# Office of Inspector General

### Review of the Department's 2000 Performance Report/2002 Performance Plan

Department of Transportation

Report Number: PT-2001-062 Date Issued: June 4, 2001





### Memorandum

June 4, 2001

U.S. Department of **Transportation** 

Office of the Secretary of Transportation

Office of Inspector General

Subject:

INFORMATION: Review of the Department's

2000 Performance Report/2002 Performance

Plan

PT-2001-062

Kenneth M. Mead / L. Lul Inspector General

Reply to J\_1 Attn of:

Date:

To: The Secretary

Thru: The Deputy Secretary

The attached letter and enclosures to Chairman Burton of the Committee on Government Reform, U.S. House of Representatives, were prepared in response to his request of April 5, 2001. Chairman Burton wrote to the Inspectors General to ask that they review and comment on the most significant performance measures in their agencies' Government Performance and Results Act (GPRA) 2000 Performance Report/2002 Performance Plan.

We generally found that the Department reasonably presented its progress and plans in its latest performance report/performance plan. Indeed, we found that this year's document included improvements over last year's, for instance: establishing a new performance measure on airport capacity; and including the number as well as the rate of fatalities in crashes involving large trucks.

Our in-depth review of the performance report/performance plan, however, did point out areas for further improvements that could both strengthen the document, improve the Department's ability to gauge its progress, and/or increase the likelihood of the Department meeting its performance goals. For example, we recommend:

• Establishing a goal of rescuing an increasing percentage of mariners in imminent danger. The Department's current plan of maintaining a static goal of saving 85 percent of all mariners in imminent danger allows the number of deaths to increase as the number of mariners in distress increases.

• Establishing performance measures on the rate of foreign and domestic commercial drivers and vehicles placed out of service following inspection. Removing unsafe drivers and vehicles from operation is vital to reducing large truck-related fatalities and injuries.

We are taking this opportunity to provide you with a copy of our response to Chairman Burton and thereby officially transmit our suggested changes to agency management. We have previously shared these comments informally with the management staff responsible for preparing the annual performance report/performance plan. We would appreciate your comments on this report and a summary of any changes you plan to make based on our proposals.

If we may be of further assistance on this, or any other matter, please contact me at (202) 366-1959, or Todd Zinser, my Acting Deputy at (202) 366-6767.

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cc: Assistant Secretary for Budget and Programs/Chief Financial Officer Operating Administrators Chief of Staff



June 4, 2001

The Honorable Dan Burton Chairman, Committee on Government Reform U.S. House of Representatives Washington, DC 20515

Dear Mr. Chairman:

In response to your letter of April 5, 2001, the Office of Inspector General (OIG) has reviewed the Department of Transportation's (DOT) Government Performance and Results Act 2000 Performance Report/2002 Performance Plan. In Fiscal Year 2000, the Department refined or instituted new performance measures to create more sensitive indicators of agency performance. For example, the Department revised its performance measure for Large Truck Safety to include the number as well as the rate of fatalities in crashes involving large trucks. The Department also established a new performance measure to address the problems related to airport capacity. While these are positive improvements, we have also identified additional improvements that could strengthen the Performance Report/Performance Plan and increase the likelihood of the Department meeting its performance goals.

In response to your request that the OIG comment on the most significant measures in the DOT Performance Report/Performance Plan, we have identified the following 16 key areas,

- 1. Runway Incursions
- 2. Air Traffic Operational Errors
- 3. Large Truck Safety
- 4. Highway Fatality and Injury Rates
- 5. Seatbelt Usage
- 6. Pipeline Failures: Natural Gas
- 7. Mariner Rescue
- 8. Train Accident Rate
- 9. Airport Capacity

- 10. Commercial Aviation Delays
- 11. Highway Bridge Conditions
- 12. Highway Congestion
- 13. Pipeline Spills: Hazardous Materials
- 14. Aircraft Noise Exposure
- 15. Critical Transportation Infrastructure Protection
- 16. Drug Interdiction

Enclosure 1 discusses these measures in detail. This enclosure organizes the measures under four of the Department's strategic goals: *safety, mobility, human and natural environment, and national security*. It provides our assessment of these measures and the quality of supporting data, and includes OIG recommendations for improvements to the relevant DOT goals, performance measures, or underlying data.

In addition, we reviewed each of the 30 management challenges the Department listed in its 2000 Performance Report/2002 Performance Plan to determine whether appropriate plans and tracking systems are in place to support progress in these areas. Generally, we found the Department's descriptions of its management challenges reasonably state DOT plans and past accomplishments in these areas. However, we did find some areas for improvement.

Enclosure 2 includes our recommendations for new goals in the management challenge areas not already covered in Enclosure 1. We will encourage the Department to formally set goals for these management challenge areas, develop appropriate performance measures to track progress toward these goals, and formally report on these performance measures in each year's Performance Report/Performance Plan.

Thank you for your leadership on this issue. If I can provide any further information or answer any questions, please feel free to contact me at (202) 366-1959, or Todd J. Zinser, my Acting Deputy, at (202) 366-6767.

Sincerely,

Kenneth M. Mead Inspector General

Enclosures (2)

### MOST SIGNIFICANT DOT PERFORMANCE MEASURES

We have identified the most significant performance measures contained in the Department of Transportation's 2000 Performance Report/2002 Performance Plan. These measures have been organized under four of the Department's strategic goals: *safety, mobility, human and natural environment, and national security*. As requested, this Enclosure provides our assessment of these goals, performance measures and the quality of supporting data. This information is summarized in the following chart, followed by a detailed discussion of our findings.

<b>SAFETY</b>		PROPOSED CHANGES		
		OR ADDITIONS		
<b>Key Areas of Concern</b>	<b>Existing Performance Measures</b>	Goals	Measures	Data
1. Runway Incursions	<ul> <li>Number and rate of runway incursions at airports with operating air traffic control towers.</li> </ul>			<b>√</b>
2. Air Traffic Operational Errors	<ul> <li>Rate of operational errors per 1 million activities (arrivals, departures, and overflights that occur within an air traffic control facility's airspace).</li> </ul>	ls, s that		
3. Large Truck Safety	<ul> <li>Number and rate (per 100 million commercial vehicle miles traveled) of fatalities in crashes involving large trucks.</li> </ul>		✓	
	<ul> <li>Number and rate (per 100 million commercial vehicle miles traveled) of injured persons in crashes involving large trucks.</li> </ul>			
4. Highway Fatality and Injury Rates	• Fatalities per 100 million vehicle-miles of travel.			
	• Injured persons per 100 million vehicle-miles of travel.			
5. Seatbelt Usage	<ul> <li>Percentage of front seat occupants using seat belts.</li> </ul>			
6. Pipeline Failures: Natural Gas	<ul> <li>Failures of natural gas transmission pipelines.</li> </ul>			✓

7.	Mariner Rescue	•	Percent of all mariners in imminent danger who are rescued.	<b>√</b>	
8.	Train Accident Rate	•	Rail-related fatalities per million train miles.	✓	<b>✓</b>

MOBILITY		PROPOSED CHANGES OR ADDITIONS		
<b>Key Areas of Concern</b>	<b>Existing Performance Measures</b>	Goals Measures Data		
9. Airport Capacity	• The cumulative increase in throughput during peak periods at certain major airports.			
10. Commercial Aviation Delays	• Aviation delays per 100,000 activities.	✓		
11. Highway Bridge Conditions	<ul> <li>Percentage of bridges on the National Highway System that are deficient.</li> </ul>			
12. Highway Congestion	• The percentage of total annual urban-area travel that occurs in congested conditions.			
	Of annual urban-area travel peak period travel time, additional percentage of travel time attributable to congestion.			
	• For the individual traveler in urban areas, the average annual hours of extra travel time due to delays.			

HUMAN AND NATURAL ENVIRONMENT			PROPOSED CHANGES OR ADDITIONS		
<b>Key Areas of Concern</b>	<b>Existing Performance Measures</b>	Goals	Measures	Data	
13. Pipeline Spills: Hazardous Materials	<ul> <li>Tons of hazardous liquid materials spilled per million ton-miles shipped by pipelines.</li> </ul>			<b>√</b>	
14. Aircraft Noise Exposure	• The number of people affected by airport noise.	<b>√</b>	✓		

NATIONAL SECURITY		PROPOSES CHANGES OR ADDITIONS		
<b>Key Areas of Concern</b>	<b>Existing Performance Measures</b>	Goals	Measures	Data
15. Critical Transportation Infrastructure Protection	<ul> <li>Percentage of positive receipt replies that owners and operators make in response to Transportation Security Information Reports.</li> </ul>	<b>√</b>	<b>√</b>	
16. Drug Interdiction	• Seizure rate for cocaine that is shipped through the transit zone (high seas between source countries and the United States).			

### 1. RUNWAY INCURSIONS

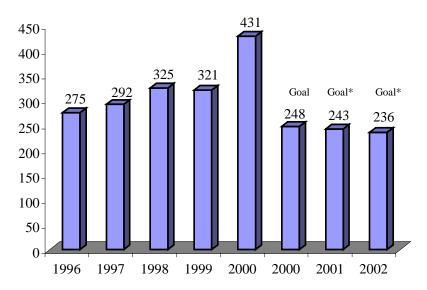
Runway incursions, incidents on the runway that create a collision hazard, are occurring at record levels amid increasing runway congestion. Runway incursions, which are indicators of serious safety risks, increased from 200 in 1994 to 321 in 1999 and reached a new high of 431 in 2000. This number was 74 percent higher than FAA's goal of having no more than 248 incursions for the year.

Goal: Reduce the number of runway incursions to 236 and the rate per 100,000 operations to .37 by the end of Fiscal Year (FY) 2002. In its last report, DOT changed its reporting of runway incursions from a calendar year to a fiscal year basis to facilitate timely performance reporting.

### <u>Performance Measure</u>: Number and rate of runway incursions at airports with operating air traffic control towers.

In prior years, the performance measure has been the number of runway incursions that occur at airports that have an operational air traffic control tower. For FY 2002, the Federal Aviation Administration (FAA) has included the rate as well as the number of runway incursions as performance measures.

### Runway Incursions Calendar Years 1996-2000



<sup>\*</sup> These goals are for FY 2001 and FY 2002, not the calendar years.

We agree with including the rate as an additional performance measure. The goals and measures adequately address the management challenge of reducing runway incursions.

**RECOMMENDATION FOR IMPROVING DATA QUALITY:** In our audit reports on FAA's Runway Incursion Program issued in February 1998 and July 1999, we recommended that FAA develop controls to improve the accuracy of its runway incursion data because of several instances where runway incursions were not reported by air traffic controllers and several instances where FAA had not included runway incursions in its database. FAA is developing a process to improve its runway incursion data collection, analysis, and reporting, and it plans to implement the process by June 2001.

### 2. AIR TRAFFIC OPERATIONAL ERRORS

Operational errors are errors made when an air traffic controller allows the distance between two aircraft to fall below FAA's required minimum separation standards. These incidents occur mostly in midair. The safety risk of operational errors can be very serious, such as when two airplanes are only seconds away from a head-on collision.

**Goal:** Reduce the rate of operational errors to 5 per 1 million activities.

<u>Performance Measure</u>: Rate of operational errors per 1 million activities (arrivals, departures, and overflights that occur within an air traffic control facility's airspace).

Despite FAA efforts, operational error rates have increased significantly during the last 5 years.



**RECOMMENDATION FOR NEW GOAL:** Lower the number of annual operational errors. The number of operational errors has increased by 50 percent from 764 to 1,145 from fiscal year 1996 to fiscal year 2000. This dramatic increase is not fully captured by using only the rate of operational errors as a performance measure.



## <u>RECOMMENDATION FOR NEW PERFORMANCE MEASURE:</u> Number of operational errors per year (in addition to operational error rates per year).

<u>Data Quality</u>: Our December 2000 audit report on FAA's actions to reduce operational errors stated that operational errors are at risk of being underreported. While en route facilities have an automated system that documents when operational errors occur, no such system exists at terminal air traffic control facilities. At these facilities, FAA relies on controllers to self-report when these incidents occur. Although FAA actively encourages reporting and has taken adverse action against personnel who intentionally cover up operational errors, it still cannot be sure that all operational errors are reported.

In response to one of our recommendations, FAA and the National Air Traffic Controllers' Association implemented a new system this past month to analyze each operational error to determine the severity of each incident, something that was not previously done. FAA will now be able to identify and determine the cause for the most severe errors, rather than focusing on training or punitive actions against controllers for errors that may not present a safety risk. We need to give FAA time to let this new system work because it may initially result in a higher reported rate and number of operational errors, even though the actual rate and number of operational errors may not be rising.

### 3. LARGE TRUCK SAFETY

In 2000 an estimated 5,307 Americans died and an estimated 145,000 were injured in traffic crashes involving large trucks—about 13 percent of all people killed in motor vehicle incidents. Yet, trucks represent only 4 percent of registered vehicles and about 7 percent of the vehicle-miles of travel.

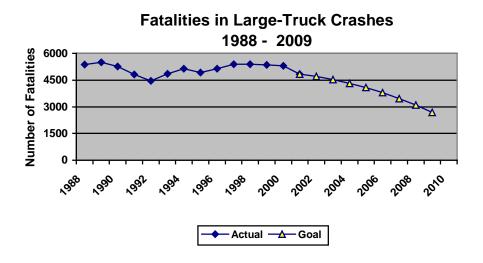
Injuries also extract a cost from our society in hospitalization and medical costs as well as lost productivity. Transportation related injuries have an estimated cost of \$150 billion annually. In 1997, the cost of a crash with injuries averaged \$217,000 for all large-truck crashes.

### **FATALITIES**

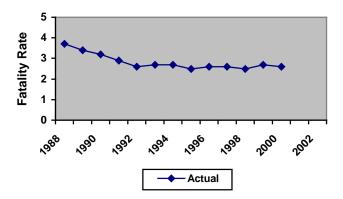
**Goal:** Reduce the number of fatalities in crashes involving large trucks by 50 percent by the end of 2009, using a 1998 baseline of 5,374.

<u>Performance Measure</u>: Number and rate (per 100 million commercial vehicle miles traveled) of fatalities in crashes involving large trucks.

In our April 1999 audit report, we found that while the fatality rate for large-truck crashes remained flat, the number of fatalities continued to increase. We compared the number of fatalities to a major airline crash with 200 fatalities every 2 weeks. At that time, the Department reported only the rate of truck fatalities, not the absolute number of fatalities. However, measuring only the rate allows the number of fatalities to increase as the number of motor carriers and miles driven increases. Based on our recommendation, the Department agreed to add the number of fatalities to its performance measure and to set a goal of substantially reducing the number of absolute fatalities.



### Fatality Rate for Large-Truck Crashes (per 100M commercial VMT)

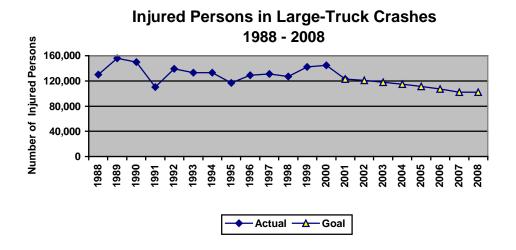


<u>Data Quality</u>: We have not validated the data. However, fatality data are reviewed and analyzed by the National Highway Traffic Safety Administration's (NHTSA) National Center for Statistics and Analysis. Quality control procedures are built into annual data collection at 6 months, 9 months, and year's end. Vehicle miles traveled are reviewed by FHWA for consistency and reasonableness. Deficiencies in the available crash data and knowledge about the causes of a crash limit the design and implementation of effective safety strategies. Our April 1999 report recommended that the Department evaluate large-truck crashes and obtain crash causes and fault data to identify safety improvements. The Department agreed and has an ongoing project collecting and analyzing data from large-truck crashes.

### **INJURIES**

**Goal:** Reduce the number of injuries in crashes involving large trucks by 20 percent by 2008, using a 1998 baseline of 127,000.

<u>Performance Measure</u>: Number and rate (per 100 million commercial vehicle miles traveled) of injured persons in crashes involving large trucks.



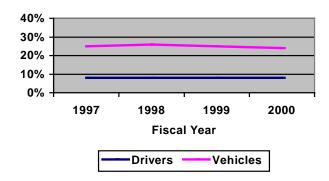
<u>Data Quality</u>: We have not validated the data. However, injury data are reviewed and analyzed by NHTSA's National Center for Statistics and Analysis. Quality control procedures are built into data collection and data processing. The number of injured persons is derived from NHTSA's General Estimates System (GES). GES data are obtained from a nationally representative sample of 60 sites and are less accurate than the corresponding fatality counts. Vehicle miles traveled are reviewed by FHWA for consistency and reasonableness.

### OUT-OF-SERVICE RATE FOR COMMERCIAL DRIVERS AND VEHICLES

The out-of-service rate for commercial drivers and commercial vehicles inspected, is the percentage of drivers and vehicles removed from service for serious safety violations. The Department collects inspection data from the States, who perform safety inspections of commercial drivers and commercial vehicles at roadside to ensure compliance with Federal Motor Carrier Safety Regulations.

In FY 2000, the States performed over 2.4 million roadside inspections. The Department uses the inspection data to target high-risk motor carriers for safety fitness determinations, and to screen motor carriers' drivers and vehicles for roadside inspection. Also, the data are used to compute a nationwide out-of-service rate, which is considered a benchmark for comparing motor carrier performance. During the past 4 years, the nationwide out-of-service rate for U.S. commercial drivers and commercial vehicles has remained fairly flat: 8 percent for drivers and 25 percent for vehicles in FY 2000. The Department's FY 2002 budget request includes additional funds to increase the number of driver and vehicle inspections indicating that these inspections are viewed as significant safety performance indicators.

### Out-of-Service Rates for Commercial Drivers and Vehicles Nationwide



The OIG recommends including performance measures on out-of-service rates because removing unsafe drivers and vehicles from operation is vital to reducing large truck-related fatalities and injuries. The most frequent safety violation cited at roadside for removing drivers from service is driver log violations, which indicates excessive driving hours and fatigue. Commercial driver fatigue has been recognized as a longstanding highway safety problem contributing to crashes.

For commercial vehicles, the most frequent safety violations cited relate to inoperable brakes and lights. Federal Motor Carrier Safety Regulations require motor carriers and commercial drivers to maintain vehicles and to perform pre-trip inspections. However, the rate shows that one out of every four commercial vehicles inspected is removed from operation for serious safety violations. For comparative purposes, if one out of every four aircraft inspected were placed out of service, there would be a public outcry for an improved rate.

**RECOMMENDATIONS FOR NEW PERFORMANCE MEASURES:** The OIG proposes adding the following performance measures to help determine if the Department will meet its goals for large truck-related fatalities and injuries.

- **1.** Rate of U.S. commercial drivers placed out of service.
- **2.** Rate of foreign commercial drivers placed out of service.
- **3.** Rate of U.S. commercial vehicles placed out of service.
- 4. Rate of foreign commercial vehicles placed out of service.

<u>Data Quality for New Measures</u>: The States, under Motor Carrier Safety Assistance Program grants, provide inspection data to the Department. While we

have not validated the overall accuracy of the inspection data, we have verified the accuracy of the data processed by the Department. According to the Federal Motor Carrier Safety Administration (FMCSA), the timeliness of inspection data has improved. In FY 2000, it took an average of 46 days to upload inspection data to FMCSA's management information system compared to an average of 59 days in FY 1998. For data accuracy, FMCSA reports that State reported inspections match a motor carrier in FMCSA's management information system 93 percent of the time.

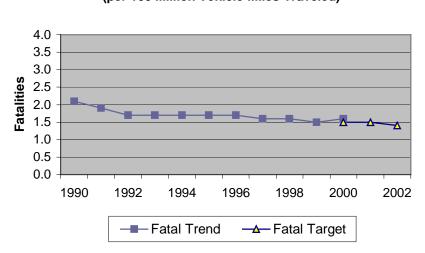
### 4. HIGHWAY FATALITY AND INJURY RATES

In FY 2000, motor vehicle crashes killed an estimated 41,800 Americans and injured over 3.2 million others. Highway crashes cause 94 percent of all transportation-related fatalities and 99 percent of transportation injuries. They are the leading cause of death for people ages 5 through 29.

### **FATALITIES**

<u>Goal</u>: Reduce the rate of fatalities in crashes per 100 million vehicles—miles of travel to 1.4 by 2002.

Performance Measure: Fatalities per 100 million vehicle-miles of travel.



Highway Deaths (per 100 Million Vehicle-Miles-Traveled)

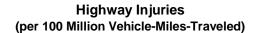
### <u>INJURIES</u>

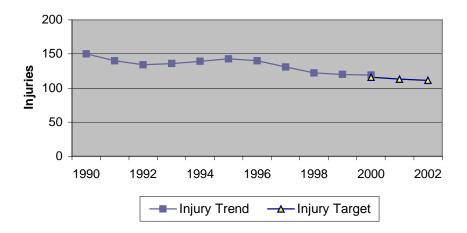
<u>Goal</u>: Reduce the rate of injured persons in crashes per 100 million vehiclemiles of travel to 111 by 2002.

<u>Performance Measure</u>: Injured persons per 100 million vehicle miles of travel.

In 2000, DOT met neither the highway fatality nor injury rate performance targets of 1.5 and 116, respectively. The fatality rate slightly increased to 1.6 in 2000 from 1.5 in 1999. Although the injury rate slightly decreased from 120 in 1999 to

119 in 2000; DOT still did not meet its performance target of 116 injuries per 100 million vehicle-miles of travel.





<u>Data Quality</u>: Fatality and injury data are reviewed and analyzed by NHTSA'S National Center for Statistics and Analysis. Quality control procedures are built into annual data collection at 6 months, 9 months, and year's end. Vehicle-miles traveled are reviewed by FHWA for consistency and reasonableness. We did not independently validate either data set.

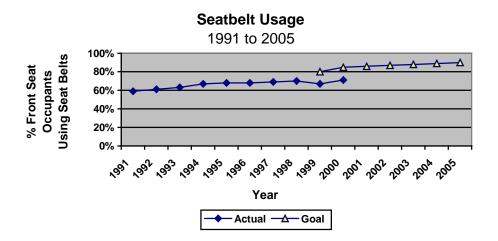
### 5. SEATBELT USAGE

The use of seat belts is estimated to save 10,000 lives a year. If seat belt use nationwide were to increase to 90 percent, the performance goal for 2005, an additional 5,500 deaths and 121,000 injuries could be avoided each year, saving \$8.8 billion annually.

**Goal:** Increase seat belt usage to 86 percent by 2001, 87 percent by 2002, and 90 percent by 2005, from an actual measurement of 71 percent in 2000.

### <u>Performance Measure</u>: Percentage of front seat occupants using seat belts.

As part of an ongoing audit of NHTSA's Occupant Protection Program, we found that the national seat belt usage trend has been relatively flat since 1991. The Department's 2000 Performance Report/2002 Performance Plan, shows a 12 percent increase over the 10 year period. In 2000, DOT did not meet the performance target (85 percent usage), although that year's 71 percent rate was the highest in our Nation's history. According to the Performance Plan, it is unlikely that DOT will meet its performance target of 86 percent for 2001.



<u>Data Quality</u>: Since 1998, this measure has been based on the National Occupant Protection Use Survey (NOPUS), a national probability-based observational survey conducted by a contractor for NHTSA. We have not validated the data because NHTSA has quality control procedures built into its oversight of the NOPUS contract to ensure data accuracy. For example, data collectors must successfully complete a NHTSA approved training course and the contractor conducts on-scene "surprise" quality control visits to ensure that observations are made correctly and data are coded properly. Also, NHTSA reviews the data provided by the contractor for consistency.

### 6. PIPELINE FAILURES: NATURAL GAS

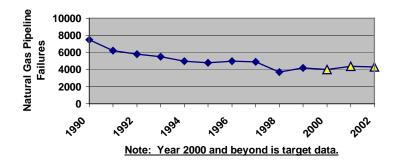
A network of 2 million miles of transmission and distribution pipelines transports natural gas to 60 million residential and commercial customers. This network includes 325,000 miles of interstate transmission pipelines under the jurisdiction of DOT's Research and Special Programs Administration (RSPA). While pipelines are among the safest modes for transporting liquids and gases, the nature of the cargo is inherently dangerous and can pose an immediate threat to people, property, and communities.

<u>Goal</u>: For 2002, DOT's goal is to experience no more than 4,301 failures of natural gas transmission pipelines -- a reduction of 150 failures (3.4 percent) from the year 2000 target of 4,451 failures.

### Performance Measure: Failures of natural gas transmission pipelines.

DOT information shows that failures of natural gas transmission pipelines have decreased about 40 percent in the past 11 years: from more than 7,000 failures in 1990 to about 4,300 projected failures in 2000. During the next 2 years, DOT expects failures to decrease about 1.7 percent annually from the year 2000 target.

### **Pipeline Failures**



Based on preliminary data, DOT exceeded its year 2000 safety performance target for natural gas transmission pipelines: 4,322 failures versus 4,451 targeted failures. The chart above illustrates pipeline failure history for 1990 through 1999, preliminary data for 2000, and DOT goals for 2001 through 2002.

**RECOMMENDATIONS FOR IMPROVING DATA QUALITY:** The OIG's March 2000 report "Pipeline Safety Program" concluded that RSPA did not collect sufficient data to evaluate Government Performance and Results Act measures, including the performance measure for natural gas transmission

pipelines. We recommended that the RSPA revise collection and processing of pipeline accident data to expand causal categories for more detailed trend analysis, and clarify accident form instructions so that operators will be more consistent and accurate in reporting accident causes.

To address these recommendations, RSPA expects to finalize proposed reporting changes for natural gas transmission pipeline operators in 2001. Further, RSPA will implement revised procedures to examine accident reports submitted by pipeline operators. Under the revised procedures, RSPA will keep accident reports open until all information is finalized and complete, and new tracking procedures will permit RSPA to pursue enforcement action on operators that do not comply with reporting requirements. RSPA must also improve the timeliness of the data.

### 7. MARINER RESCUE

The number of recreational and commercial marine users continues to increase as more Americans move to coastal areas and global trade grows. During FY 2000, Coast Guard responded to 40,068 calls for assistance, and saved 3,365 lives. The vast majority of calls and lives saved occurred within 3 nautical miles of the U.S. coast and well within range of Coast Guard's network of Search and Rescue boat stations and air stations. Over the past 5 years, 3,565 persons lost their lives as a result of marine-related accidents, including 704 persons that died during FY 2000.

**Goal:** Rescue at least 85 percent of all mariners in imminent danger.

<u>Performance Measure</u>: Percent of all mariners in imminent danger who are rescued.

# 90 User Who Are Rescued Who Ar

Trend

——Target

#### **Mariner Rescue Performance Measure**

Although this is a new performance measure for FY 2001, Coast Guard has maintained data on the measure for years. During FY 1999, 87.5 percent of all mariners in imminent danger were rescued while only 82.7 percent were rescued in FY 2000, the lowest level since 1993. Several factors have impacted Coast Guard's ability to rescue mariners in distress, including: untimely notification of the distress to Coast Guard, gaps in VHF-FM communication coverage, the inability of Coast Guard to pinpoint the location of distress calls, the proximity of small boat stations to the accident site, and severe on-scene weather and sea conditions.

<u>Data Quality</u>: The source of the data used for this measure is Coast Guard's Search and Rescue Management Information System. Data are collected from Coast Guard field units that conduct search and rescue responses. We have not performed audit work to verify the accuracy of Coast Guard's data. However, Coast Guard headquarters and field units review the data for accuracy and consistency.

RECOMMENDATION FOR NEW GOAL: The Department should establish a goal of rescuing an increasing percentage of mariners in imminent danger. Maintaining a static goal of saving 85 percent of all mariners in imminent danger allows the number of deaths to increase as the number of mariners in distress increases. For example, Coast Guard estimates the recreational boating population will increase 40 percent by FY 2020. Therefore, Coast Guard could conceivably meet its performance goal of rescuing 85 percent of mariners in imminent danger while the total number of marine-related fatalities [including recreational boating enthusiasts, commercial fishermen, divers, and swimmers] increases. Adjusting the mariner rescue goal upward would, over time, result in a reduction in the total number of marine-related fatalities and support the Department's goal of reducing the number of transportation-related deaths and injuries.

### 8. TRAIN ACCIDENT RATE

The FY 2002 Performance Plan identifies rail-related fatalities per million trainmiles as the performance measure for addressing railroad safety. However, the performance measure for train accidents was discontinued in FY 2001. In our opinion, this measure is equally important in monitoring railroad safety and should be reinstated.

<u>RECOMMENDATION TO REINSTITUTE FORMER PERFORMANCE</u> <u>GOAL</u>: Reduce the rate of train accidents by 21% from 1995 to the end of FY 2002, to achieve a rate of 3.09 or less per million train-miles.

### <u>RECOMMENDATION FOR NEW PERFORMANCE MEASURE</u>: Train accidents per million train-miles.

Train accidents can result in fatalities, injuries, and severe damage to property, particularly when train collisions and derailments involve passengers or the transportation of hazardous materials. The train accident rate is one of the most important measures the Federal Railroad Administration (FRA) uses to determine the success of its efforts in improving railroad safety.

Prior to the start of the Safety Assurance and Compliance Program in 1995, FRA's approach to railroad safety was based on site-specific inspections. Since 1998, the rates for train accidents and other safety measures for the railroad industry have increased, indicating the need for improvement in FRA's safety program. The train accident rate increased 10 percent, from 3.77 in 1998 to 4.13 in 2000, the highest rate in the past 7 years. The 2,969 train accidents that occurred in 2000 were the highest in the past 15 years.

<u>Data Quality</u>: FRA's database still maintains the information needed to track the rate of train accidents, even though the performance measure was discontinued. The performance information underlying the measure has not been audited or tested to ensure its validity.

### 9. AIRPORT CAPACITY

U.S. airlines transport over 600 million passengers annually, and airline passenger demand is expected to grow to over 900 million by 2010. Additionally, FAA estimates over 126 million flight operations in 2000, which will increase to nearly 142 million (a 13 percent increase) by 2010.

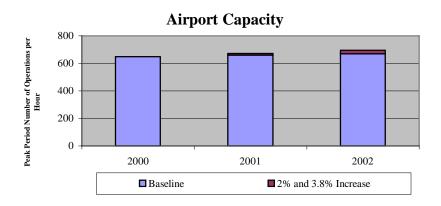
<u>Goal</u>: Increase capacity at select airports where the Free Flight Phase 1 Center-Terminal Radar Approach Control Automation System (CTAS) will be installed by a cumulative total of 2 percent in FY 2001 and 3.8 percent in FY 2002.

CTAS is a decision support tool for air traffic controllers that enables more efficient arrival flows into terminal airspace and onto runways. Nine major airports are scheduled to benefit from the installation of elements of CTAS by the end of 2002. These airports are Atlanta, Chicago O'Hare, Dallas-Fort Worth, Denver, Los Angeles, Miami, Minneapolis, Oakland, and Saint Louis.

### <u>Performance Measure</u>: The cumulative increase in throughput during peak periods at the nine major airports mentioned above.

Peak periods are defined as periods of time throughout the day, typically a half-hour each in duration, during which an airport experiences its highest levels of activity. Throughput is defined as the total number of operations (arrivals and departures) that an airport handles over a specified period of time.

FY 2001 marks the first year FAA established a performance measure for airport capacity. With air travel demand steadily growing from the current 600 million passengers annually, DOT will need to utilize available airport capacity more efficiently to keep pace with the expected 50 percent increase in passenger travel by 2010.



**Data Quality**: The data required to assess this performance measure are based on information collected by FAA's Free Flight Phase 1 Program Office and are taken from actual radar tracks of aircraft arriving or departing from airports. FAA points out that some analysis is required because a number of factors, such as visibility and runway configuration, can affect capacity. We have not reviewed the adequacy or quality of the data.

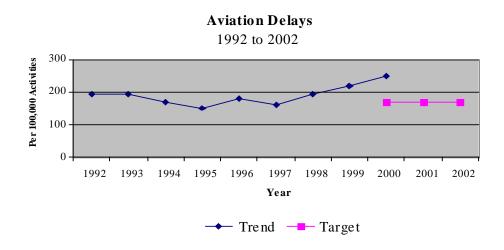
### 10. COMMERCIAL AVIATION DELAYS

Commercial aviation delays are estimated to cost airlines over \$3 billion per year. Passengers are directly affected by missed flight connections, missed meetings, and loss of personal time. According to FAA, there are approximately 20 congested airports, each averaging over 20,000 hours of flight delay per year. Likewise, in 2000, over 1 in 4 flights (27.5 percent) were delayed, canceled, or diverted, affecting approximately 163 million passengers. Moreover, of those flights arriving late, the average delay exceeded 52 minutes. Delays throughout the system are projected to increase as passenger demand continues to rise.

<u>Goal</u>: Reduce the number of aviation delays (as tracked by FAA) per 100,000 activities to 171 in 2000, 2001, and 2002. An activity occurs each time that an air traffic control facility handles an aircraft during take-off, enroute, or landing.

### Performance Measure: Aviation delays per 100,000 activities.

DOT did not meet its performance targets; in fact, the overall delay rate significantly exceeded the target.



RECOMMENDATIONS FOR IMPROVING DATA QUALITY: In a July 2000 audit report, we identified problems with the baseline and performance data used to measure achievement of the delay-reduction targets. Although FAA has changed the baseline to include all types of delay causal categories (e.g., weather, volume, equipment, runway, and other), our original report findings relating to delay data still remain. At the time of our audit, FAA's main delay tracking system was the Operations Network (OPSNET). Because OPSNET data are manually entered, we found a number of data accuracy and quality assurance problems.

For instance, FAA facilities indicated that they do not have the time or the resources to verify the accuracy of the manual delay counts reported. To perform quality assurance, the National Command Center and FAA regional offices perform spot checks of OPSNET delay data. When questionable delay entries are found, the responsible facility is notified and asked to review and correct the potential discrepancy. Yet, we found this did not ensure that corrections were made in OPSNET. For example, at Memphis International Airport, the National Command Center had notified air traffic control staff of data entry errors. However, FAA did not take corrective actions until after the national media cited errors.

In response to our recommendations, FAA has adopted DOT's current definition of a delayed flight—as one arriving 15 minutes or more after the scheduled arrival time. In addition, DOT (working with FAA and the airlines) has made substantial progress towards establishing a common system for tracking the causes of arrival delays and cancellations. Once this new system is in place and is producing good causal data, FAA plans to replace the existing OPSNET-based performance measure with one or more new measures in the 2003 performance plan.

### 11. HIGHWAY BRIDGE CONDITIONS

There are about 115,000 bridges on the National Highway System (NHS). Approximately 21.5 percent of those bridges were classified as functionally or structurally deficient in 2000. Functionally or structurally deficient bridges lack the configuration and/or capacity to support the potential traffic. Structurally deficient bridges can also present a potential safety hazard if appropriate weight restrictions are not calculated, posted, and observed.

<u>Goal</u>: Reduce the number of deficient bridges to 21.0 percent by the end of FY 2002 by improving the condition of bridges on the National Highway System so that public access to activities, goods, and services is not impaired.

<u>Performance Measure</u>: Percentage of bridges on the National Highway System that are deficient.

Each State is required to have a qualified bridge inspection unit, perform inspections of the bridges, and maintain a bridge inventory in accordance with American Association of State Highway and Transportation Officials (AASHTO) bridge procedures. The bridge condition ratings derived from the inspections are reported to FHWA annually. Based on these reported bridge conditions, FHWA annually apportions bridge rehabilitation and replacement funds: for FY 2000, \$3.24 billion was apportioned to the States and District of Columbia for bridge replacement and rehabilitation.

The trend has been a reduction from a deficiency rate of 25.7 percent in 1994. The results in 2000 indicate that DOT met the performance target.

Percent of NHS Bridges That Are Deficient					
	1999	2000	2001	2002	
Target:	22.8	22.5	22.3	21.0	
Actual:	23.0 <sup>a</sup>	21.5			

<sup>a</sup>Revised

<u>Data Quality:</u> We examined the accuracy of data related to bridge condition in three audits between 1988 and 1998. We reported that FHWA did not have reasonable assurance that federally owned bridges are properly inventoried, reported, or inspected. For example, we found that the National Bridge Inventory did not include over 47 percent (about 4,770) of the total number of federally owned bridges. We also found that the Inventory did not properly reflect the conditions of federally owned bridges open to the public. In a review of State and local bridges, we found that States had not performed underwater inspections, established internal controls, or conducted thorough inspections. In response to

our reports, FHWA took appropriate corrective actions that resolved all our recommendations.

### 12. HIGHWAY CONGESTION

Highway congestion has significant economic impacts: in 1997, congestion cost an estimated \$72 billion in wasted fuel, lost wages and decreased productivity. The current measures are intended to track the impact of congestion on travelers. FHWA revised the performance measure this year by discontinuing the old measure of "hours of delay per 1000 vehicle-miles traveled on Federal-aid highways." In its place, the Department has initiated three new measures.

<u>Goal</u>: Limit the percentage of total annual urban-area travel that occurs in congested conditions to 33.4 percent in FY 2001 and 33.7 percent in FY 2002.

<u>Performance Measure</u>: The percentage of total annual urban-area travel that occurs in congested conditions.

The actual percentage of total annual urban-area travel that occurs in congested conditions was 32.6 percent in FY 1999 and 33.1 percent (projected) in FY 2000. No goals for this element were set before this year.

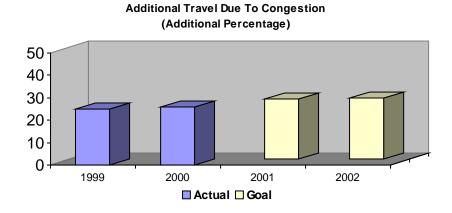
### 50 40 30 20 10 1999 2000 2001 2002 Actual Goal

**Percentage of Urban Travel in Congested Conditions** 

<u>Goal</u>: Limit the percentage of annual urban-area peak period travel time attributable to congestion to 26.6 percent in FY 2001 and 27.2 percent in FY 2002.

<u>Performance Measure</u>: Of annual urban-area peak period travel time, additional percentage of travel time attributable to congestion.

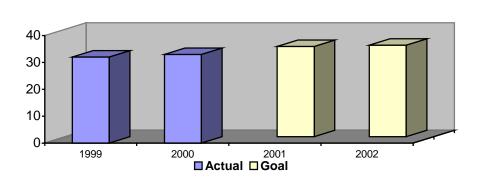
The actual percentage of annual urban-area peak-period travel time that was attributable to congestion was 25.0 percent in FY 1999 and 26 percent (projected) in FY 2000. No goals for this element were set before this year.



<u>Goal</u>: Limit the total average annual hours of extra travel time due to delays for the individual urban area traveler to 33.5 hours in FY 2001 and 34 hours in FY 2002.

<u>Performance Measure</u>: For the individual urban area traveler, the average annual hours of extra travel time due to delays.

The actual hours of extra travel time attributable to delays were 32 in FY 1999 and 33 (projected) in FY 2000. No goals for this element were set before this year.



Annual Hours of Extra Travel Due To Delays

**<u>Data Quality:</u>** We have not performed audit work to validate the data used to support these three new performance measures.

### 13. PIPELINE SPILLS: HAZARDOUS MATERIALS

Annually, pipelines transport more than 600 billion ton-miles of petroleum and other hazardous liquids across the country. Pipelines are usually the least costly way to transport these bulk cargoes. However, handling and transporting hazardous materials entails risk. Due to the caustic nature of these materials, any spill into the environment is potentially significant. Additionally, flammable liquid spills can have catastrophic and fatal results.

<u>Goal</u>: In 2002, keep hazardous material spills at no more than .014 tons per million ton-miles shipped by pipelines – a 12 percent reduction from DOT's target for year 2000.

<u>Performance Measure</u>: Tons of hazardous liquid materials spilled per million ton-miles shipped by pipelines.

Hazardous liquid spill volumes can vary widely. During the past 11 years, spill totals ranged from .013 to .025 tons per million ton-miles shipped. DOT expects spillage to decrease about 6 percent annually during the next 2 years, from year 2000 targets. DOT exceeded its performance target for 2000: .013 actual versus .016 tons of targeted hazardous liquid materials spilled per million ton-miles shipped.

#### 

**Liquid Pipeline Spills** 

**RECOMMENDATIONS FOR IMPROVING DATA QUALITY:** Our March 2000 report "Pipeline Safety Program" concluded that RSPA did not collect sufficient data to evaluate Government Performance and Results Act measures, including the performance measure for hazardous liquid transmission pipelines.

We recommended that RSPA revise collection and processing of pipeline accident data to expand causal categories for more detailed trend analysis, and clarify accident form instructions so that operators will be more consistent and accurate in reporting accident causes.

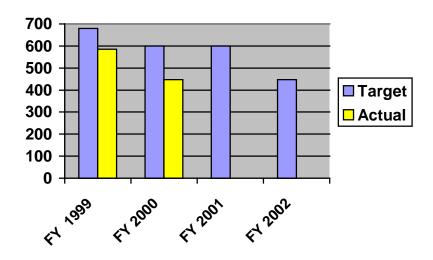
In response to these recommendations, RSPA issued a Notice of Proposed Rulemaking in May 2001 to revise reporting requirements for hazardous liquid pipeline accidents. With the revisions, RSPA would adopt recognized industry failure causal categories for natural gas and hazardous liquid pipeline incidents. According to RSPA, the revisions would further standardize statistics for all types of pipelines, increase the overall usefulness of the data, and make analysis more efficient and meaningful.

Further, RSPA will implement revised procedures to examine accident reports submitted by pipeline operators. Under the revised procedures, RSPA will keep accident reports open until all information is finalized and complete, and new tracking procedures will permit RSPA to pursue enforcement action on operators that do not comply with reporting requirements.

### 14. AIRCRAFT NOISE EXPOSURE

Public concern and sensitivity to aircraft noise around airports is high. In recent years, noise complaints have increased even while quieter aircraft technology has been introduced. DOT's goal of reducing the number of people impacted by noise around airports was based upon transitioning to the use of quieter aircraft, which has been largely achieved.

Number of People in the U.S. Exposed to Noise Levels of 65 Decibels or More (in Thousands)



<u>Goal</u>: Reduce the number of people in the United States exposed to significant aircraft noise levels. FAA considers a day-night average sound level of 65 to be "significant" noise and not compatible for residential use.

<u>Performance Measure</u>: Reduce the number of people exposed to significant aircraft noise.

<u>Data Quality</u>: DOT acknowledges that because modeling is used by FAA to determine the number of people exposed to significant noise levels there are limitations in the results, such as not including military and general aviation aircraft.

There is not a relationship between the performance measurement target and the strategies and initiatives to achieve the FY 2002 target. The majority of FY 2002 funding for noise strategies and initiatives will come from FAA's Airport

Improvement Program (AIP). In FY 2002, DOT states the AIP will provide \$394 million for noise-reducing activities. These activities include soundproofing or purchasing residences or building, and noise reduction planning. However, DOT acknowledges that the FY 2002 goal and performance measure do not measure the benefit from these AIP funds. Given the significant amount of funds the AIP provides for noise reducing activities, DOT should capture the benefits from AIP grants in its aircraft noise exposure performance measure. In discussing with agency management our preliminary recommendation that a goal and performance measure be developed to track the impact of AIP grants, we learned the Department is already planning to develop such goals and measures for inclusion in its FY 2003 Performance Plan.

**RECOMMENDATION FOR NEW GOAL**: The Department should follow through on its plans to implement a new goal to reduce the number of people exposed to significant noise by using AIP noise grants for soundproofing and purchasing residences and buildings.

**RECOMMENDATION FOR NEW PERFORMANCE MEASURE**: The Department should follow through on its plans to implement a new performance measure to capture the number of people no longer exposed to significant aircraft noise as a result of AIP noise grant funds.

<u>Data Quality</u>: Currently, FAA does not have a system in place to capture the number of people no longer exposed to significant aircraft noise as a result of AIP grants. FAA officials stated they are attempting to quantify the gains from AIP grants into future methodologies, for determining numbers of people exposed to significant aircraft noise.

### 15. CRITICAL TRANSPORTATION INFRASTRUCTURE PROTECTION

The U.S. transportation system is one of the most developed in the world, covering numerous modes of travel. The system increasingly relies on information and telecommunication systems. Given our open society, the system is vulnerable to attempts to destroy or degrade its infrastructure and performance.

DOT has a three-pronged strategy for countering infrastructure attacks through:

- 1) gathering and communicating intelligence information to those who need to act;
- 2) taking proactive measures to protect DOT assets; and,
- 3) working in partnership with industry to identify and counteract vulnerabilities. The one performance measure in this area, however, involves communicating threat information, which only addresses the *first* of DOT's *three* strategies for protecting against infrastructure degradation. Protecting DOT assets was discussed in the performance plan; however, no performance measures were established for securing physical assets. While performance measures were established for securing critical cyber assets (computer systems), they were listed as organization excellence goals versus strategic goals.

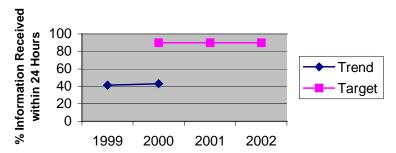
<u>Goal</u>: For FY's 2001 and 2002, ensure that 90 percent of state and local agencies and businesses that own and operate the Nation's transportation infrastructure receive threat information within 24 hours.

<u>Performance Measure</u>: The percentage of positive receipt replies that owners and operators make in response to Transportation Security Information Reports (TSIRs).

TSIRs represent threat warning information that must be provided to transportation system operators through DOT operating administrations to protect against terrorist acts.

DOT set goals for FY 2000 through 2002 to provide 90 percent of transportation system operators with TSIRs within 24 hours. As illustrated below, this goal represents an increase over the 41.5 percent of TSIRs disseminated during the FY 1999 base year. However, for FY 2000, only 43 percent of the operators reported that the information was received within the specific timeframe. Positive responses are low because DOT operating administrations have not overcome problems with disseminating information to end-users, once TSIRs are received.





**Data Quality:** We have not verified the accuracy of data reported for the performance measure. However, the Performance Plan reports that the use of TSIRs is limited, which reduces the validity of the measure. For example, only three TSIRs were issued for FY 2000, and one of the TSIRs had limited geographical coverage. The Performance Plan also reports that DOT does not have accurate lists of owner/operators, which decreases the accuracy of the data and validity of the measure.

### RECOMMENDATION FOR NEW GOALS AND PERFORMANCE MEASURES:

DOT should consider establishing performance measures and appropriate goals that address all three approaches for securing critical transportation infrastructure, including protecting cyber and physical assets and partnering security plans with industry.

- 1. <u>For Critical Cyber Infrastructure</u>: Convert the management challenge goals addressing computer security for infrastructure-critical systems in the current report to a performance measure under the *National Security Strategic Goal*-"DOT will have completed certification and authorization for 25 percent (by November 2001), 60 percent (by June 2002), and 100 percent (by May 2003) of its infrastructure-critical systems."
- 2. For Critical Physical Infrastructure: New performance measures should be developed to help prioritize and measure the work. In DOT's Critical Infrastructure Protection Plan, the Department identified the well being of three sets of physical infrastructure as critical to the national security, economy, and public faith National Airspace (NAS) facilities, USCG's Operations Systems Center, and the Saint Lawrence Seaway Development Corporation Lock System. While specific plans have been developed to

secure the latter two, there were no plans or timetable established for securing NAS facilities.

As stated in the DOT Performance Plan, FAA will "continue conducting security risk assessments at staffed facilities, and will implement a Facility Security Management Program to determine the most cost-effective way to protect its employees and critical infrastructure." Performance measures should be established to help prioritize this effort for meeting the May 2003 deadline for securing critical infrastructure.

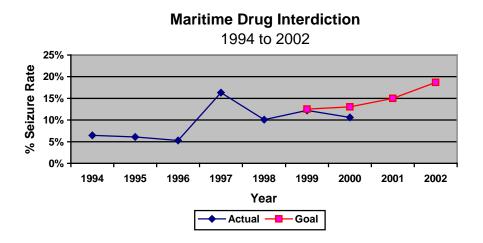
3. <u>For Critical Infrastructure Owned by Private Sectors</u>: DOT has concluded securing the Nation's railroad system is a priority. The Association of American Railroads has agreed to be DOT's partner and plans to conduct a vulnerability assessment for intra-rail systems. However, there is no timetable or performance measure to gauge the progress.

### 16. DRUG INTERDICTION

Approximately 52,000 deaths occur annually in America from drug abuse and drug-related crimes, accidents, and illnesses. While the Coast Guard seized a record 60.2 metric tons of cocaine and about 23 metric tons of marijuana in 2000, an estimated 568 metric tons of cocaine traveled through the transit zone (a 6 million square mile area roughly equivalent to the size of the continental United States and includes the Caribbean Sea, the Gulf of Mexico, and the Eastern Pacific Ocean) via non-commercial maritime means and arrived in the United States.

<u>Goal</u>: By FY 2001, seize 15 percent of cocaine shipped through the transit zone via non-commercial maritime means, and seize 18.7 percent by FY 2002.

<u>Performance Measure</u>: Seizure rate for cocaine that is shipped through the transit zone (high seas between source counties and the United States).



<u>Data Quality</u>: As part of a 1998 preliminary review of U.S. Coast Guard drug interdiction operations, we found that Coast Guard drug seizures are reconciled against an interagency database, which records official agency-level seizure totals for all enforcement agencies. We observed how seizures are reviewed and validated at quarterly meetings of an interagency drug interdiction workgroup. This same interagency workgroup develops, based on strict criteria, the estimate for the total noncommercial maritime cocaine flow which is used as the Government-wide official cocaine flow estimate. This estimation process has changed slightly every year, improving the overall estimate and resulting in a more accurate seizure rate measure, but making year-to-year comparisons slightly inconsistent.

Before Fiscal Year 2000, the Coast Guard relied upon the "smuggler success rate" as the key performance measure for reducing illegal drug flow. Deriving the "smuggler success rate," which was based on the estimated amount of illegal drugs that reached the U.S. via noncommercial maritime routes, required the use of several estimated numbers and calculated rates. By shifting its measure to the "seizure rate," the Coast Guard has decreased the probability of error and provided a more accurate picture of the Coast Guard's efforts.

### PRIORITY MANAGEMENT CHALLENGES

In its 2000 Performance Report/2002 Performance Plan, the Department describes 30 management challenges. The Department adapted these challenges from the broad areas in the OIG's <u>Top Ten Management Challenges Report</u> issued January 18, 2001, the General Accounting Office's <u>Major Management Challenges and Program Risks</u> issued in January 2001, and DOT items identified in the <u>Fiscal Year 2002 President's Budget Proposal</u>.

We have reviewed each of these management challenges to determine whether they were given appropriate attention in the Department's performance report/performance plan. Generally, we found the Department's management challenge descriptions reasonably state DOT plans and progress in these areas.

Also, of the 30 management challenge items: 22 are covered by performance measures – although the OIG recommends improvements to the goals, performance measures, and/or underlying data in 16 of these management challenge areas. Of the 8 management challenges that are not covered by performance measures, the OIG is recommending goals and performance measures for the Department's consideration in two of these areas.

Enclosure One includes many of the OIG's recommendations for improvements to DOT goals, performance measures, or underlying data. These recommendations are in Enclosure One because they relate to what the OIG considers to be the Department's 16 most significant areas of concern.

In addition, we would encourage the Department to formally set the following goals in the listed management challenge areas, develop appropriate performance measures to track progress toward these goals, and formally report on these performance measures in each year's GPRA performance report/performance plan.

### • Management of Large Transportation Infrastructure Projects:

- increase the number of Infrastructure Projects valued at over \$1 billion that have implemented the "Earned Value Management" system for tracking costs and progress.

#### • Aviation Security:

- increase the number of bags each explosives detection machine screens each day.

#### • Air Traffic Control Modernization:

- achieve 90 percent of the cost, schedule, and performance goals for air traffic control modernization programs.

### • Air Traffic as a Results-Oriented Organization:

- complete a strategic business plan that provides key corporate strategies and operating plans over the next several years, and describes the timing and impact of those strategies.

### • Airline Mergers and Customer Service Commitment:

- achieve 95 percent compliance by Airlines with current consumer protection requirements for air travelers.
- implement regulatory changes to: (1) increase the maximum level of involuntary denied boarding compensation, and (2) revise the method by which mishandled baggage data are collected and reported.

### • Deepwater Acquisition Management:

- achieve contractor performance in meeting cost objectives and adhering to schedules that surpasses other major DOT procurements.

### • Ship Disposal:

- develop and implement goals and performance measures to track MARAD progress toward scrapping of backlog of obsolete vessels by FY 2006.

### • Amtrak Financial Viability:

- lower cash operating losses to \$406 million in 2001, \$281 million in 2002, and \$248 million in 2003.
- **Departmental Business Practices:** The Department has created a number of separate management challenges under this broad heading. Key actions to be taken in these areas include:
  - <u>Departmental Rulemakings</u>: lower DOT completion time for significant rulemakings from the baseline average of 3.8 years to some lesser number of years by FY 2005.
  - <u>DOT Audited Financial Statements</u> and <u>FAA Financial Management</u>: achieve unqualified audit opinions for FAA and DOT Consolidated Financial Statements for FYs 2001 and 2002.

- <u>Contract Close-Out</u>: by September 30, 2003, reduce by 95 percent the backlog of contracts physically completed for at least 3 years but not administratively closed out as of October 1, 2000.
- <u>GPRA Implementation</u>: achieve appropriate and accurate linkage of performance goals/measures to agency costs by the end of FY 2002.
- <u>Strategic Human Resources Planning</u>: complete the tactics in the DOT Human Resources Strategic Plan by the end of FY 2004.