase in incidents causing damages. I hope that in the rush to increase the number of Panamanian pilots by the year 2000, that the training period is not shortened, but increased in order to ensure high standards. I also propose an immediate increase of pilots, as well as, improvement of their skills. As you probably know, in the Suez Canal foreign pilots are recruited to make up the local shortage and the suggestion is that the same should apply in Panama."

Mr. Aleman:

First of all, let me answer that the first part of the question is incorrect. There have not been an increase in the number of accidents, on the contrary, there has been a decrease in the number of accidents in the Canal. Furthermore, I want to repeat that the pilot force, and I disagree with the gentleman, the Canal pilot force is the best in the world. Furthermore, we are providing the best design tool at present and I believe we demonstrated this yesterday when we showed the Volpe tool, which will not only provide the pilot with a better tool, but it will provide more safety. We are not going to lower the level of training of pilots. We are improving our capacity, not only in training our pilots here in Panama, but in order for this to become a training academy for pilots from other parts of the Hemisphere and the world, if they would like to come here. This is not the only reason for doing this, in fact, as I mentioned before, we have found in visits to the Star Center, which is a pilot training center in Florida, as well as to the pilot training center at Baltimore, which the FLCIO runs, that the chief pilot trainer is a pilot or former pilot of the Panama Canal. Therefore, I believe that we not only have skilled pilots, but our pilots are training other pilots in the world.

Mr. Hayman:

Thank you very much indeed for that. I'd like to take a second of Mr. Ho's questions and it's about Canal transit charges. He writes as follows: "The Canal authorities have announced successive hikes of transit tolls, twice within one year, from January 1st, 8.7 percent in 1997 plus 7.9 percent from January 1st, 1998. The cost of shipping business is still in the doldrums. I propose the rate should be lowered."

Mr. Reeder:

Do you want an answer to that Chris? I think Mr. Ho does. Let me just say that the reason it was split, was responsive to the comments we received. That's the first time, by the way, that the rates



have been split. It's a seventh toll adjustment in 83 years. Three previous toll adjustments were higher than the aggregate of those two years and three were lower. But the reason it was split, is because the comments that came in from the users was they would prefer these to be spread out over two years, because it would be easier for them to accommodate. That's the only reason it was done in two years instead of one as on all previous six occasions.

Mr. Hayman:

OK, another question on tolls. If tolls were raised in order to pay up on improvements, to finance improvement projects, such as, the Cut widening, does the PCC have plans to lower tolls once these projects have been completed.

Mr. Reeder:

If you are asking what's going to happen after 2000, I think that's a wonderful question to pass on to my good friend Alberto Aleman.

Mr. Aleman:

It will be my pleasure. We expect that by the year 2004 we will have completed the Gaillard Cut widening project as well as other modernization projects, but God willing, we will be facing an even larger Canal capacity improvement project, the third set of locks. I believe that the Canal within its structuring, and I want to stress this point, the Canal will be more flexible at the moment of structuring and financing its projects. This is very important, because it has been well said, that why do we have to increase tolls in order to pay for capital investments that will be executed in five or three years, when the equipment will last for way longer than that. I believe that the flexibility the new Panama Canal Authority has will be able to guarantee that we are going to work, as was very well said by my friend Victor Pino, towards cutting costs to make us more competitive. Therefore, it is important for us to keep that competitiveness, and that is achieved in a series of different structures. Our goal is that the Panama Canal improve in terms of effectiveness, capacity, reliability and cost. Although today we are establishing tolls to cover for five or seven years when these capitalization projects will be finished, these will not only cover capitalization costs but other costs inherent to Canal operations.

Mr. Hayman:

Yes, very briefly Fernando.

Mr. Manfredo

Panama Canal capacity is one of the key problems and we know that one of the main concerns of the industry is that the Canal be able to respond to current and future transit demands. A study of Canal alternatives was prepared in 1993 in order to determine which were the alternatives if the existing Canal could not meet traffic demand. Unfortunately, the results of the study were not disseminated or discussed outside the Study Commission. Since then the studies have remained in the archives in Panama, the United States and Japan. But now under Alberto Aleman's administration, the dust is being removed and an evaluation has started. This is important because the Gaillard Cut widening is the last project to add capacity to the existing Canal and it is important to demonstrate that there is life after the Cut widening. The 1993 studies need to be updated. Probably new construction methods or concepts could lower the costs estimated in 1993. We have prepared a summary of the 1993 studies that you will find available. In addition you have the traffic forecast prepared by G.P. Wild, Advanced Logistics and Europroject updating the 1993 forecast prepared by the WEFA Group.



Mr. Hayman:

Thank you very much, Fernando. I think we have ten minutes left for the anticipated arrival of the Minister of Foreign Affairs. I think I'd like to use if I may, this time, to ask each of the panelists, very, very briefly to summarize their views on an issue which I think there's overwhelming agreement on, namely the initiative of Panama for the establishment of some method of continuous, ongoing dialogue between the Canal and its users. I'd like to ask, first of all, each of the users to give a very brief, one- or two- or three-sentence answer on the kind of system or method that they would like to see employed, and then ask the remaining three panelists to summarize their views as well. So, if I could start with you, Bruce Farthing.

Mr. Farthing:

Thank you very much, Chris. I am slightly taken aback by that question, but, I have no doubts at all that I am in favor of this dialogue. There is no doubt at all that whatever type of industry we are working in, whatever type of sector the shipping industry you are involved in, the more dialogue there is between those who provide the service and those who use a facility, the better. I've come across this sort of thing in various sectors of the industry and I have no doubts at all that it is welcomed and it will be welcomed, thank you.

Mr. Hayman:

OK, thanks very much, indeed. Maybe some ideas about the kind of structure that could be put in place, that could be introduced by some of the panelists, Mr. Bergman.

Mr. Bergman:

Thank you. Well I think this has been extremely useful that the users and Canal managers have come together and I very much appreciate to hear that Alberto Aleman told me that he would now get in contact with BIMCO, which has something like 60 or 70 percent of the world owners, just in order to discuss practical details. I think that I am very happy with this visit. Thank you very much.

Mr. Hayman:

OK, thank you. Mr. Victor Pino

Mr. Pino:

I believe now that there will be a company working as a company and not as an American delegation, it must operate under the systems private companies have to solve everyday problems they face with their clients. In other words, I imagine that if a vessel has a problem, we will be able to call and there will be the respective person in charge of containers, another one to handle pilot complaints, etc., and they shall be able to quickly respond by fax. If there is a more serious problem, well, a solution will be looked for, but I do not believe there is the need to create large mechanisms nor bureaucracies nor anything of the sort. Today, companies work at high speed and customers demand solutions to their problems in a day. We believe we are clients whose problems could be solved. I am referring to small administrative problems, damages, etc. Solutions which speed up all these systems should also be sought. One thing that has not been mentioned, the truth is that the Canal is investing important amounts of capital, but this implies that the Canal is going to at least increase its capacity by 20 percent or more, then without increasing the tolls it would have a greater income, probably 20 or 30 percent that will result in what all users and clients expect, that the tariffs will be maintained—more income on the one hand and cost reductions on the other. I would not establish any kind of bureaucracy to solve claims. Claims are quickly solved if both parties show a willingness to do so.





Mr. Hayman:

That's clearly a view that has a support in the hall. Could I ask you, Claus Mohrmann, to give your views.

Mr. Mohrmann:

I like the idea of a discussion between the container owners and the Canal Authority to especially discuss the issue of how can we increase the on-deck capacity. There, I think, we ought not to go to master mariners on our side and the pilots on the other side. And this we should do, we should find a small group of both sides to do this and come to counter decisions on short notice, if we as users spend the time in this, and our people's time which is so limited. I would rather be assured by you that this has also the support from you. Not letting your experts get through their way, but rather the pressure to force them to adapt to your customer's requirements. If you give us this assurance, I'm prepared to put our resources into such a forum to work something out. Thank you.

Mr. Hayman:

Thank you very much. Chairman Reeder.

Mr. Reeder:

Chris let me first say, That's an excellent question and has been the subject of a lot of the discussion this afternoon, and there have been a lot of ideas that have been presented this afternoon that already we are going to go back to. We are going to follow this transcript very carefully, but you heard the agreement that has just taken place up here with BIMCO. You've heard the agreement, to look into it and to put together container representatives, a fair representation of that industry with our pilots. What we want to do, when we have a customer ask us to do something for that customer, we want to say yes. And we want you to believe that. And we want to demonstrate and deserve your believing in that. Sometimes we have to say no, and what we want to do is make sure that when we say no, that you understand why, that you understand why, because the dialogue has been there and there's a safety consideration, some other factor, a fairness factor. But, I think with regard to the advisory group, that is now embedded in the organic law, I would hope to see, this is something that Panama is going to have to decide, but they've already demonstrated they think it is important, because it is mandated by law, it needs to be a fair representation. Hopefully it is not so large that is unwieldy and unable to be effective. But that is going to be a very important part of the future between now and the year 2000, as we've told you, we've got a 24-hour rule. If any user contacts us within 24 hours our aim is to get back an answer. We may not have the full answer, but we should at a minimum be able to tell you how long it is going to take us and what is going to entail to give you an answer, because that is important to us. Thank you.

Mr. Hayman:

OK, thanks, Chairman Reeder. I omitted to include Matthew Sams when we were going through the list of users. Matthew, have you got any one or two brief sentences on this?

Mr. Sams:

Just on the chance of sounding repetitive, I look forward to the day when the Canal is run a little bit more like a business, and through that business venture that we'll embrace, I guess the tourist or the tourism sector, a little bit more. And hopefully the main beneficiary of that would not only be the users of the tourism industry, but the local population of Panama.



Mr. Hayman:

OK, thank you very much. Bruce, one sentence.

Mr. Farthing:

May I just say, of course, that Intercargo would be too happy to be involved in any such mechanism.

Mr. Hayman:

Thank you very much, indeed. I'd like now to ask Alberto Aleman, Administrator, just to give your final comments on this point.

Mr. Aleman:

I believe that the most important thing in this Congress is, in fact, the establishment of this consultation and interaction body with you, our customers. I believe there is the possibility of establishing annual specialized meetings to discuss issues regarding the Canal and its users. We will follow-up this idea and we will see to it that it becomes a reality. Panama, the Panama Canal Authority, by law, in article 19 of the organic law, establishes and requires the creation of a Consultative Committee. We discussed this matter yesterday. I just want to stress that this is a requirement by law and it will be one of the first tasks that the Board of Directors, once in place, will have. I believe this will be an excellent permanent consultation mechanism of the Panama Canal and its Board of Directors. I believe the Panama Canal will be attending, and we have been doing just that, other forums where our participation will keep us in contact with our users and allow us to listen to other sectors of the industry, such as ports and other very specialized segments of the marine industry. The Panama Canal and Panama are very well represented by Olga Bosquez at the IMO and I believe this is also very important for us to follow-up and keep it as a continuous source of information. By the way, today when we met with the Director of the St. Lawrence Seaway, we discussed the possibility of reactivating the meetings between canal administrators around the world and possibly turn it into an IMO Sub-Committee. We committed ourselves to continue with this type of interaction. I believe, and I mentioned it yesterday during my presentation, that the personal visits by the administration to different clients and sectors of the industry, such as, Intertanko, BIMCO, ICCL, ICS and others which represent the shipping industry, are very important. I believe this is very important and vital. I believe our administration has to work even harder, and it will be more effective in responding to your demands. We are working hard to quickly respond to clients, maintain that hotline, which was presented here; and I believe it is an excellent idea and we will implement it as soon as possible. The Canal is open 24 hours; in other words, there is no problem with this and it is not to be a problem of bureaucracy. I believe that with what we already have we can do it and we'll do it immediately in order to provide immediate response, since this is an efficiency measure of any company, to quickly respond to the client's demands. Thank you very much.

Mr. Hayman:

Thank you very much, Administrator Aleman. I'd like in a moment just to give the last word on the subject to Mr. Fernando Manfredo in his capacity as President of the Organizing Commission for this Congress, but before I do, I'd just like to express my appreciation of a number of things, first of all, the support and assistance that I have received from my excellent co-moderator here, Ambassador Olga Bosquez. I'd like to compliment all of you for having the foresight to attend this Congress, which for my part has been a very worthwhile and interesting occasion, and to compliment, particu-



larly, both the users and the representatives of the Panama Canal Administration for the direct and frank way in which they have addressed the questions this afternoon. I think it's being a very healthy and positive discussion, and one which one really seldom sees in this industry. I think it is a great move forward and I compliment everybody for having taken part. And, finally, the audience has been great throughout the last three days, we appreciate your questions and your comments and so forth. So, thank you very much for that. I'd like just to let Fernando Manfredo, whose tremendous efforts and inspiration have led to the formation of this Congress, have the last word this afternoon, Fernando.

Mr. Manfredo:

Thank very much Chris. I consider that we have met our objective; during three working days we have had a constructive, timely and transcendental. We, all have learned much more about the Canal than what we knew at the beginning of the sessions, of its present, future, strengths, weakness, risks and opportunities. We come out of this Congress convinced of the need of maintaining a fluid communication, of consultation when appropriate and cooperation. I have begun to receive congratulations for the success of the Congress. The truth is that my contribution is possible the less important. The success has been the result of the excellence of the speakers and panelist, the contribution of the Panama Canal Commission, the ARI, the Ministry of the Presidency, Comar and in particular of Alberto Aleman Zubieta, Dr. Olmedo Miranda, Dr. Nicolas Ardito Barletta, the Minister of Foreign Affairs, the Panamanian Foreign Service Member, the Ambassador of those countries represented here. But above all those persons and organizations that I have mentioned, the success is attributable to all of you who have contributed with your time, your ideas and your money. Excuse me, I have omitted the names of two people who have been the key to the success, Christopher Hayman and Olga Bosques, who provided a moderation of the highest caliber, they were able to extract the maximum from each one of the topics in the debates. Finally, I want to express my own satisfaction for the success achieved having all odds against the Congress. The topic was too important to let the opportunity go for other consideration.

Ambassador Bosquez:

Thank you very much. May I take this opportunity to acknowledge the excellent job carried out by Mr. Hayman, who has been the key element in the handling of the discussions, your important contributions. May we give him a round of applause, thank you.

Mr. Hayman:

Thank you very much, indeed, Olga for that. I must say that the Ambassador here has been an excellent co-moderator. It has been a real pleasure to work with her on this and I commend her. I would like to echo all of the comments about the quality of the presentations, the range of subjects and the audience participation and the level of organization. I understand that the attendance here has been 1,311 participants, which I think is a really fantastic attendance reflecting the industry's interest in the affairs of the Canal. So, I think this is also an interesting fact to keep in mind. Thank you very much for your support and participation.



 **LUNCHEON SPEAKERS**

**“All conquests bestowing pride upon mankind are but the result of self-efforts and not a gift of the gods.” AESCHYLUS (in “Prometheus Bound”)**

For several years I have had the privilege of re-visiting, along with President Julio Sanguinetti of Uruguay, and former President Jimmy Carter, of the United States, the memorable event in which the Panamanian people established their spirit, their single flag of State, as stated last night by the President. From a vague idea and the dedicated convictions of de Lesseps, has emerged a unity of thought and action clearly expressed by the beauty that is depicted in the unanimity of the Canal Act. The Canal, as the challenge, has constituted the sole factor for such coherence and cohesion. As a backdrop to this accomplishment are the shining and vibrant deepest sentiments of the Panamanian fatherland. As expressed by President Perez Balladares: at two and a half years from the date once believed to be unachievable, Panama is ready to assume its historic responsibility!

A philosopher once said about the miracle of Saint Dionisius the martyr, who walked forty leagues after having been beheaded by his executioner, the miracle is not that he walked beheaded over such a distance; his most significant feat was in having taken the first step in such a condition. In fact, the rest was easy. You may be asking yourselves what bearing this has on the transfer of the Panama Canal. It is indeed very relevant: Because the decisive action was to have taken the first step. And that first step was taken 20 years ago with the signing of the Torrijos Carter Treaties. The steps that followed were easy because the political parties, the civilian community in its multiple facets, and the government with its many affiliations, have all been committed to meeting the responsibilities imposed upon them by that first step, and they have met their commitment with awareness and profound understanding of what such responsibilities entail.

Facts and ideas such as those we are witnessing and experiencing here at this Universal Congress, with the profound and wise proposals, the knowledgeable voices of those supporting them, and the debate of ideas before making decisions,

indicate that, in the national arena, we are dealing with something that touches upon the destiny of the Republic of Panama and upon the very soul and heart of the Panamanian people. Although we are not facing anything as spectacular anywhere else in the world, we are at a juncture which we must deal with realistically. For example, although in different physical and historic scenarios, Panama and Hong Kong present different perspectives but with real similarities, according to Professor Reeder. I want to point out two such similarities which apply very directly: the legal-political perspective and the economic perspective, which are more intertwined with, than independent of, each other, albeit expressions of the same image in the new geopolitical plane of the world.

Regarding the legal-political perspective, in 1920, after the First World War, the great Austrian professor Hans Kelsen, teacher of thousands of philosophers and law students in the western school of thought, set forth the concept that sovereignty must be overcome without diminishing the feelings of patriotism, because this was how the great cultural change that mankind needed would be achieved. Today, 77 years later, we are still at this stage: with ongoing lengthy and complex processes such as the creation and development of the European Union—as mentioned in the eloquent presentation made last night by Vice President Manuel Marin—with each new decision the ground upon which the old absolute principle of sovereignty stands is weakened and the concept is modernly thrust towards collapse, as was demonstrated by the title of a recent seminar in a European institute, that of Guipuzcoa's Legal Sociology, in Spain. Since 1945, and most of all after 1989, the traditional concept of sovereignty has served to justify the most outrageous hegemonic projects and the most unpunished fratricidal struggles. Colombian historian and sailor Mauricio Obregon recounts the times when Greeks, Phoenicians, Romans, Moslems and Vikings sailed islands, gulfs and isthmuses of the sea, until Christopher Columbus and Magellan presented to mankind a whole world so that the Quixotes could reach their destinies under the vision of God. Let us not forget that it was the discovery of America that gave birth to international law, in its origin the *Lus Gentium*,



with all of its ambiguities, in the minds and writings of Spanish theologians from the School of Salamanca, Francisco de Vitoria, Baltasar de Ayala, Francisco Suarez and Luis Vives, precursors to Hugo Grocio. Until then it had been argued that the natives of the lands discovered by Columbus and the European sailors of the XV, XVI and XVII centuries lacked a soul. There were those who denied such argument, such as theologian Sepulveda and as Hegel, the German philosopher. It would be necessary for Borges and Garcia Marques; Paz and Carlos Fuentes, Cortazar and Vargas Llosa, and Neruda to come along and refute them.

The development of international law, as an expression of other historical processes, came to be an instrument of the ethnocentric and eurocentric vision of its creators and supporters. For example the rights of people was an after-the-fact legitimization of all that had been done and was being done by the Spaniards in the American Continent, according to Iberian treatise writers.

About the same time, some 450 years ago, there were already references to the right to communications, the right to trade, and global economy. And the foundation was laid for the doctrine of internal and external sovereignty of the states, when these, withdrawing from medieval guidelines, became secular and absolute entities. It was then that the myth began to shine. According to the Italian Ferrara Joli, two world wars were necessary, provoked by our western world—which has become a more savage and ferocious society than those artificial globes that are the sovereign states—for the UN of 1945, and later the Universal Declaration of Rights of 1948, to transform world order.

However, amidst the distortions and asymmetries of the contemporary world, the UN continues to perceive the international community as a community of states rather than as a community of peoples. The time has come when there has to be radical change, because the State, as a sovereign entity has been brought to a crisis due to privatization, internationalization, and economic deregulation processes, with the transfer of large parts of the functions (military defense, the management of economies, financial policies, the struggle against crime) which in the past had motivated its birth and development.

Additionally, while speed and multiplicity of communications have increased the urgency for identity of the peoples and have unchained a cultural integration that surpasses boundaries, the division of the world into sovereign states has become the mother of all conflicts, examples of which are the permanent and cruel war in the Middle East, the war in ex Yugoslavia, the disruptions in the ex Soviet Union. Therefore, it can be concluded that the national states, whose primary legitimacy was until yesterday the guarantee of their peace, are becoming a source of danger, not only in their external relations, but also in the weaving of their internal relations. Because of all of this, there is the thought of transcending the very form of nation-states, and of restructuring the UN on the basis of the autonomy of its component peoples, rather than on the basis of the sovereignty of the States.

It is interesting to ponder upon the transfer of the Canal in the context of cases such as that of the European Union, with its consultations and consensus and the forthcoming steps towards currency unity, as well as the negotiations among the various peoples over the use of water, nowadays as significant as currency. It is evident that in the natural and in the artificial worlds, canals are international public services whose management philosophy depend on the multidimensional inspiration of owners and users. In this regard, let us remember that our law professors pointed to currency as one of the essential attributes to national sovereignty, and in spite of this, the Europe of Maastrich is advancing in that direction. And let us study the meaning of NATO, GATT, INTERPOL, antinarcotics policy of the UN, all are expressions of a reevaluation of the concept of sovereignty, as set forth by the description contained in the Encyclopedia Britannica; and it enshrines a teaching to be reflected upon with respect to the reverted areas of the Panama Canal Zone.

This has been clearly and reflectively understood by Panamanian leaders in the context of the meetings of Bambito, Coronado and the Panama 2000 Encounter, which I have witnessed. Without abdications but indeed through analytical reflections on radical attitudes, with the sponsorship of the United Nations Development Program (UNDP), with reflection by people from all politi-



cal, economic and social states of reality who have looked into the huge mirror of sovereignty in the light of the Treaties, looking rigorously and in depth into the positive aspects, but also scrutinizing the perverse effects of the realities of vindication, which have already become, greatly factual and simple realities. It has been beautiful to be present at the arrival at the harbor of the isthmus where cultural identities and patriotism drop anchor, along with ideas. Our old friend Aristotle talks of Hipodamus of Milieto who proposed a law whereby high honors would be bestowed on all those who invented or accomplished something useful for Greece. This is history in the making. Peoples of Panama, you are an open book of wise teachings for the world!

Of course such a historical achievement must be earned moment by moment, by means of prudence, intelligence and persistence. One must take more than just one course in teachings about the future, that uncertain place in time wherein we are compelled to spend the rest of our lives. It is said that President Miterrand once asked the scholarly College of France, so beautifully expressed last night by Michele Demessine, to help him find the teachings of the future in order to endow young Frenchmen with state-of-the-art tools to aid them in facing that future. This is why I would like to urge Panamanians to keep in mind that while they carry on to complete and complement the realities and projections of the Canal, the world of shipping, with its peaks and valleys of storms and tranquil seas, requires a steady-handed sailor to perform with the ability, intuition and will, what General Omar Torrijos so masterfully did, alongside the visionary Jimmy Carter. And as was also done by those Latin American leaders who comprehended the historic dimensions of his dreams, among which were Alfonso Lopez Michelsen, former President of Colombia, and Carlos Andres Perez, former President of Venezuela. And, likewise, I remind you that although the principles of navigation might be established on the basis of practical experience and imagination, the Ibero American Community of Nations offers fraternal skills that are prepared to share the path alongside Panama in this new and promising imaginary voyage, as there also are in the United States. Thus, the date of 31 December 1999 which years ago was only a metaphor, has now

become the finish line and, at the same time, is the starting point for great endeavors.

Panama has a long integrationist tradition: all we need to do is to browse into the pages of its history to discover the reminiscence of the Amphictyonic Congress, summoned by Bolivar, the Liberator, in 1826, and through which he envisioned that the Isthmus could become the capital of the Ibero American Community of Nations, in a fashion such as that of the Greek amphictyonies the capital of which was the Corinthian Isthmus

This integrationist vocation was exalted in the workshops by the analysts, wherein the international public service of the great canals, which I mentioned earlier, is a categorical imperative which sets forth responsibilities for its manageability criteria. At the various meetings, the mechanisms of consultation and consensus were meticulously and soberly analyzed. The process has been enriching, as soberly expressed by Fernando Manfredo as well as by Jorge Ritter, and with them, by all Panamanians. It has been exemplary and exemplifying to experience the quality of the analyses and the manner in which the notion of fatherland and nationality came to enlighten the minds and resolved discrepancies to find solutions under the embrace of the flag. At the foot of the one and only flag of Panama flying over the totality of its territory!

What are exactly the concepts of nation, and the feelings of Fatherland?

I apologize to this scholarly audience for daring to respond to such questions, disregarding all conceptual austerity and appealing to the expressions of the language of the heart.

For Renan, the Fatherland is the day to day plebiscite, which we ratify or rectify instant by instant. The Fatherland is encompassed by the rivers, by the animal life, by the vegetation so zealously guarded by the Smithsonian Institute, who does so with exemplary mysticism. The Fatherland is the watershed so lovingly and rigorously preserved in the Canal Act. The Fatherland are the students whose idealism explodes in bursts in the streets and plazas of Panama in pursuit of reverted dreams. And Fatherland are the workers, with their roughened hands who, through their labor weave the great dreams for the country of Panama that each person cradles in their heart. And, likewise,



and most significantly, journalists too are the Fatherland. Fatherland are the entrepreneurs who create wealth and jobs. And, Alberto Aleman, with his vigilant and dynamic youth at the controls of the ship, is also the Fatherland. The faculties, the professors who mold the dreams in each one of their teachings, like the goldsmith does with his delicate work of art; and the artists are the Fatherland which they paint, they sing about and they sculpture. The Fatherland is also the construction of the Canal by the French, by the North Americans, the West Indians and so many others who are awaiting the great novelist. Religion is the Fatherland that reaches God in gothic incenses of psalms and prayers. The anthem, the coat of arms, the flag all are the Fatherland and the Canal which on 31 December 1999 will return in its fullest rights to the body and soul of Panama—because the Canal has its own soul, as beautifully expressed by the President — it indeed is the Fatherland. The inhabitants, the women and the men, the elderly, the adolescents and the children, what a beautiful image of Fatherland they are, citizens of an entire era and citizens of the Republic of Panama. What a beautiful resonance is carried by this expression—they are all authentically that soft Fatherland sung by the poet.

In talking about the Panamanian fatherland at this fraternal gathering, my Colombian heart stands at attention and salutes, senses the music of the tamborito and trembles while raising a cup to toast to the grandeur of Panama's destiny. And to the greatness of its People! I say: "Salud!" ...And to your flag, the only flag, in the beautiful words of the President. What is a flag? It is not only a piece of red, white and blue cloth held by a wooden mast. A flag is a hymn; a prayer; a flag is a People; a flag is the tremor of hope. To that one and only flag, I say: "Salud!"

• *Dr. Belisario Betacur is a Former  
President of Colombia*





It is truly an honor for me to have this opportunity to participate in this historic event -- the Universal Congress of the Panama Canal. This clearly is a milestone event in the transition process. But for me, it's like being a member of the trans-isthmian 50-mile relay. While I led off the race, by providing some structure and focus to this mammoth undertaking, my hand-off to Mr. Guardia led to refinements and improvements, when Mr. Aleman accepted the baton from Mr. Guardia it was with full knowledge that he would be the one to finish the race we all had been running. It's not 1999 yet, but I am here to see, first hand, what the sprint to the finish line is looking like.

Twenty years ago, in preparation for a vote on ratification of the proposed Panama Canal Treaties, over sixty United States senators, accompanied by hordes of staff members, visited me in Panama. I was then the Commander in Chief of the United States Southern Command. I took most of them on helicopter overflights of the Panama Canal to point out vulnerabilities from a defense standpoint but also to show a smooth, large-scale movement of ships between oceans.

In response to their questions there and subsequently at hearings of the relevant congressional committees in Washington, I stated that the treaties were acceptable from a military viewpoint. Not only that but my views and positions as military commander were fully reflected in them.

To many of them, I also expressed my confidence that the Panamanians, given the right training and the support of the government of Panama, could operate the Canal effectively in the next century. I had arrived at this conclusion from listening to views of countless Panamanians, many of them my friends to this day -- and among them our distinguished host, Fernando Manfredo. They had impressed me with their passion for regaining the prestige of their nation by taking over and properly operating the Canal for the benefit of all nations. If somewhat idealistic, their determination was clear and firm.

I mention this because, at that time, my position was not popular in the United States. I was going against the flow. Nevertheless, the treaties were ratified and, on 1 October 1979, my friend, Fernando Manfredo, and I became partners in the

massive effort to put substance behind the lofty treaty language. It was an exciting time as we ventured out on uncharted ground. There was one imperative, that the Canal operation continue without interruption.

Those of you who head large operations may appreciate the freedom we enjoyed in functioning for most of that first year without a Board of Directors. This was pretty heady stuff -- great when it all works out fine, but potentially disastrous if it should not. I will add, it did work out and the first Board of Directors convening in mid-1980 approved everything we did.

Many of the management decisions and actions taken in those initial years are evident today. Here are a few of the more important.

We placed emphasis and funding on major maintenance projects such as locks overhauls and the maintenance of equipment and facilities.

We came to a realization that the Canal was unable to handle an unprecedented rise in Panamax ship traffic, so we took immediate steps to correct this by,

Expanding the tug fleet with more powerful boats;

Installing high mast, high intensity lights at Miraflores locks to permit limited movement of large ships in darkness;

We initiated a study of widening the cut, a study now bearing fruit.

We increased the number of Canal pilots.

We overhauled the Commission's training base to produce the needed skilled employees for the future.

I shall not take time here to recount the many other accomplishments of the first ten years except to note that the Canal's capacity and efficiency continued to increase.

I would like to pay a special tribute to those Panamanians who kept the Panama Canal operating from 1987 to 1989 when the Noriega regime increasingly applied pressures against them. We may never know the full extent of the suffering they and their families endured. However, to their credit, they evidenced their loyalty to the Panama Canal by repeatedly showing up for work in spite of hardships. This is something that bears well on the future.



Turning now to the present -- and it has been over seven years since I last saw the Canal -- I have been favorably impressed by many aspects. For one, the emerging cooperation between the Panama Canal Commission and the Government of Panama, which is essential to the success of the transformation that will take place on January 1st., 2000. Credit for this cooperation rests with President Perez Balladares, with the chairman of the Board of Directors of the Panama Canal Commission, The Honorable Joe Reeder; with the present administrator, Mr. Alberto Aleman and the former administrator, Mr. Gilberto Guardia; and last but not least, Mr. Fernando Manfredo. Certainly many others -- inside and outside the Panama Canal Commission -- have contributed.

A fine example of this cooperation or partnership is the organic law passed unanimously by Panama's Six Party Legislative Assembly and signed into law by President Balladares this past June. I understand that the Panama Canal Commission worked closely and diligently along side the Government of Panama's Transition Commission for more than a year to help draft the bill.

Parallel to this effort, the Panama Canal Commission helped to rewrite Public Law 96-70 that has governed the Commission since 1979. The change encompassed converting the agency to a government corporation as a means to facilitate the transition and to make the organization more efficient and business-like.

A related initiative has been an organizational analysis to evaluate the Commission's structure. The result of this evaluation is a restructuring of the organization, the first since the treaty took effect, aimed at improving the Commission's effectiveness, flexibility, customer responsiveness and strengthening its ability to operate in a business like manner.

Another change has been the emergence of Panamanians at the top of the management structure of the Panama Canal Commission, the latest being the marine director. As I understand it, today the work force is over 92 percent Panamanian. Better than 60 percent of the Commission's professionals and managers are Panamanian as are 9 out of 10 skilled craftsmen. The number of Panamanian pilots is now up to 174 -- at the start, it was

zero -- and others are in the training pipeline. In fact, a state-of-the-art shiphandling simulator, instrumental in the early training of pilots, has been installed at the Marine Bureau.

I believe these are healthy signs that reflect confidence in the capability of these experienced Panamanian employees; it is also evidence that the transition is succeeding.

The continued emphasis of the Canal's Board and management on capital improvements needed to increase the capacity and efficiency of the Canal to handle future ship traffic is, to me, both reassuring and impressive. Over \$2.5 billion have been spent by the Commission since my first days as administrator directly on maintaining and improving the Canal.

The centerpiece of the program is the acceleration of the completion of the Gaillard Cut widening program by 2002. Once completed, the cut will increase canal capacity by approximately 20 percent and permit two-way traffic of Panamax vessels.

In addition, new tugs are being added to the existing fleet to handle expected increases in large-beam vessel transits.

I've been impressed with the design of new locks locomotives that are being acquired to augment the current fleet. All of the existing fleet will be rehabilitated along with the additional locomotives, major improvements to the locomotive track system are also underway.

Also, the original 1914 mechanical locks machinery controls are being replaced with an automated system which will improve efficiency in the operation, safety and maintenance of locks equipment.

A modern vessel traffic management system is under development to optimize transit schedules and enhance navigational safety.

These and other improvements to the Canal are necessary in view of the significant increases in Canal traffic during the last two years and the strong indications that further growth will occur. The improvements will insure continued high-quality transit service to you in the international shipping community well into the next century.

Reflecting back to the beginning of the epic twenty years ago, I am heartened by the progress

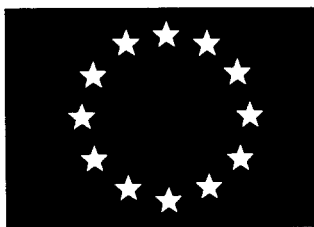


made. There is still much to be done. But there in, now clear evidence that the transition to the next century will be successful. It is so much clearer than it was to me twenty years ago. The preparations of the Panama Canal Commission are evident every day. Similarly, this Universal Congress demonstrates the readiness of the government of Panama to assume responsibility for the Panama Canal.

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