U.S. DEPARTMENT OF COMMERCE

Office of Inspector General

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

OAR Needs Additional Management Systems to Meet the Intent of the Results Act

Audit Report No. STL-8519-8-0001 / September 1998

Office of Audits, Seattle Regional Office

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EXECUTIVE SUMMARY

The Office of Oceanic and Atmospheric Research (OAR) is the research agency of the National Oceanic and Atmospheric Administration. OAR conducts and directs research programs in coastal, marine, and atmospheric sciences through (1) its own laboratories and offices; (2) networks of university-based programs throughout the country, and (3) various international activities. OAR has three major components: Environmental Research Laboratories, the National Sea Grant College Program, and the National Undersea Research Program. NOAA plans to transfer the Office of Global Programs from the National Ocean Service to OAR within the next year.

We reviewed OAR's current managerial organization. Our objective was to determine if OAR's current systems and processes can meet the intent of the Government Performance and Results Act of 1993 (Results Act). We identified three areas where the current structure is inadequate, and have developed detailed guidelines as to how OAR can implement the necessary systems and processes. Specifically:

●   OAR does not have a strategic plan to clarify its mission, goals, and objectives; to formally communicate agency priorities to the field level; and to use as a basis for preparing resource allocation plans. OAR has initiated several attempts to create a strategic plan, but these efforts have failed because formal strategic planning has not been an OAR priority. Sound management practices, as embodied in the Results Act, require that agencies use a strategic planning process. (See page 4.)

●   OAR needs to integrate its budgeting process with a strategic planning process. Integrating these processes will allow OAR to comprehensively analyze its planning goals and funding needs, and present a clearer picture of its operations to those outside the organization. Because there has been no strategic plan to which OAR could link its budgeting process, OAR presently develop its budget in response to the NOAA planning and budget process. A comprehensive and integrated OAR approach to planning and budgeting will provide a more complete description of how OAR's goals and objectives are to be achieved, and how OAR can satisfy the intent of the Results Act. (See page 6.)

●   OAR lacks a unified management information system to evaluate project performance. Such a system is necessary to allow managers to more effectively define and communicate project objectives, report on progress, and track the expenditure of resources. (See page 7.)

We recommend that the Assistant Administrator for Oceanic and Atmospheric Research:

- Institute policies and procedures to create and implement a strategic planning process that meets the intent of the Government Performance and Results Act. OAR's strategic planning should be consistent with and complementary to NOAA's and the Department's strategic plans

- Ensure that the OAR budgeting process is integrated with the new OAR strategic planning process.

- Develop a unified OAR-wide management information system that can be linked to strategic planning and can provide the performance information required under applicable Results Act guidelines. The system should meet the following criteria: (1) establish and communicate objectives and milestones; (2) track performance; and (3) establish accountability for performance and resources allocated.

In response to the draft audit report, NOAA concurred with our recommendations. NOAA plans to integrate the budgeting and strategic planning processes. NOAA agrees that OAR should improve systems to track performance results and resource allocation. NOAA plans to implement our recommendations through the Strategic Plan Reporting System currently implemented in the NOAA resource system (FIMA); through improved crosswalks between the NOAA strategic planning structures and OAR's current program structure; and through better strategic plan linkages in the budget development process.

 We agree with NOAA's planned course of action.

INTRODUCTION

The Office of Oceanic and Atmospheric Research (OAR) is the organization responsible for much of the scientific research in support of NOAA's missions. OAR provides the short-term research needed to improve existing NOAA products and services, and the longer-term research and development needed to create new products and services as needs, knowledge, and technologies change.

OAR, headquartered in Silver Spring, Maryland, has an annual operating budget of approximately $277 million and about 900 employees. It coordinates a national network of federal laboratories and university-based programs. OAR currently has three components: the Environmental Research Laboratories (ERL), the National Sea Grant College Program, and the National Undersea Research Program (NURP). NOAA has also begun to transfer the Office of Global Programs (OGP) from the National Ocean Service to OAR.

OAR provides national and international leadership on critical environmental issues. It addresses much of the environmental research and development needs not only of NOAA, but also of the Department of Commerce, other federal agencies, states and industry.

ENVIRONMENTAL RESEARCH LABORATORIES
AND JOINT INSTITUTES

The ERL system consists of a headquarters office in Silver Spring, 12 federal research laboratories, and 10 Joint Institutes. The institutes are the academic institutions that participate in ERL research activities. The federal laboratories and academic institutes form research centers designed to study the atmosphere, oceans, and land surfaces, as well as their interconnections; coastal and inland aquatic environments; air quality and associated ecosystem processes; and the solar-terrestrial environment.

SEA GRANT

The National Sea Grant College Program was established to enhance the development, use, and conservation of the nation's marine and Great Lakes resources. The program was established as a network of Sea Grant Colleges to conduct education, training, and research in all fields of marine study. Sea Grant was also directed to distribute grants and contracts to public and private institutions that work to develop marine resources.

There are 29 Sea Grant College programs in the coastal and Great Lakes states, plus Puerto Rico. These programs form the core of a national network of scientists, engineers, educators, students, and outreach specialists devoted to accomplishing research and outreach objectives.

Sea Grant supports marine and coastal resource research of immediate public importance and application. It provides a major source of support for applied marine science research, including coastal and ocean engineering and management, fisheries and aquaculture, and marine-related social sciences and law. One-third of Sea Grant's funds are to be matched by state or local governments, industry, or other sources.

NATIONAL UNDERSEA RESEARCH PROGRAM

NURP conducts research via submersibles, underwater laboratories, remotely operated vehicles and observatories, and diving. The program is composed of a headquarters office and six NOAA-funded National Undersea Research Centers. Under an agreement with the Navy, NURP serves as the research manager for civilian use of U.S. Navy deep submergence vehicles. NURP also represents NOAA in supporting, along with the National Science Foundation and the Office of Naval Research, civilian use of a deep submergence vehicle operated by the Woods Hole Oceanographic Institution. NURP acquires otherwise unobtainable observations, samples, and experiments related to NOAA research goals. It also gives the U.S. research community access to civilian, military, and international undersea technology.

OFFICE OF GLOBAL PROGRAMS

OGP conducts the NOAA Climate and Global Change Program, which assists in carrying out NOAA's responsibility to routinely provide climate forecasts and products to the nation. OGP guides NOAA's efforts to coordinate a multinational initiative to establish an International Research Institute.

PURPOSE AND SCOPE OF AUDIT

The purpose of our audit was to determine whether OAR's current management systems can meet the intent of the Government Performance and Results Act of 1993, P.L. 103-62. Our work focused on integrated planning, budgeting, and tracking systems. We initiated our review in June 1996. Other priorities resulted in our suspending work several times. Our fieldwork, conducted primarily at OAR headquarters in Silver Spring, MD, was completed in March 1998.

We reviewed OAR's administrative controls related to research management. We focused on the policies and procedures related to research selection, prioritization, tracking, and reporting of accomplishments. We interviewed OAR senior and mid-level managers who were knowledge-able of the systems and procedures in place. Our analysis found that some of OAR's controls were not adequately designed or implemented, as discussed in the following sections.

Our review did not rely on data generated by OAR's computer systems.

This review was conducted in accordance with generally accepted government auditing standards and was performed under the authority of the Inspector General Act of 1978, as amended, and Department Organization Order 10-13, dated May 22, 1980, as amended.

FINDINGS AND RECOMMENDATIONS

We identified three areas where OAR's current management processes and systems need improvement in order to meet the requirements of the Results Act. Those processes and systems are less than optimal because of inadequate strategic planning, a budget process that is not integrated with planning, and the lack of a unified OAR-wide management information system. Each of these elements will have to be improved before OAR can satisfy the intent of the Government Performance and Results Act.

I.   STRATEGIC PLANNING PROCESS NEEDED

OAR does not have a strategic plan to (1) clarify its mission, goals, and objectives; (2) formally communicate agency priorities to the field; and (3) use as a basis for preparing resource allocation plans. OAR has initiated attempts to create a strategic plan, but these efforts have faltered because formal strategic planning has not been an OAR priority. Sound management practices, as embodied in the Results Act, require that agencies use a strategic planning process. Strategic planning is beneficial to an organization in the clarification of future direction, establishment of priorities, and development of a basis for decision making.

The Results Act requires federal agencies to have a strategic plan to ensure efficiency and effectiveness throughout the organization. Under the Act, a strategic plan should:

- include a comprehensive mission statement covering the agency's major functions and operations;

- set forth general goals and objectives, including outcome-related goals and objectives, for the agency's major functions and operations;

- describe how the goals and objectives are to be achieved, including the operational processes, skills and technology, and human, capital, information and other resources required to meet them;

- describe how the performance goals included in the agency's performance plan relate to the general goals and objectives in the strategic plan;

- identify the key factors beyond the agency's control that could significantly affect the achievement of the general goals and objectives;

- describe the program evaluations used in establishing or revising the general goals and objectives, with a schedule for future program evaluations; and

- cover a period of at least five years, and be updated at least every three years.

Lacking its own strategic plan, OAR has tied its planning to NOAA's strategic plan. However, NOAA's strategic planning entails broad categories appropriate for the large agency. Unique aspects of OAR's mission cannot be adequately addressed within these broad categories. In addition, many of OAR's research initiatives cut across NOAA's strategic planning categories, making it even more problematic for OAR to use NOAA's plan as its own. An OAR strategic plan would demonstrate how OAR activities and initiatives support the mission of the line office, NOAA, and the Department.

OAR has made several attempts at strategic planning, but past efforts have not been completely successful. OAR's Program Development and Coordination Group initiated another attempt at developing an OAR strategic plan in February 1998. Progress on this effort has been slow.

Recommendation

We recommend that the Assistant Administrator for Oceanic and Atmospheric Research:

- institute policies and procedures to create and implement a strategic planning process that meets the requirements of the Government Performance and Results Act. OAR's strategic planning should be consistent with and complementary to NOAA's and the Department's strategic plans.

II.   BUDGETING AND PLANNING LINKAGE NEEDED

OAR needs to link its budgeting process with the proposed strategic planning process. Integrating these processes will allow the agency to comprehensively analyze its planning goals and funding needs, and to present a clearer picture of its operations to those outside the organization. Because there has been no strategic plan to which OAR could link its budgeting process, OAR presently develops its budget in response to the NOAA planning and budget process. Sound management practices, and the Results Act, necessitate a comprehensive and integrated approach to planning and budgeting. Integrating the OAR strategic plan and the OAR budgeting process will provide a more complete description of how OAR's goals and objectives are to be achieved, and how OAR can satisfy the intent of the Results Act.

OAR senior managers noted that because OAR does not have a strategic plan, it has shaped its budget in the context of the NOAA planning and budgeting process. However, many of OAR's research initiatives do not fit easily into the NOAA strategic planning categories. Consequently, it has been difficult for OAR to clearly articulate its research efforts and funding needs to NOAA. Creating a process within OAR to coordinate planning goals and funding needs prior to participating in the NOAA process would enable OAR to present a clearer, more coherent picture of OAR requirements.

Recommendation

We recommend that the Assistant Administrator for Oceanic and Atmospheric Research:

- Ensure that the OAR budgeting process is integrated with the new OAR strategic planning process.

III.   MANAGEMENT INFORMATION SYSTEM NEEDED

OAR does not have a unified, OAR-wide information system to establish milestones for research, report on progress, and track the expenditure of resources. Individual components within OAR have developed a variety of databases to document historical project information. The databases consist mainly of lists of projects and grants and information about prior fiscal years. However, the systems have been developed independently without overall OAR management guidance, resulting in management systems that track different degrees of information, and lack standardization. In addition, none of the systems document and track expected accomplishments and how allocated resources will be utilized in the near future.

The Results Act directs federal agencies to establish effective performance measurement systems. No later than March 31, 2000, government agencies must report to OMB and the Congress on their fiscal year 1999 performance. The Act requires detailed performance reports. For its part, OAR must be able to track and report on its progress in establishing performance goals for each program, expressing those goals in objective, quantifiable, and measurable form, describing the resources and activities needed to meet the goals, establishing performance indicators, establishing a basis for comparing results with goals, and providing for alternatives to objective and quantifiable formats.

In line with sound management practices, research organizations such as OAR should also develop and implement a management information system. The system should be linked to strategic planning efforts and provide the necessary information to report OAR performance results. Appendix II includes additional information to assist OAR in developing an effective management information system.

Recommendation

We recommend that the Assistant Administrator for Oceanic and Atmospheric Research:

- Develop a unified OAR-wide management information system that is linked to strategic planning and can provide the performance information required under applicable Results Act guidelines. The system should meet the following criteria: (1) establish and communicate objectives and milestones; (2) track performance; and (3) establish accountability for performance and resources allocated.

Agency Response

In response to the draft audit report, NOAA concurred with our recommendations. NOAA plans to integrate the budgeting and strategic planning processes. NOAA agrees that OAR should improve systems to track performance results and resource allocation. NOAA plans to implement our recommendations through the Strategic Plan Reporting System currently implemented in the NOAA resource system (FIMA); through improved crosswalks between the NOAA strategic planning structures and OAR's current program structure; and through better strategic plan linkages in the budget development process.

OIG Comments

We agree with NOAA's planned course of action.

INTEGRATED OAR STRATEGIC PLANNING,
BUDGETING, AND TRACKING SYSTEM

Appendix A discusses a proposed integrated strategic planning, budgeting, and tracking system for OAR. Our example, based upon sound management practices, is provided as an aid for OAR in designing its own processes.

<u>The Army Research Laboratory Project</u>

The Army Research Laboratory (ARL) recently completed a Results Act pilot project for performance measurement. OMB designated ARL as the only working research and development laboratory to be included in the Results Act pilot process. As the organization responsible for scientific research in support of NOAA's missions, OAR might find the results of the ARL study helpful as OAR and NOAA move to meet the intent of the Results Act. In a summary report on the past study, ARL discussed three elements that it found useful for evaluating different aspects of a research program.

Peer Review

Contemporary or retrospective peer review is a generally accepted approach to performance evaluation throughout the world of science and technology. Ideally, a panel of recognized experts in a scientific field is well-equipped to make judgments on the technical quality of the programs, the qualifications of the technical staff, and the adequacy of the facilities and equipment. However, peer reviews is limited by the breadth, depth, and independence of the reviewers. Moreover, peer review specifically responds to the area of quality and, to a more limited extent, productivity, but it not expected to speak to the issue of relevance with great specificity.

Metrics

The ARL project termed things that are "countable" in the world of research and development as metrics. Metrics can provide additional information regarding an organization, specifically as indicators of its functional health. Metrics are judged to be necessary in any evaluation process. However, it is imperative that metrics not be taken out of context or overemphasized.

ARL's research into metrics identified 59 different quantities, 15 of which are tracked by the Director's staff and reported to the Director for use as a management tool. Some examples are as follows: the percentage of the 10 most important research tasks completed annually within each directorate, the number of technical reports, the percentage of doctorate degrees among the scientist and engineer portion of the workforce, and the number of significant awards received (from national or international bodies).[1]

Customer Feedback

The third element applies the concept of a customer to the research effort. While this is a familiar concept in the world of development and production, it is somewhat foreign to the world of research. This concept is based on the premise that if a laboratory is being paid for work, research or otherwise, the payer presumably expects a product. The payer (NOAA, other governmental agencies, nonprofit organizations, or the general public) can be viewed the customer. ERL has prepared a draft plan designed to recognize and obtain feedback from a targeted customer base.

<u>Possible Management Processes for OAR</u>

The elements noted in the ARL project can be integrated into a concept called the "balanced scorecard"[2]. The balanced scorecard is a strategic management system many companies have adopted to improve their performance measurement systems. Our example is provided as an aid to OAR in designing its process to meet specific Results Act guidelines.   The scorecard shown compares financial targets to actual results, compares research targets to results, and tracks performance among OAR's three current components (ERL, NURP, and Sea Grant). The process assists in integrating the budgeting process with the strategic planning process.
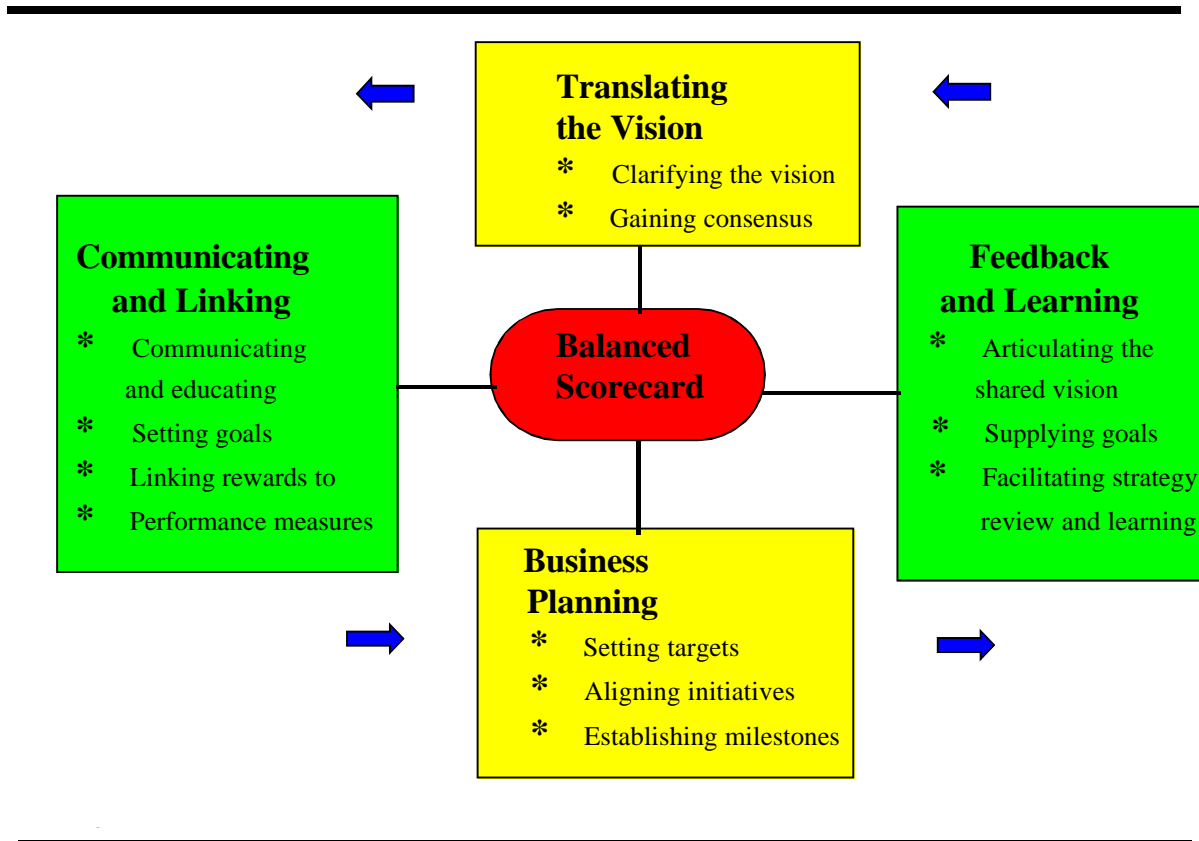
The scorecard should be used individually by the three OAR components. The results would then be collected by OAR and compiled into a master agencywide scorecard on a weighted average scale. Using a scale would ensure a valid comparison, as the components' percentage of the overall score would correspond to their share of OAR's overall budget. The scorecard would give OAR senior management an evaluation technique intended to measure the progress of research and the financial condition of its various components. The scorecard would also let OAR introduce the following four management processes that, separately and in combination, contribute to linking long-term strategic objectives with short-term actions.

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[1]Dr. Edward A. Brown, *Applying the Principles of the Government Performance and Results Act to the Research and Development Function* (1996).

[2]Kaplan R. and Norton D. (1997) "Using the Balanced Scorecard as a Strategic Management System," *Harvard Business Review,* pp. 35-47.

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DIAGRAM A
Managing OAR Strategy: Four Processes

Translating the Vision
* Clarifying the vision
* Gaining consensus

Communicating and Linking
* Communicating and educating
* Setting goals
* Linking rewards to
* Performance measures

Balanced Scorecard

Feedback and Learning
* Articulating the shared vision
* Supplying goals
* Facilitating strategy review and learning

Business Planning
* Setting targets
* Aligning initiatives
* Establishing milestones

LEGEND:

Translating the vision helps OAR managers build a consensus view of the organization's vision and strategy. Despite the best intentions of those at the top, lofty statements about becoming "world class," "centers of research excellence," or "international leadership" do not translate easily into operational terms that provide useful guides to action at lower organizational levels.. For people to act on vision and strategy statements, those statements must be expressed as an integrated set of objectives and measures, agreed upon by all senior management teams, that describe the long-term determinants of success.

Communicating and linking lets OAR mangers communicate their strategy up and down the organization and link it to departmental and individual objectives. Traditionally, departments are evaluated by their financial performance, and individual incentives are tied to short-term financial goals. The scorecard gives managers a way of ensuring that all levels of the organization understand the long-term strategy and that both departmental and individual objectives are aligned with it.

Business planning enables OAR to integrate its business and financial plans. Almost all organizations today are implementing a variety of change programs, each with its own consultants, think tanks, and investigation groups, and each competing for the time, energy, and resources of senior managers. Managers find it difficult to integrate those diverse initiatives to achieve their strategic goals--a situation that leads to frequent disappointments with the programs' results. If OAR uses the goals set for balanced scorecard measures as the basis for allocating resources and setting priorities, it can better undertake and coordinate only those initiatives that move toward its and NOAA's long-term strategic objectives.

Feedback and learning assists OAR with strategic learning. Existing feedback and review processes focus on whether OAR, its components, or its individual employees have met their budgeted financial goals. With the balanced scorecard at the center of its management systems, OAR can monitor short-term results from the three additional perspectives--customers, internal research processes, and learning and growth--and evaluate future strategy in the light of recent performance. The scorecard can thus enable OAR to modify strategies to reflect real-time learning.

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<u>The Balanced Scorecard</u>

This diagram illustrates how performance measures are qualified in a "balanced scorecard," and how actual results are measured against targeted goals.

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	A				**B**	**C**			
	OAR-HQ Targets				**Scorecard Measures**	**OAR Results**			
1	'96	'97	'98	'99		96	'97	'98	'99
	Research: OAR								
2	7	8	9	10	Peer Review Results	5	7		
3	65%	70%	75%	80%	Metrics	45%	50%		
4	8	8	8	10	Customer Feedback	4	6		
	Financial: **OAR**								
5	increase by 4% yearly				Overall Budget (in m$)				
6	decreases by 2% yearly				Overhead and operating expenses				
7	increase by 2% yearly				New budget allotments for research				
	Individual Measures								
	Research: **NURP**								
8	7	8	9	10	Peer Review Results	5	7		
9	65%	70%	75%	80%	Metrics	45%	50%		
10	8	8	8	10	Customer Feedback	4	6		
	Financial: NURP								
11	increase by 4% yearly				Overall Budget (in m$)				
12	decreases by 2% yearly				Overhead and operating expenses				
13	increase by 2% yearly				New budget allotments for research				

_____

Legend:

I. Column B lists OAR's scorecard measurements:
> **A.** Rows 2-4 contain the research performance measurements used in the ARL study.
> **B.** Rows 5-7 contain the financial targets. In this example, they have been based on the *Harvard Business Review* article mentioned on page 2 of this appendix. They would normally be qualified by OAR during the strategic planning phase.
> **C.** Rows 8-13 display the individual financial and research performance measurements of NURP. The category would be extended to also include ERL and Sea Grant.

II. Column A lists yearly performance targets, in objective form, to the related research and financial measurement. OAR would devise a plan to set these targets during the strategic planning process. The row is read left to right.
> **A.** Rows 2-4 list research performance targets; they are in quantifiable form. Peer review results and customer feedback are provided on a scale of 1 to 10. The metric performance target is measured on a 0-100% basis.

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B. Rows 5-7 list financial performance measurement targets, which represent the projected increase or decrease to the related financial measurement.
C. Rows 8-13 list the individual research and financial measurement targets of NURP. The category would be extended to also include ERL and Sea Grant.

III. Column C lists OAR's research and financial results accordingly by year. The scores are read left to right.
A. Rows 2-4 list research performance results; they are in quantifiable form. Peer review results and customer feedback are listed on a scale of 1 to 10. The metric performance target is measured on a 0-100% basis.
B. Rows 5-7 list financial performance results. They represent the actual increase or decrease in the related financial measurement.
C. Rows 8-13 list the individual research and financial measurement results of NURP. The category would be extended to also include ERL and Sea Grant.

IV. Examples:
Question: *What was OAR's targeted and actual peer review scores for 1996?*
Answer: The targeted score was 7 (column A, row 2), and the actual score was 5 (column C, row 2).

Question: *What was NURP's targeted and actual customer feedback scores for 1997?*
Answer: The targeted score was 8 (column A, row 10), and the actual score was 6 (column C, row 10).

SUGGESTED MANAGEMENT INFORMATION SYSTEM TO SUPPORT
STRATEGIC PLANNING, BUDGETING, AND TRACKING SYSTEM

As discussed in the report, OAR needs to develop an information system to complement and support an integrated strategic planning, budgeting, and tracking system. The management information system establishes a process for monitoring and evaluating projects. When properly implemented, such a tracking system helps establish a research organization's accountability and credibility. The management information system described below can serve as an aid for OAR in designing a system and is based upon sound management practices.

An effective, useful management information system is based on several premises. It should be (1) simple to use and have up-to-date information; (2) formally and clearly document project justifications, objectives, and financial information, and (3) clearly identify what is going to be done and when. Given this information, the system can be used to measure performance of the agency, science centers, researchers, and managers.

In addition to its performance evaluation characteristics, the management information system should be used to facilitate communication between OAR's three major components (ERL, NURP, and Sea Grant). The system should be the mechanism in an integrated system that provides a platform for planning, conducting, and evaluating projects. A system that formally documents and clearly defines technical and financial objectives, and which measures the progress of performance, will help create agency accountability and further enhance credibility.

The management information system should encompass three basic elements: A project fact sheet, project milestones to establish goals, and a process to measure project performance. The fact sheet summarizes the pertinent technical and financial information of a project. Milestones are key tasks identified during the project planning process and listed on the fact sheet. Finally, project performance is evaluated by reviewing planned objectives against actual performance.

Project Fact Sheet

The project fact sheet, the key control document of the project planning and tracking system, is a succinct document that highlights only the most important technical and financial data. A fact sheet should be required for every project. New fact sheets should be issued at the end of each fiscal year, which coincides with the new planning and budgeting cycle.

The fact sheet should be prepared and updated during the annual planning process. During this process, the fact sheet should be reviewed concurrently by senior managers, research managers, and resource managers to facilitate communication among these three groups. The review will also allow all three groups to discuss project objectives and milestones, facilitate commitment between research and operation divisions, and assist in allocating resources according to OAR's strategic plan.

The first section of the project fact sheet summarizes the technical objectives and how they will be achieved. The section should provide a narrative description of the project's (1) justification and objectives, (2) methodology, (3) products and services, (4) customers.

The justification and objectives should describe why the project is necessary and specifically address how it will meet the objectives of OAR's and NOAA's strategic goals. The methodology narrative should briefly describe the process needed to achieve the objectives. The products and services category should be a list of accomplishments expected from the project. Any products or services produced should be listed as milestones in a later section. The customers category should be a list of clients that will use the products. The customers listed should be involved in planning the project.

The second section of the project fact sheet should be a quick-reference table that contains key financial information, such as FTEs and dollars budgeted, and actual resources expended. Preparation of this section will require budgeting managers to work closely with the strategic planning committee.

The OAR management information system should include a form that can track all projects by budgeted and actual expenditures by tasks and object classes. To accomplish this, OAR must initiate a system that tracks actual labor dollars associated with individual projects. The system would require ERL, NURP, and Sea Grant to maintain labor distribution records. Such a system establishes accountability for how allocated resources are spent and complies with Results Act requirements.

Milestones

The last section of the project fact sheet contains milestones, which detail the project plans from initiation through completion. The milestones from the fact sheet should be used in the project evaluation process.

OAR should link the project fact sheet with an automated database; then, a milestone report linked to the fact sheet could then be produced that will document the status of each milestone. The database should be used regularly (perhaps monthly) to generate milestones due that period. The milestone reports can be assessed during the project evaluation process.
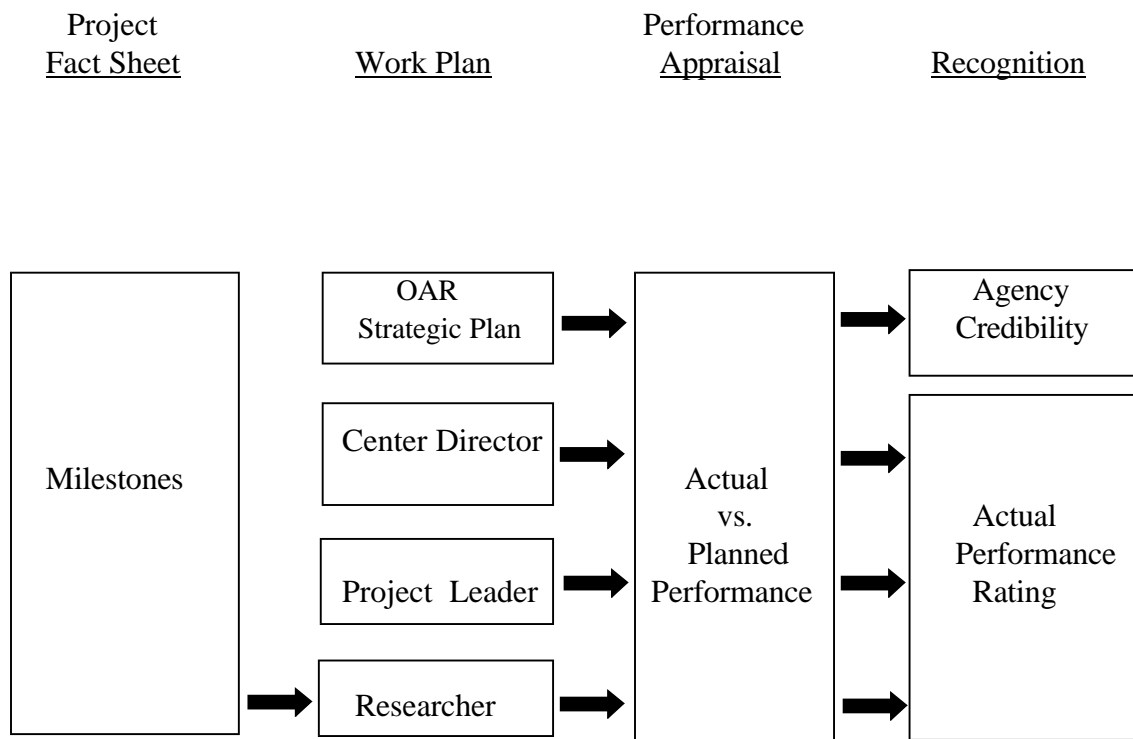
Measuring Performance

The project milestones should also be used to evaluate and establish accountability. The milestones can be used to evaluate individual researchers, managers, and science centers, and can provide an overall evaluation of OAR. This approach would be a demonstrable effort in meeting the intent of the Results Act.

Project milestones should be linked to the performance plans of the people responsible for completing a particular milestone. The milestone from the project fact sheet should be included in the performance plans of the researchers, project leaders, center directors, and other research executives. Linking milestones to performance establishes accountability for achieving milestones. Only critical milestones that are within each researcher's or manager's responsibility and control should be included in the performance plans. Performance plans should be developed during the ongoing strategic planning process and reviewed annually.

As an example, the milestones related to executing and conducting a specific project should be linked to project leaders and individual researchers. Milestones related to project outcomes and products should be linked to research managers and agency executives. This system provides a basis to review planned performance against actual performance at the various organizational levels.

An ultimate goal of a management information system is to increase the communication of information between operating divisions and management, which ultimately establishes accountability. Establishing objectives, milestones, and budgets facilitates communication and helps prevent misunderstanding. Tracking milestones and linking them to performance plans helps to evaluate project performance and establish accountability. With proper implementation, a project tracking system establishes credibility and accountability for the entire agency. The proposed system is illustrated schematically on the following page.

Milestones & Performance Evaluation

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| Project Fact Sheet | Work Plan | Performance Appraisal | Recognition |

Milestones	OAR Strategic Plan	Actual vs. Planned Performance	Agency Credibility
	Center Director		Actual Performance Rating
	Project Leader		
	Researcher		

Performance against milestones ties to work plans, which in turn are linked to recognition and credibility

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
CHIEF FINANCIAL OFFICER/CHIEF ADMINISTRATIVE OFFICER

SEP 30 1998

MEMORANDUM FOR: George Ross
                  Assistant Inspector General for Auditing

FROM: Paul F. Roberts

SUBJECT: OAR Proposed Response to OIG Draft Final
                  Report: OAR Needs Additional Management
                  Systems to Meet the Intent of the Results
                  Act (Report No. STL-8519-8-0001)

The National Oceanic and Atmospheric Administration (NOAA)
has reviewed and concurs with the Office of Inspector
General's (OIG) recommendation on integrating the strategic
planning process with the budget process. NOAA also concurs
that the Office of Oceanic and Atmospheric Research (OAR)
should improve systems to track performance results and
resource allocation. NOAA plans to respond to these
findings through the improved Strategic Plan Reporting
System currently implemented in the NOAA resource system
(FIMA); improved crosswalks between the NOAA strategic
planning structures and OAR's current program structure; and
better strategic plan linkages in the next budget
development process for the FY 2001 budget.

Particularly useful in this audit was the inclusion of the
U.S. Army Research Laboratory's experience in strategic
planning.

Thank you for your efforts in this audit.

cc:
OAR - David Evans
OFA/BF - Barry Meyer

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