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RELEASE**

***NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION***

***Light Aircraft Fleet Should Be Privatized***

*Final Audit Report No. STD-9952-8-0001 / August 1998*

*Office of Audits, Science and Technology Audits Division*



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## **EXECUTIVE SUMMARY**

NOAA established the Aircraft Operations Center (AOC) in 1983 to supply mission-ready aircraft and personnel for its five program offices. AOC, a component of the Office of NOAA Corps Operations, is NOAA's major flight operations group, with responsibility for gathering atmospheric, oceanographic, and other data for such programs as hurricane and major storm research, nautical and aeronautical charting, climate and global change, and snow and aerial surveys. It operates a fleet of 14 aircraft, composed of two heavy aircraft, a mid-size jet, eight light fixed-wing aircraft, and three helicopters. Ten of the aircraft operate primarily from MacDill Air Force Base near Tampa, Florida; the other four are based at separate locations outside Florida.

The heavy aircraft, averaging over 20 years old, are used for meteorologic and oceanographic research; the light fixed-wing aircraft, averaging over 15 years old, for the coastal mapping, airport obstruction charting, aerial survey, and flight edit programs; and the helicopters, averaging 17 years old, for the hydrographic survey program. The mid-size jet, a Gulfstream G-IV SP, was recently acquired and future missions include hurricane reconnaissance, weather research, global climate studies, air chemistry, satellite validation, and remote sensor development.

AOC's aircraft are a small component of a large federal fleet of civilian aircraft, which has been the subject of recent studies. In December 1996, the President's Council on Integrity and Efficiency (PCIE) reviewed the management of the federal civilian aircraft fleet and found that it cost the government in excess of \$1 billion annually to operate its aircraft programs. However, information developed by the PCIE documented that the agencies' operating costs are sometimes understated. Several agencies omitted reporting costs of certain aspects of their operations, and some did not report on the operating costs for several of their aircraft. Because many of these costs are commingled with general agency program costs, it was not possible to establish the extent of the understatement, although the PCIE stated that it is certainly in the multimillion dollar range. Additional studies of operational efficiencies were commissioned by the General Services Administration (GSA), which coordinates federal agency aircraft management and cost reporting. These studies reported opportunities to reduce costs by \$92 million annually if most agencies consolidated their operations and entered into sharing arrangements.

The purpose of our audit was to determine whether outsourcing is a more cost-effective alternative to in-house operation in meeting NOAA's aircraft requirements. Excluded from our comparisons were NOAA's (1) two Lockheed WP-3D Orions, (2) Gulfstream G-IV SP jet, and (3) Hughes 369/500D helicopter. The Orions possess unique capabilities not comparable at this

time with aircraft available in the private sector or from other government agencies while the other two were not in service during fiscal year 1996.

### **NOAA Should Privatize Its Light Aircraft Services Support**

Our audit found that the full in-house cost to operate NOAA's fleet of eight light aircraft and two Bell helicopters averaged 42 percent more than the cost to operate similar aircraft available in the private sector. As a result, in-house inefficiencies during fiscal year 1996 cost NOAA and interagency programs an additional \$1.9 million, or 1,840 flight hours, than if they had used the private sector. Implementation of our recommendations will put up to \$11.8 million of government funds to better use. About \$3.8 million results from outsourcing over a two-year period, while up to \$8 million will be generated from cash receipts to the U.S. Treasury if NOAA's eight light aircraft, two Bell helicopters, and its inactive Hughes 369/500D helicopter are sold (see page 4).

To restructure NOAA's aircraft services, ensuring more cost-effective aircraft services support, we recommend that the Under Secretary for Oceans and Atmosphere:

- ! Retain the two Lockheed WP-3D Orions and the Gulfstream G-IV SP jet.
- ! Discontinue operating the eight fixed-wing light aircraft and the three helicopters (including the inactive Hughes 369/500D helicopter) and release them, in accordance with OMB Circular A-126, along with related spare parts.
- ! Establish written NOAA policy that program offices are to rely on the private sector, when economically advantageous, to provide all aircraft services support.
- ! Transfer AOC base funding for aircraft support to NOAA's line organizations, and implement procedures to ensure that line organizations procure aircraft support from the most cost-effective private-sector sources.
- ! Pending release of aircraft and transfer of funding, report the full cost of each aircraft in accordance with federal accounting guidelines (see page 13).

### **NOAA Should Discontinue Using Its Light Aircraft For Interagency Reimbursable Projects**

As part of our review of the full in-house cost to the government to operate the NOAA-owned aircraft, we also found that AOC is not recovering the full cost of work that it performs under reimbursable agreements with outside government agencies. As a result, in fiscal year 1996, NOAA appropriations funded well over half the total cost of most sampled interagency reimbursable agreements, resulting in a cost underrecovery of \$573,064 and the diverting of essential resources away from its core mission (see page 15).

We recommend that the Under Secretary for Oceans and Atmosphere:

- ! Discontinue all interagency reimbursable work related to NOAA-owned fixed-wing light aircraft and helicopters.

Pending the discontinuance of interagency reimbursable work,

- ! Complete current interagency reimbursable agreements in accordance with NOAA's stated policy of full cost recovery.
- ! Revise the AOC's billing practices to be consistent with, and achieve, full cost recovery on all reimbursable agreements with outside sponsors.
- ! As appropriate, immediately amend any current interagency reimbursable agreements not based on full cost recovery.
- ! Seek reimbursement, beginning with fiscal year 1996 and where permitted by agreement, of the unrecovered full cost balances on all current reimbursable projects (see page 22).

### **NOAA Response**

In responding to our draft report, NOAA disagrees with most of the conclusions and recommendations because it believes that the report contained incomplete data, excluded costs that should have been included, and did not take into account the benefits derived by NOAA and its partners for federal cooperative projects. Specifically, NOAA states that it does not agree with our conclusion that its group of 10 light aircraft are significantly more costly to operate

when their true or full costs are compared with the private sector. NOAA asserts that our calculations of full in-house costs included double counted or other inappropriate overhead, and our estimates of contractor hourly rates excluded costs for daily use or standby time and modification and demodification of the aircraft. Also, NOAA states that our full in-house cost for one of its two Twin Otter aircraft was higher than normal because of a reduction in flight hours attributable to damage while undergoing maintenance. Regarding NOAA's need to recover full costs on interagency reimbursable agreements, NOAA asserts that although its policy provides for recovery of full costs, both direct and indirect in some situations, it also allows for waiving certain costs when the reimbursable project is beneficial to NOAA. Waiving certain charges to partnering agencies provides an effective approach for meeting some of NOAA's data collection needs.

### **OIG Comments**

We thoroughly assessed NOAA's comments and concerns, and reviewed the additional information that NOAA provided. After careful review, we reaffirm our conclusion that NOAA's group of 10 light aircraft are significantly more costly to operate when their true or full costs are compared with the private sector. Regarding overhead, we obtained evidence that indicates that some overhead was double counted, supporting a net decrease to the amount included in the draft report. We therefore adjusted our calculation of full in-house cost to account for the double counting. Regarding daily use or standby time, NOAA has not provided evidence which demonstrates that such charges are routinely included in the provisions of current NOAA contracts for aircraft support. We believe that including such costs in contractor rates is inappropriate and have identified specific comparable examples of NOAA projects where contractors do not charge for daily use or standby time. Regarding modification and demodification costs, we excluded such costs from the in-house overhead pool and, therefore, believe that including them in the contractor rates would invalidate the comparisons. Concerning the Twin Otter that was damaged during maintenance, we acknowledge that our comparison should compensate for the reduction in flight hours, and have adjusted our calculation of the in-house hourly rate to equal that of NOAA's other Twin Otter.

The cost ineffectiveness of NOAA's 10 light aircraft is substantiated by NOAA's own calculations of the full costs that it provided in its written response (see Appendix E, page 17). Even after excluding double counting of overhead and correcting the cost of NOAA's Twin Otter to account for downtime, NOAA's own calculations of full costs are, on average, 33 percent more than our estimates of contractor hourly rates (see Appendix D, page 40).

We also reaffirm our conclusion that AOC does not recover the full cost of reimbursable agreements with outside agencies. The focus of NOAA's response is that cost underrecovery is attributable to the waiving of costs on interagency reimbursable projects that are beneficial to NOAA. However, the primary reason why AOC does not recover the full cost of interagency reimbursable agreements is because it underbills these agencies for costs associated with the light aircraft, not because it waives certain charges. In fact, the total waived costs on the four sampled reimbursable projects included in our review account, on average, for only 6 percent of full in-house costs. More importantly, we are concerned that internal control weaknesses in determining billing rates and in ensuring the completeness of billing statements submitted to reimbursable customers contribute to the cost underrecovery.

We agree that the shared use of resources to acquire data can be beneficial to both NOAA and the sharing agency. Accordingly, we reduced full in-house costs for the allowable waived NOAA support costs on the four sampled interagency projects. However, even after our adjustments for allowable waived costs, AOC only recovered 41 percent of the full in-house cost to operate the NOAA light aircraft in fiscal year 1996.

NOAA's response to the findings and our related comments are highlighted in the body of the report. Appendix D contains a detailed summary of NOAA's response and related OIG comments, and NOAA's complete reply is included as Appendix E.



## **INTRODUCTION**

NOAA established the Aircraft Operations Center (AOC) in 1983 to supply mission-ready aircraft and personnel for its five program offices. AOC, a component of the Office of NOAA Corps Operations (ONCO), is NOAA's major flight operations group, with responsibility for gathering atmospheric, oceanographic, and other data for such programs as hurricane and major storm research, nautical and aeronautical charting, climate and global change, and snow and aerial surveys. It also provides aircraft support services, on a reimbursable basis, to other federal agencies.

AOC is located at MacDill Air Force Base, near Tampa, Florida, and operates a fleet of 14 aircraft – two heavy aircraft, a mid-size jet, eight light fixed-wing aircraft, and three helicopters – which are deployed on worldwide operations, and based at four major U.S. locations.<sup>1</sup> The heavy aircraft, averaging over 20 years old, are used for meteorologic and oceanographic research; the light fixed-wing aircraft, averaging over 15 years old, for the coastal mapping, airport obstruction charting, aerial survey, and flight edit programs; and the helicopters, averaging 17 years old, for the hydrographic survey program. The mid-size jet, a Gulfstream G-IV SP, was recently acquired and future missions include hurricane reconnaissance, weather research, global climate studies, air chemistry, satellite validation, and remote sensor development. AOC is staffed by approximately 80 people who work in its six operating units. They are responsible for operating the aircraft and facilities, managing the personnel and budget, chartering additional aircraft, and performing various other activities in support of NOAA aircraft programs. During fiscal year 1996, AOC's base budget was \$9.2 million, augmented by reimbursable agreements totaling \$1.75 million for aircraft work conducted for both NOAA and other federal agencies. AOC's base budget increased to \$10 million in fiscal year 1997, supplemented by reimbursable agreements totaling \$2.3 million. Seventy-three percent of the increase in reimbursable funding was attributable to the services of the Gulfstream G-IV SP jet on the Fronts and Atlantic Storm Tracks Experiment.

AOC's aircraft are a small component of a large federal fleet of civilian aircraft, which has been the subject of recent studies. In December 1996, the President's Council on Integrity and Efficiency (PCIE) reviewed the management of the federal civilian aircraft fleet and found that it

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<sup>1</sup> See Appendix A for more information about individual NOAA aircraft. For purposes of discussion, when we refer in this report to NOAA's group of "light aircraft," we include its eight light fixed-wing aircraft and three helicopters.

cost the government in excess of \$1 billion annually to operate its aircraft programs.<sup>2</sup> However, information developed by PCIE documented that the agencies' operating costs are sometimes understated. Several agencies omitted reporting costs of certain aspects of their operations, and some did not report on the operating costs for several of their aircraft. Because many of these costs are commingled with general agency program costs, it was not possible to establish the extent of the understatement, although PCIE stated that it is certainly in the multimillion dollar range. Additional studies of operational efficiencies were commissioned by the General Services Administration (GSA), which coordinates federal agency aircraft management and cost reporting. These studies reported opportunities to reduce costs by \$92 million annually if most agencies consolidated their operations and entered into sharing arrangements.

It is important that federal programs operate as effectively and efficiently as possible. The Congress has concluded that waste and inefficiency in federal programs undermine the confidence of the American people in the government and reduce the federal government's ability to address adequately vital public needs.<sup>3</sup> In addition, the Administration's National Performance Review notes that Americans want to "get their money's worth" and have a government that is more businesslike and better managed. To achieve these ends, the government must regularly reevaluate its operations, considering a wide range of options, including consolidation, restructuring, and contracting out.

### **Purpose and Scope of Audit**

The purpose of our audit was to determine whether outsourcing is a more cost-effective alternative to in-house operation in meeting NOAA's aircraft requirements. Specifically, our audit objectives were to determine for fiscal year 1996 the (1) full in-house cost to the government to operate each of the NOAA-owned aircraft; (2) private contractor/other government agency cost to operate the same or comparable aircraft; and (3) cost effectiveness of the NOAA-owned aircraft.

We limited the scope of our cost comparisons to NOAA's eight light fixed-wing aircraft and its two Bell 212 helicopters that were in operation in fiscal year 1996. Excluded from our comparisons were NOAA's (1) Gulfstream G-IV SP jet, (2) Hughes 369/500D helicopter, and (3) two Lockheed WP-3D Orions. The first two were not in service during fiscal year 1996, and

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<sup>2</sup> *President's Council on Integrity and Efficiency Combined Report on the Federal Civilian Agencies' Aircraft Management Programs*, Report No. A43006/O/W/F97011, December 16, 1996.

<sup>3</sup> Public Law 103-62, August 3, 1993, Government Performance and Results Act of 1993 (GPRA).

the Orions possess unique capabilities not comparable at this time with aircraft available in the private sector or from other government agencies. We reviewed relevant Office of Management and Budget (OMB) guidelines and AOC cost reports submitted to GSA; examined cost data, reimbursable billing statements, and NOAA's task plans; analyzed documents provided by an aviation industry cost evaluator; and interviewed officials and staff from ONCO, AOC, the private sector, and other federal agencies, including GSA and the Departments of the Interior and Agriculture. We also reviewed information provided by NOAA's budget and finance offices.

The audit was conducted at NOAA's headquarters in Silver Spring, Maryland, and at AOC's offices on MacDill Air Force Base. The field work for this audit began in December 1996, was generally completed in November 1997, and covered NOAA-owned aircraft costs for fiscal year 1996.

Our audit included tests to determine AOC's compliance with applicable laws and regulations and a review of relevant internal controls. Applicable laws and regulations included the Government Performance and Results Act of 1993, OMB Circulars A-76, *Performance of Commercial Activities*, and A-126, *Improving the Management and Use of Government Aircraft*, as well as various federal, departmental, and NOAA regulations that call for full recovery of costs, both direct and indirect, incurred in providing services for others. We also assessed relevant internal controls, including AOC's procedures for developing the full in-house cost of its aircraft and for billing interagency sponsors for reimbursable work. The results of our compliance and internal control reviews are discussed in the body of the report.

During our audit, we relied upon computer-generated data from NOAA's Financial Information Management System (FIMA). An independent certified public accounting firm assessed internal controls over NOAA's FIMA as part of its audit of the agency's fiscal year 1996 financial statements and reported material weaknesses in automated data processing control and security that NOAA will correct when its new integrated financial management system is fully implemented.<sup>4</sup> However, nothing came to our attention during our review of the FIMA data to indicate that it was not sufficiently relevant and reliable for our specific audit objectives.

The audit 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 of Commerce Organization Order 10-13, dated May 22, 1980, as amended.

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<sup>4</sup> *Audit of NOAA's FY 1996 Financial Statements*, FSC-8841-7-0001, February 1997.

## FINDINGS AND RECOMMENDATIONS

### I. NOAA SHOULD PRIVATIZE ITS LIGHT AIRCRAFT SERVICES SUPPORT

For fiscal year 1996, the full in-house costs to operate NOAA's fleet of 10 light aircraft averaged 42 percent more than the costs of operating similar aircraft available in the private sector. As a result of these in-house inefficiencies, NOAA could have saved \$1.9 million in operating costs or flown an additional 1,840 program hours if it had used the private sector. Although there are several factors that contribute to the higher AOC costs, the most significant one is NOAA's inability to achieve certain economies of scale that are normally associated with aircraft available in the private sector. As noted earlier, OMB Circular A-76 states that the government shall not carry on any activity to provide a commercial service if the service can be procured more economically from a commercial source.

#### A. NOAA Light Aircraft Are More Expensive to Use Than Those of Private Contractors

NOAA's fleet of 10 light aircraft were 42 percent more costly to operate during fiscal year 1996 than aircraft available in the private sector. To determine cost effectiveness, we first identified NOAA's in-house cost for each of its 12 active aircraft.<sup>5</sup> We did not include in our cost analysis NOAA's Gulfstream G-IV jet, which NOAA did not schedule for its first mission use until fiscal year 1997, and its Hughes 369/500D helicopter, which was in storage. Then we compared the in-house costs of its eight light fixed-wing aircraft and two Bell helicopters with the rates for similar aircraft available from private contractors. Although we included NOAA's two hurricane research aircraft in our calculation of in-house costs, we did not include them in our comparisons because they are unique and reportedly similar aircraft are not currently available in the private sector.

In our analysis of NOAA's in-house costs for its aircraft, our objective was to account for the *full* cost to operate the NOAA-owned aircraft. This included the costs from all appropriated and reimbursable funds used to operate, support, maintain, and administer aircraft operations for the two heavy aircraft, eight light aircraft, and two helicopters that were in operation during fiscal year 1996. Only by analyzing the costs of NOAA's AOC, its fleet of 12 active aircraft, ONCO, and the Commissioned Personnel Center (CPC) could we ensure that we were capturing all relevant expenses.

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<sup>5</sup> See Appendix A for more information about NOAA-owned and operated aircraft.

There is growing sentiment within the federal government that Congress and federal executives be provided with reliable and timely information on the *full* cost of operating federal programs. Then, informed decisions concerning resource allocation and authorizing and modifying programs can be made. In July 1995, the Federal Accounting Standards Advisory Board issued *Statement of Federal Financial Accounting Standards No. 4*. According to this statement, federal entities should report the full costs of resources used to produce their outputs. This includes direct and indirect costs that contribute to the output, regardless of funding sources. It also includes costs of supporting services provided by other responsibility segments or entities.

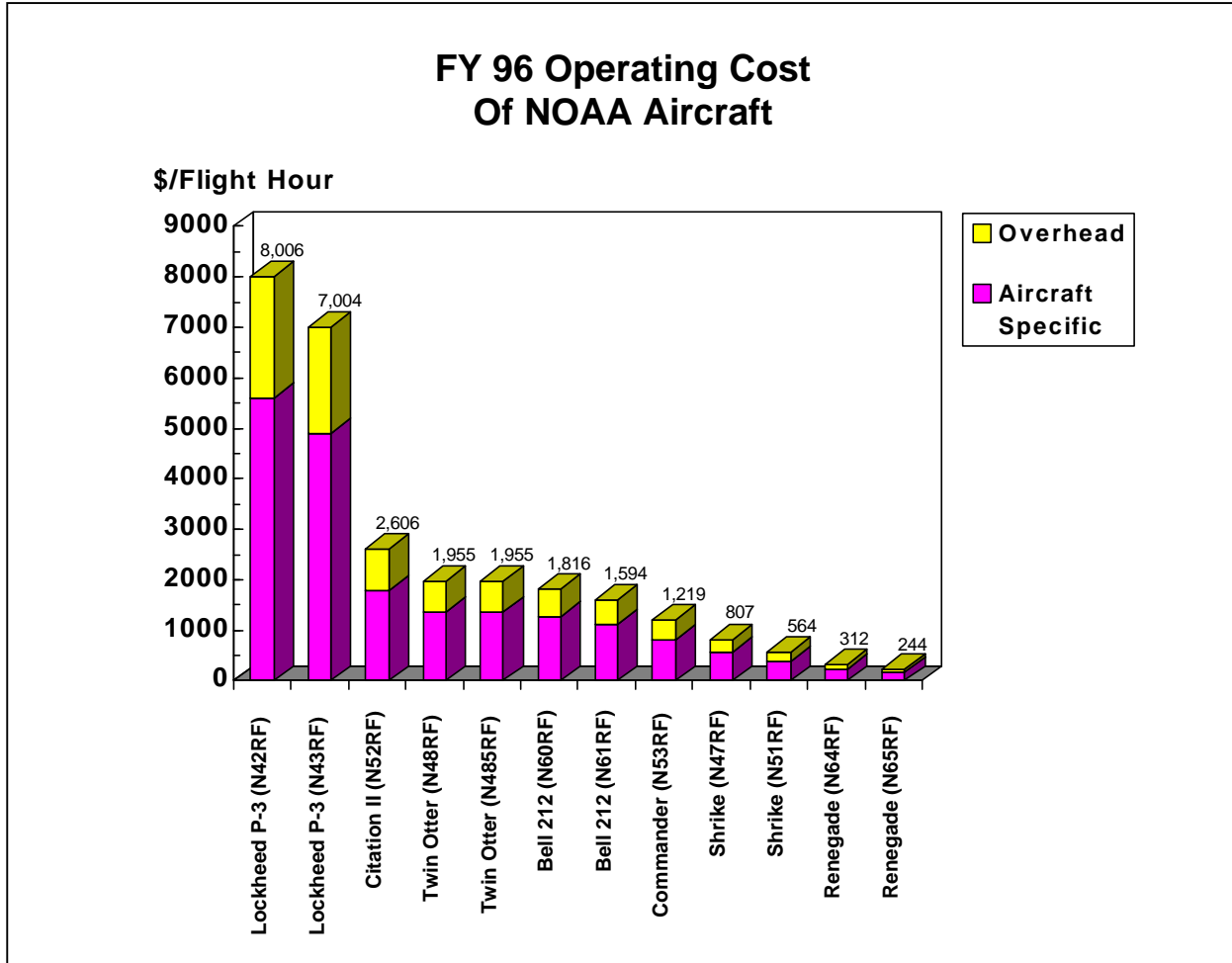
The methodology we used in our analysis of full in-house costs (full costs) per aircraft consisted of first identifying aircraft-specific (direct) costs, and then overhead (indirect) costs. Aircraft-specific costs include fuel and lubrication, crew, maintenance, insurance, and depreciation. For our cost analysis, we included the aircraft-specific costs that NOAA reported to GSA for fiscal year 1996 through GSA's Federal Aviation Management Information System (FAMIS). Overhead costs, according to GSA's *Government Aircraft Cost Accounting Guide (Guide)*<sup>6</sup>, include operations overhead and administrative overhead. We did not rely on the overhead costs that NOAA reported to GSA through FAMIS; instead, we computed overhead separately (see Appendix B).

Our analysis of the overhead costs that AOC reported to GSA indicated a basic AOC misunderstanding of GSA definitions of overhead, resulting in overhead misclassifications and omissions. For example, in computing operations overhead, AOC included the salaries of fabrication shop personnel. However, the fabrication shop serves AOC aircraft, so we believe the fabrication shop salaries are direct costs for these aircraft, not operations overhead. We also noted that in computing administrative overhead AOC did not account for costs associated with the support provided by ONCO and CPC. The definition of administrative overhead in GSA's *Guide* indicates that the ONCO and CPC support costs were legitimate and should have been included.

AOC's reported aircraft-specific costs and our recalculation of overhead costs provided a more realistic cost to operate each of the 12 active NOAA aircraft for fiscal year 1996. The following graph depicts the cost per aircraft, broken down into aircraft-specific and overhead costs.

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<sup>6</sup> Version No. 4, January 15, 1995, developed by The Interagency Committee for Aviation Policy for GSA (see Appendix B for GSA's definitions of operations and administrative overhead).



Next, we divided the full cost for each aircraft by the actual hours flown, as reported to GSA, during fiscal year 1996. This provided NOAA's full cost per hour to fly each of the 12 aircraft during the fiscal year. We then compared NOAA's full cost per flight hour for each of its eight light aircraft and two Bell helicopters with rates charged by private-sector companies using similar aircraft. Commercial rates were obtained directly from the private-sector companies or through the Department of the Interior's Office of Aircraft Services (OAS). OAS enters into aircraft service contracts with private-sector companies for bureaus within the Interior and other

federal agencies. For each platform we obtained several commercial rates, if available, and calculated an average rate for comparison.

On average, NOAA's eight light fixed-wing aircraft and two Bell helicopters were 42 percent more expensive to operate when compared with commercial hourly rates.<sup>7</sup> Full cost hourly rates significantly exceeded commercial rates for the eight light fixed-wing aircraft. The full cost rates calculated for the two Bell helicopters, used exclusively for interagency reimbursable work, were price competitive with the private sector.<sup>8</sup> However, the focus must not be on the cost-effectiveness rates of the individual light aircraft but on their average rate as a *group* because in the group *full* costs – direct and indirect – are taken into account. Also, OMB Circular A-76 states that the general policy of the government is to rely on commercial sources to supply the products and services the government needs. Table 1 (see page 8) shows the results of our comparisons of the full cost NOAA and private contractor hourly rates for the group of 10 light aircraft.

We also found that private-sector companies are capable and available to support NOAA missions. For example, the National Marine Fisheries Service (NMFS) in La Jolla, California, uses a private sector contractor to provide aircraft services in support of marine mammal surveys. When we compared AOC's cost per hour to that for the private sector contractor, we found that it was more cost-effective for NOAA to use the contractor.

To perform marine mammal surveys, AOC uses both of its Twin Otter aircraft (N48RF and N485RF) at a cost per hour of \$1,955. In contrast, survey work contracted out by the NMFS in La Jolla cost \$351 per hour.<sup>9</sup> This comparison clearly demonstrates NOAA's inefficiencies in providing aircraft services. As another example, NOAA requires aerial photogrammetry to complete flight edit, coastal mapping, and airport obstruction work. The private sector provides expertise in this area. Specifically, the Management Association for Private Photogrammetric

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<sup>7</sup> We also compared our calculated full costs for NOAA's light aircraft with the aircraft industry standard. The results of our comparisons, included in Appendix C, showed that the full cost to operate NOAA's fixed-wing light aircraft averaged 44 percent more than the industry's standard cost.

<sup>8</sup> See Appendix C, which explains that differences in depreciation methodology between the commercial sector and the federal government play a significant role in making the Bell helicopters appear to be cost competitive with the private sector.

<sup>9</sup> Includes a NOAA contract administration charge of 8 percent of the contractor's hourly rate. See footnote a, Table 1.

**Table 1**  
**NOAA's Light Aircraft and Helicopters:**  
**Comparison of OIG-Calculated Full Hourly Cost**  
**With Private Contractor Hourly Rates**

Aircraft	Hourly Cost			Percent Full Cost Over (Under) Contractor Cost
	OIG-Calculated Full Cost	Contractor <sup>a</sup>	Full Cost Over (Under) Contractor Cost	
N53RF/Gulf Turbo Commander 690A	\$1,219	\$ 688	\$ 531	77.26%
N64RF/Lake Renegade	312	205 <sup>b</sup>	107	51.91
N65RF/Lake Renegade	244	205 <sup>b</sup>	39	19.11
N61RF/Bell 212 Helicopter	1,594	1,836	(242)	(13.17)
N60RF/Bell 212 Helicopter	1,816	1,836	(20)	(1.08)
N47RF/Aero Commander Shrike	807	366	441	120.35
N51RF/Aero Commander Shrike	564	366	198	53.92
N52RF/Cessna Citation II	2,606	1,436	1,170	81.44
N485RF/de Havilland Twin Otter	1,955	1,142	813	71.20
N48RF/de Havilland Twin Otter	1,955 <sup>c</sup>	1,142	813	71.20.
<b>Light Aircraft Average Percentage<sup>d</sup></b>				<b>41.74%</b>

<sup>a</sup>Includes an administrative charge of 8 percent of the contractor's hourly rate for NOAA contractor oversight. The administrative charge is the same rate charged by OAS and the same rate used by AOC in its 1995 draft in-house aircraft cost study.

<sup>b</sup>The commercial rate for the two Lake Renegades was available from only one contractor. Private sector owner-operators told us that contractor rates are difficult to obtain because the Lakes have limited practical use and are mainly a recreational platform. Also, AOC's 1995 in-house cost study included a commercial rate of \$173/hour.

<sup>c</sup>Actual OIG-calculated full-cost is \$3,591/hr. Because this aircraft experienced significant downtime attributable to damage while undergoing maintenance, OIG-calculated full-cost rate adjusted to equal that of N485RF.

<sup>d</sup>Calculation based on the total of the "Full Cost Over (Under) Contractor Cost" column, \$3,850, divided by the total of the "Contractor Hourly Cost" column, \$9,222.



Surveyors compiled a capability study<sup>10</sup> of over 105 firms across the country that have the talent and qualifications to provide aerial photogrammetry. In fact, one of the firms from the study is currently under contract performing coastal mapping aerial photography. Furthermore, this same contractor has experience in flight edit and airport obstruction work.

B. Economies of Scale Is the Primary Factor Leading to the Higher NOAA Cost

Although several factors are responsible for the higher cost to operate the NOAA aircraft as compared with the private sector, the most significant is NOAA's inability to achieve certain economies of scale in its in-house aircraft operations. NOAA's operating costs include significantly large support costs incurred by ONCO and CPC, as well as by AOC. Private contractors of light aircraft generally do not incur such significantly large overhead costs and, in combination with their marketing efforts to increase the number of billable hours, are able to lower their hourly charge for aircraft services.

The lower relative activity levels of the NOAA light aircraft are evident from the AOC-prepared "FY 1996 Aircraft Flight Hour Analysis." This analysis breaks down AOC's total number of actual flight hours by aircraft and provides the number of hours approved by the NOAA Aircraft Allocation Council (NAAC). NAAC is the authority within NOAA for policy matters regarding the allocation of operational NOAA and private-sector company aircraft time to support NOAA's programs and missions, and it establishes relative priorities for the use of NOAA and private-sector aircraft resources. NAAC voting members include NOAA's Deputy Under Secretary for Oceans and Atmosphere, five Assistant Administrators, and directors of the offices of Global Programs, Coastal Ocean Programs, and ONCO. Of the 4,223 flight hours that NAAC approved, NOAA's light aircraft flew only 3,257, or 23 percent below the approved rate. Also, the AOC analysis shows that two aircraft, the Lake Renegades, flew about one-half of their total yearly hours for training, or non-billable, purposes. In addition, the Hughes 369/500D helicopter flew no hours during fiscal year 1996<sup>11</sup>. During our visit to AOC in December 1996, we observed that this aircraft was in storage. AOC officials explained that there was insufficient customer demand for its services to keep it maintained and ready for use. Because there is no apparent need for the Hughes 369/500D helicopter, we believe that it should be released, along with related spare parts, in accordance with OMB Circular A-126.

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<sup>10</sup> *Member Firm Capability Study*, Management Association for Private Photogrammetric Surveyors, 1995.

<sup>11</sup> Also, the AOC-prepared "Flight Hour History" indicates that the Hughes 369/500D helicopter flew only 6.4 hours during fiscal year 1995.

Other factors contribute to the higher AOC cost per flight hour for its light aircraft. One of these factors was acknowledged by NOAA in its "FY 1993 Interim Report" prepared for the Department by the NOAA Aircraft Modernization Task Force. The report states that as the NOAA aircraft age, operational costs rise substantially. According to an AOC-prepared document, the average age of NOAA's fixed-wing light aircraft and helicopters is over 15 years, and two of these aircraft are at least 21 years old. In our opinion, as NOAA's fleet becomes older, the aircraft will require even more time for maintenance, the amount of "downtime" will increase, and operational time will decrease. Another factor that contributes to the higher AOC cost per flight hour for its light aircraft, in our opinion, is the lack of adequate incentive to control costs because of the availability within the government of funds to cover rising costs, such as from reprogramming. Higher training costs associated with NOAA Corps' policy of periodic rotation of pilots to other positions within NOAA programs and the need to retrain replacement officers may also contribute to NOAA's higher hourly rates.

In addition, NOAA managers may not be fully aware of the higher cost to operate their aircraft because they have not conducted an approved cost comparison for fiscal year 1996 to justify retention of in-house aviation services. ONCO officials informed us that an OMB Circular A-76 cost comparison has never been completed for any of the NOAA aircraft although AOC did complete in-house cost studies in 1993 and 1995. However, these cost studies were not submitted to GSA or OMB. In accordance with OMB Circular A-126, *Improving the Management and Use of Government Aircraft*, dated May 22, 1992, agencies shall review periodically the continuing need for all of their aircraft and the cost effectiveness of their aircraft operations in accordance with the requirements of OMB Circular A-76. The circular also requires that agencies report any excess aircraft and release all aircraft that are not fully justified by these reviews. A copy of each agency review is supposed to be submitted to GSA when completed and to OMB with the agency's next budget submission.

C. Federal Policy Prohibits Uneconomical Government Activity

OMB Circular A-76 establishes federal policy regarding the performance of commercial activities. It states that the federal government should not compete with its citizens and should rely on commercially available sources to provide commercial services. It concludes by asserting that the government should not start or carry on any activity to provide a commercial service if the service can be procured more economically from a commercial source.

Attachment A to the circular includes examples of the kinds of government activities that are available from the commercial sector. Among these are maintenance, overhaul, repair, and testing of aircraft and aircraft components; scientific data studies; and mapping, charting and geological surveys. With the exception of NOAA's two hurricane research aircraft and its

recently acquired jet, which offer unique services not currently available commercially, we believe that this federal policy applies to NOAA's aircraft.

D. Operation of NOAA's Light Aircraft Costs Government Valuable Program Funding and Flight Hours

During fiscal year 1996, the various NOAA and interagency programs that AOC services could have saved \$1.9 million, or flown an additional 1,840 hours, if they had used similar private-sector services. Annual cost savings are based on our full cost calculations of \$4.6 million in fiscal year 1996 to operate 10 light aircraft, less the \$2.7 million cost if government programs had procured these services from commercial sources. The additional 1,840 flight hours available through the private sector is an increase of 54 percent from the total of 3,421 in-house hours flown.

With increasingly limited budgets, government programs are being forced to do more with less. Lost program funding and flight hours are conditions that government managers can no longer tolerate. This reality is especially important for those NOAA program offices that need light aircraft and helicopters to meet their requirements.

E. Conclusion

Program offices should rely on the private sector to provide required light aircraft services. This is because NOAA's group of 10 light aircraft is significantly more costly to operate when the true or full costs are compared with the private sector. As a result, AOC inefficiencies have unnecessarily increased the cost of government programs or cost them valuable flight hours that might otherwise have been available for mission-related research. Providing base funding to AOC to meet the NOAA program offices' aircraft requirements is not in the best interests of the program offices or the government.

NOAA must restructure its aircraft services support to be more cost-effective and better service the interests of the program offices. This should consist of retaining its two heavy aircraft and one mid-size jet; discontinuing the operation of, and releasing, its light fixed-wing aircraft and helicopters; establishing written NOAA policy that program offices are to rely on the private sector, when economically advantageous, to provide all aircraft services support; and transferring base funding for all NOAA aircraft operation to the program offices to procure support services from the most cost-effective private-sector source. Pending transfer of funding and release of aircraft, NOAA should report the full cost of each aircraft in accordance with federal accounting guidelines.

This restructuring will result in the reassignment of appropriate NOAA personnel and increased aircraft services responsibilities for program managers and contracting officers. However, the restructuring will provide important benefits to NOAA including, among others,

- ! greater control by program managers of flight hour funding,
- ! increased cost-effectiveness through outsourcing or additional flight hours available for research,
- ! transfer of full-time-equivalent positions to high priority positions in the Department,
- ! streamlined lease requirements for aircraft facilities<sup>12</sup>, and
- ! opportunities for greater choices of research platforms and strategies.

#### F. NOAA Response

NOAA does not agree with our conclusion that its group of 10 light aircraft are significantly more costly to operate when their true or full costs are compared with the private sector. NOAA believes that data in the draft report were incomplete. There are three areas of cost in our calculations, it believes, which appear incorrect. These are the costs associated with overhead, daily use or standby time, and modification and demodification of the aircraft necessary to meet NOAA's project requirements. NOAA asserts that our calculation of full in-house costs included double counted or other inappropriate overhead and our estimates of contractor hourly rates excluded costs for daily use or standby time and modification and demodification of the aircraft. Also, NOAA stated that our full in-house cost for one of its two Twin Otter aircraft was higher than normal because of a reduction in flight hours attributable to damage while undergoing maintenance.

In response to the draft report, NOAA developed for each of the light aircraft its own comparison of full in-house costs with contractor rates. After excluding double counting of NOAA overhead costs, including daily use or standby time and aircraft modification costs for contractors, and

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<sup>12</sup> Although the Air Force currently provides AOC with rent-free use of its hangar at MacDill Air Force Base, as the facilities needs of the Air Force change, so can the status of rent-free use of the hangar. See Appendix B, "Methodology for Assigning the Costs," Part A4a(2).

correcting the cost of NOAA's Twin Otter to account for downtime during maintenance on the aircraft, NOAA concludes that its aircraft operations cost 32 percent less than contractors.

G. OIG Comments

We reaffirm our conclusion that NOAA's group of 10 light aircraft are significantly more costly to operate when their true or full costs are compared with the private sector. Regarding overhead, we obtained evidence that indicates that some overhead was double counted, supporting a net decrease to the amount included in the draft report. We have therefore adjusted our calculation of full in-house cost to properly account for these matters. Regarding daily use or standby time, NOAA has not provided evidence which demonstrates that such charges are routinely included in the provisions of current NOAA contracts for aircraft support. We believe that including such costs in contractor rates is inappropriate and have identified specific examples of NOAA projects where contractors do not charge for daily use or standby time. Regarding modification and demodification costs, we excluded such costs from the in-house overhead pool and, therefore, believe that including them in the contractor rates would invalidate the comparisons. Also, as discussed in this report, we found that private-sector companies have the capability to support NOAA missions. These companies are in the business of providing the types of light aircraft support services which NOAA and other customers require and, by necessity, have aircraft fully equipped to meet specific requirements. Concerning the Twin Otter that was damaged during maintenance, we acknowledge that our comparison should compensate for the reduction in flight hours, and have adjusted our calculation of the in-house hourly rate to equal that of NOAA's other Twin Otter.

But probably of equal, if not greater, note is the fact that the cost ineffectiveness of NOAA's group of 10 light aircraft is substantiated by NOAA's own calculations of the full costs that it provided in its written response (see Appendix E, page 17). Even after excluding double counting of overhead and correcting the cost of NOAA's Twin Otter to account for downtime, NOAA's full costs are, on average, 33 percent more than our estimates of contractor hourly rates (see Appendix D, page 40).

H. Recommendations

We recommend that the Under Secretary for Oceans and Atmosphere:

1. Retain the two Lockheed WP-3D Orions and the Gulfstream G-IV SP jet.

2. Discontinue operating the eight fixed-wing light aircraft and the three helicopters (including the inactive Hughes 369/500D helicopter) and release them, in accordance with OMB Circular A-126, along with related spare parts.
3. Fully comply with established written NOAA policy that program offices are to rely on the private sector, when economically advantageous, to provide aircraft services support.
4. Transfer AOC base funding for aircraft support to NOAA's line organizations, and implement procedures to ensure that line organizations procure aircraft support from the most cost-effective private-sector sources.
5. Pending release of aircraft and transfer of funding, report the full cost of each aircraft in accordance with federal accounting guidelines.

I. Funds to Be Put to Better Use

As a result of implementing our recommendations, NOAA will be able to put up to \$11.8 million of government funds to better use. About \$3.8 million<sup>13</sup> results from outsourcing over a two-year period, while up to \$8 million<sup>14</sup> will be generated from cash receipts to the U.S. Treasury if NOAA's 11 light aircraft are sold. These amounts could increase or decrease during implementation of the recommendations depending on the cost-effectiveness of program offices in negotiating prices with contractors, the level of funding appropriated for aircraft services, the equipment in and condition of the aircraft, and whether NOAA's aircraft are transferred to other federal agencies or donated to state agencies or other non-profit organizations.

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<sup>13</sup> Annual cost difference of \$1.9 million is based on our calculated full cost of \$4.6 million in fiscal year 1996 to operate NOAA's 10 light aircraft, less \$2.7 million if program offices had procured these services from commercial sources. We limited our calculations to a two-year period, but the cost benefits to the government continue indefinitely.

<sup>14</sup> Cash receipts to the U.S. Treasury of up to \$8 million for the 11 NOAA-owned light aircraft are based on the average retail selling prices included in the *Aircraft Bluebook Price Digest*, Fall 1997, Vol. 97-3, Intertec Publishing Corporation, Overland Park, Kansas.

## II. NOAA SHOULD DISCONTINUE USING ITS LIGHT AIRCRAFT FOR INTERAGENCY REIMBURSABLE PROJECTS

As part of our review of the full cost to operate the NOAA-owned aircraft, we found that AOC is not recovering the full cost for work it performs under reimbursable agreements with outside government agencies. Federal, departmental, and NOAA policy call for full cost recovery – both direct and indirect – on all reimbursable projects. Internal control weaknesses in determining reimbursable billing rates have resulted in the underrecovery of costs. NOAA should discontinue its interagency reimbursable projects, not only because its light aircraft are more expensive to operate as compared with the private sector, but also because less-than-full-cost recovery, in effect, subsidizes other agency programs with NOAA appropriations. In fiscal year 1996, NOAA appropriations funded well over half the total cost of most sampled aircraft interagency reimbursable agreements, resulting in a cost underrecovery of \$573,064 and the diverting of essential resources away from its core mission.

### A. Full Cost Exceeds Recovered Cost for NOAA-Owned Aircraft

The full cost<sup>15</sup> to operate the NOAA-owned aircraft assigned to reimbursable projects exceeded the cost that NOAA recovered from outside government agencies.<sup>16</sup> For fiscal year 1996, NOAA executed 13 reimbursable agreements for aircraft services – seven with outside agency sponsors and six with NOAA program offices – amounting to \$1.75 million. We selected four agreements, funded at \$1.1 million, with outside agency sponsors for analysis. Of the three interagency agreements not reviewed, two did not have reimbursable hours charged in fiscal year 1996 and one involved NOAA's use of its P-3 aircraft, a platform we believe NOAA should continue to operate at this time.

For each of the agreements selected, we reviewed the reimbursable project task plan and AOC billing statements, which break down charges by individual aircraft. NOAA used multiple aircraft for three of four reimbursable projects. We compared the various reported aircraft hourly rates – billed, GSA reported, and as determined by our review (full cost).

Our analysis showed significant disparities between the three hourly rates. On average, NOAA's hourly rates billed to reimbursable sponsors were 44 percent of the hourly rates reported to GSA

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<sup>15</sup> Based on the OIG calculations, discussed beginning on page 4 of this report.

<sup>16</sup> With one exception, even the costs that NOAA reported to GSA for these same aircraft exceeded the cost that it recovered from these sponsors. See Table 2.

and 41 percent of the hourly rates based on full cost. Tables 2 and 3 summarize our comparisons of the hourly rates for operating costs.

<b>Table 2 Recovered Cost vs. GSA-Reported Cost Fiscal Year 1996 Interagency Reimbursable Agreements</b>				
<b>Agreement and Sponsor</b>	<b>Assigned Platform</b>	<b>Hourly Rate Billed</b>	<b>Hourly Rate Reported to GSA</b>	<b>Billed as a % of GSA-Reported</b>
Marine Mammal RP3A35/Navy	N48RF Twin Otter	\$ 467	\$ 2,624	18%
Marine Mammal RP3A35/Navy	N485RF Twin Otter	467	1,435	33
Hurricane Response RP3A36/Interior	N48RF Twin Otter	511	2,624	19
Airport Obstruction RK6C09/FAA	N52RF Cessna Citation	736	1,916	38
Airport Obstruction RK6C09/FAA	N53RF Turbo Commander	567	907	63
SHOALS RP3A25/Army Corps Engineers	N60RF Bell 212 Helicopter	1,284	1,338	96
SHOALS RP3A25/Army Corps Engineers	N61RF Bell 212 Helicopter	1,297	1,204	108
<b>Total Average*</b>				<b>44%</b>
*Calculation based on the total of the hourly rates billed, \$5,329, divided by the total of the hourly rates reported to GSA, \$12,048.				



**Table 3**  
**Recovered Cost vs. Full Cost**  
**Fiscal Year 1996 Interagency Reimbursable Agreements**

Agreement and Sponsor	Assigned Platform	Hourly Rate Billed	Hourly Rate Full Cost	Billed as a % of Full Cost
Marine Mammal RP3A35/Navy	N48RF Twin Otter	\$ 467	\$ 1,944 <sup>a</sup>	24%
Marine Mammal RP3A35/Navy	N485RF Twin Otter	467	1,944 <sup>a</sup>	24
Hurricane Response RP3A36/Interior	N48RF Twin Otter	511	1,955	26
Airport Obstruction RK6C09/FAA	N52RF Cessna Citation	736	2,606	28
Airport Obstruction RK6C09/FAA	N53RF Turbo Commander	567	1,219	47
SHOALS RP3A25/Army Corps Engineers	N60RF Bell 212 Helicopter	1,284	1,732 <sup>a</sup>	74
SHOALS RP3A25/Army Corps Engineers	N61RF Bell 212 Helicopter	1,297	1,541 <sup>a</sup>	84
<b>Total Average<sup>b</sup></b>				<b>41%</b>
<sup>a</sup> Net, after deducting allowable waived NOAA support costs per hour of \$11.10 on N48RF, \$11.35 on N485RF, \$83.90 on N60RF, and \$52.71 on N61RF. See page 21.				
<sup>b</sup> Calculation based on the total of the hourly rates billed, \$5,329, divided by the total of the full cost hourly rates, \$12,941.				

B. Government Policy Calls for Full Cost Recovery

The primary focus of federal, departmental, and NOAA policy is on the full recovery of costs, both direct and indirect, incurred in providing services for others. At the federal level, 31 U.S.C. 1535 identifies general policies regarding work performed for other agencies. One of these policies is that payment for interagency reimbursable work shall be "...on the basis of the actual cost of goods or services provided." Also, Department of Commerce–Special Studies and Work, Public Law 91-412, authorizes the Department of Commerce to make special studies, to provide services, and to engage in joint projects upon the payment of the actual cost of such special work. Lastly, one of the stated purposes of the Government Performance and Results Act of 1993 (GPRA) is to "...improve the confidence of the American people in the capability of the federal government, by systematically holding federal agencies accountable for achieving program results." If a federal agency does not recover the full cost of projects performed for interagency sponsors, but instead diverts its own appropriations from its core mission to finance the shortfalls, it jeopardizes the results of its own programs and violates the intent of GPRA.

Departmental policy also reflects the intent of GPRA. The *Department of Commerce Accounting Principles and Standards Handbook* [Chapter 18, Section 6.01] states that the Department's policy is to provide special services on a cost reimbursable basis to federal agencies and others only when undertaking the project will not result in the diversion of resources to the detriment of the basic programs of the operating unit. Less than full cost recovery on NOAA's interagency reimbursable projects diverts NOAA resources intended for its core mission, thereby placing at risk the NOAA programs.

NOAA policy also addresses cost recovery on reimbursable projects. The *NOAA Budget Handbook* [Chapter 2, Section 3.1.b.(4)] states that "It is NOAA policy to recover full costs, both direct and indirect, for performance of services for others."

C. Internal Control Weaknesses Contribute to Cost Underrecovery

Internal control weaknesses in determining reimbursable billing rates have contributed to cost underrecovery. AOC bills at the completion of each reimbursable project for the actual hours flown. Billing statements consist of several components – a flight rate; administrative overhead, pilot salaries, and depreciation, based on fixed daily rates; standard level user charge (SLUC), future retired pay of commissioned officers (FRPCO), and NOAA Corps support, based on labor cost; travel and per diem; and aircraft fuel use. We compared the various components of the billing statement to year-end cost documents and noted several discrepancies. In particular, year-end cost documents for AOC's two Twin Otters support a flight rate per hour of \$1,720 and \$457, respectively. However, the flight rate billed for both Twin Otters totaled only \$302. We

discussed how the flight rate was calculated with AOC personnel. We were informed that the rate was determined based on discussions with AOC operations personnel and did not match cost information provided to GSA through FAMIS nor was it supported by analysis.

AOC internal controls that ensure the completeness of billing statements submitted to reimbursable customers also have contributed to the cost underrecovery. AOC reported to GSA costs for operations overhead and insurance for all aircraft assigned to the four sampled reimbursable projects but omitted these costs on the billing statements. AOC's internal controls over its billing procedures should be consistent with, and achieve, full cost recovery on all reimbursable project agreements with other agency sponsors until NOAA disposes of its light aircraft.

In addition to internal control weaknesses, another reason costs are not fully recovered on reimbursable projects is because AOC waives certain expenses. NOAA regulations allow--but discourage--the waiving of costs associated with reimbursable work. Yet, AOC waived certain costs in the billing process, including FRPCO, aircraft depreciation, SLUC, and NOAA support costs on the Scanning Hydrographic Operational Airborne Lidar Survey (SHOALS) and marine mammal projects, and aircraft depreciation on the hurricane response project.

D. Cost Underrecovery on Reimbursable Projects Diverts NOAA Program Funding

In fiscal year 1996, NOAA appropriations funded well over half the total cost of three of the four interagency reimbursable agreements included in our sample, resulting in a cost underrecovery and the diversion of essential resources away from its core mission. Although the full cost, based on OIG calculations, of the four sampled projects was \$1,714,094<sup>17</sup>, AOC billed sponsors only \$1,141,030, resulting in a cost underrecovery of \$573,064. For the sampled projects, this means that it cost AOC \$1.50 for every \$1.00 of reimbursable funds that AOC recovered from the sponsors. The additional cost not recovered from outside agencies was funded from NOAA appropriations for its core mission. Non-recovered costs accounted for 33 percent of total costs for the four projects (see charts on page 23).

E. Conclusion

AOC does not recover the full cost of reimbursable agreements with outside agencies because of weaknesses in its billing process and to a lesser extent because certain expenses are waived. As a

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<sup>17</sup> After deducting allowable NOAA waived costs of \$53,978. See page 21.

result, AOC financed a significant percentage of the cost of other agencies' projects. Cost underrecovery on reimbursable projects puts at risk projects associated with NOAA's core mission. Under GPRA, NOAA is accountable for the efficiency, effectiveness, and results of its own programs. Therefore, it is essential that NOAA discontinue its interagency reimbursable work and focus exclusively on preserving funding for its core mission. In the interim, however, NOAA should complete all current interagency projects and take appropriate actions necessary to ensure full cost recovery.

F. NOAA Response

NOAA disagrees with our conclusion. NOAA asserts that although its policy provides for recovery of full costs, both direct and indirect in some situations, it also allows for waiving of certain costs when the reimbursable project is beneficial to NOAA. Much of the data obtained through interagency efforts benefits NOAA programs, and would need to be collected regardless of the involvement of other agencies. Waiving certain charges to partnering agencies provides an effective approach for meeting some of NOAA's data collection needs. Furthermore, the shared use of resources to acquire data beneficial to NOAA and the sharing agency is consistent with the National Performance Review and the Administration's efforts to ensure that all government resources are used in the most efficient manner possible. Therefore, NOAA disagrees that waiving of some costs represents an underrecovery of funding when the sharing of resources provides benefits to NOAA.

G. OIG Comments

The focus of NOAA's response is that cost underrecovery is attributable to the waiving of costs on interagency reimbursable projects that are beneficial to NOAA. However, the primary reason why AOC does not recover the full cost of interagency reimbursable agreements is because it underbills these agencies for costs associated with the light aircraft, not because it waives certain charges. In fact, the total waived costs on the four sampled reimbursable projects included in our review account, on average, for only 6 percent of the full in-house costs. More importantly, we are concerned that internal control weaknesses in determining billing rates and in ensuring the completeness of billing statements submitted to reimbursable customers contribute to the cost underrecovery. For example, the hourly amount billed to other agencies does not match AOC's own cost reports that it provides to GSA.

Our report acknowledges that NOAA regulations allow, but discourage, the waiving of costs associated with reimbursable work. The *NOAA Budget Handbook*<sup>18</sup> states that no waivers of any elements of cost on reimbursable projects will be made without the prior approval of the Office of the Comptroller. The *Handbook* also identifies those costs eligible for waiver as including NOAA support, depreciation, and SLUC. Depreciation will only be waived when the equipment used for that particular task is provided by the reimbursing agency or sponsor. SLUC will normally be waived only if the services are performed in facilities not provided by NOAA.

AOC, however, did not comply with NOAA regulations for the waiving of costs in fiscal year 1996 as it waived costs on three of the four OIG-sampled reimbursable projects in that year. For example, on the hurricane response project,<sup>19</sup> AOC did not receive prior approval from NOAA's Office of Comptroller to waive aircraft depreciation costs of \$2,192. Because these costs should not have been waived, we include them in our calculation of full in-house costs for this project in Table 3. For the two projects that AOC did receive prior approval to waive costs, SHOALS<sup>20</sup> and marine mammal,<sup>21</sup> some waived costs did not meet the criteria set forth in the *NOAA Budget Handbook*. On the SHOALS project, AOC waived aircraft depreciation (\$27,636), SLUC (\$8,314), FRPCO (\$8,247), and NOAA support (\$52,936). On the marine mammal project, it waived aircraft depreciation (\$6,028), SLUC (\$327), FRPCO (\$1,440), and NOAA support (\$1,042). According to the criteria, only the NOAA support costs for each of these projects should have been waived. For SHOALS and marine mammals, the sponsoring agency did not provide the equipment or the facilities. Therefore, neither AOC aircraft depreciation nor NOAA SLUC facility charges should have been waived. Regarding the waived FRPCO costs on both projects, the *NOAA Budget Handbook* does not specify whether this cost is eligible to be waived. NOAA's Budget Execution Office confirmed that waiving FRPCO charged to reimbursable agreements is not allowable. Therefore, on the SHOALS and marine mammal projects, we include all waived costs, except for NOAA support, in our calculation of full in-house costs in Table 3.

We agree that the shared use of resources to acquire data can be beneficial to both NOAA and the sharing agency. Accordingly, we reduced full in-house costs in Table 3 for the allowable waived

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<sup>18</sup> Chapter 2, Section 3.2e(1).

<sup>19</sup> Agreement No. RP3A36 with the U. S. Department of the Interior.

<sup>20</sup> Agreement No. RP3A25 with the U. S. Army Corps of Engineers.

<sup>21</sup> Agreement No. RP3A35 with the U. S. Navy.

NOAA support costs of \$52,936 on the SHOALS project and \$1,042 on the marine mammal project. However, even after our adjustments for allowable waived costs, AOC only recovered, on average, 41 percent of the full in-house cost to operate the NOAA light aircraft in fiscal year 1996. Therefore, we reaffirm our conclusion that NOAA is not recovering full cost and should discontinue using its light aircraft for interagency reimbursable projects.

H. Recommendations

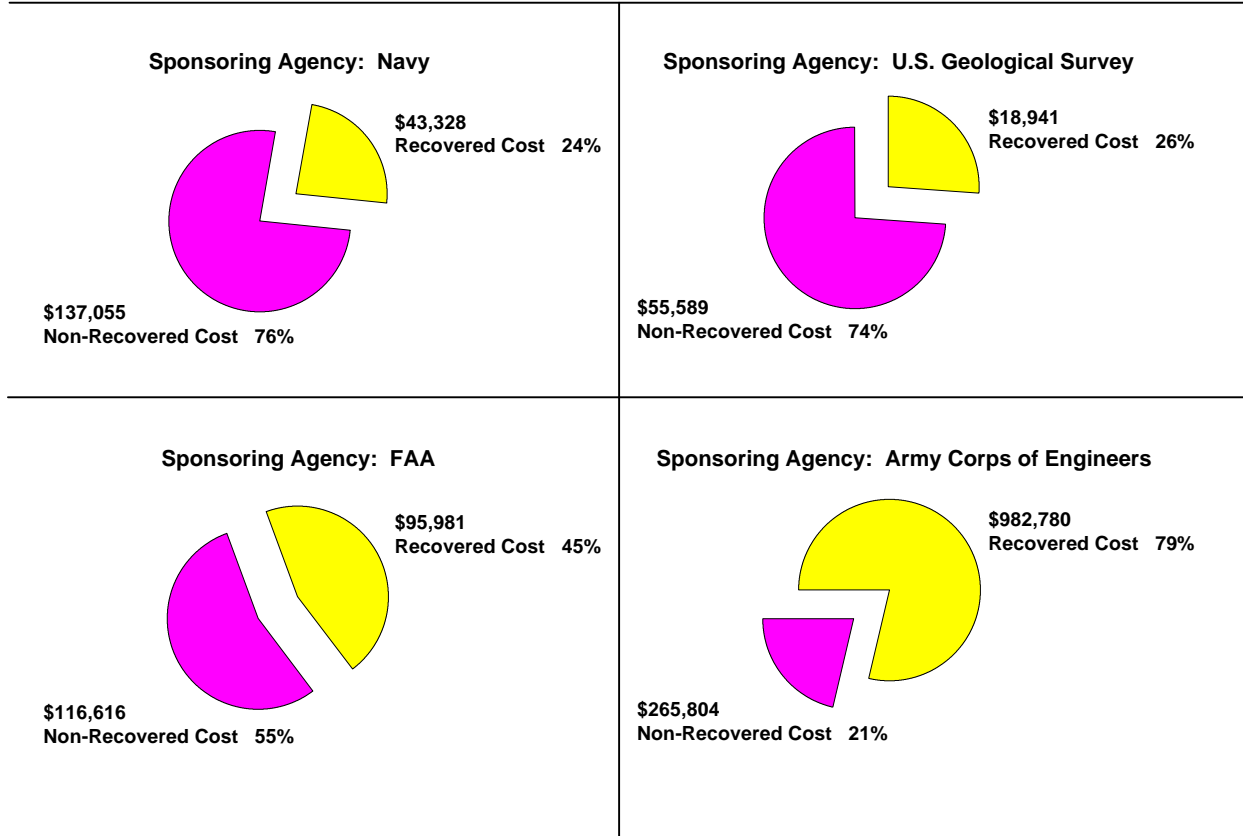
We recommend that the Under Secretary for Oceans and Atmosphere:

1. Discontinue all interagency reimbursable work related to NOAA-owned fixed-wing light aircraft and helicopters.

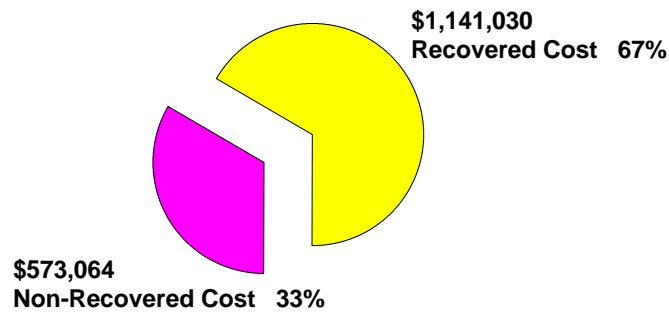
Pending the discontinuance of interagency reimbursable work,

2. Complete current interagency reimbursable agreements in accordance with NOAA's stated policy of full cost recovery.
3. Revise AOC's billing practices to be consistent with, and achieve, full cost recovery on all reimbursable agreements with outside sponsors.
4. As appropriate, immediately amend any current interagency reimbursable agreements not based on full cost recovery.
5. Seek reimbursement, beginning with fiscal year 1996 and where permitted by agreement, of the unrecovered full cost balances on all current reimbursable projects.

### Recovered Cost vs. Non-Recovered Cost For Interagency Reimbursable Projects



#### SUMMARY FOR ALL REIMBURSABLE PROJECTS (Interagency)



**APPENDIX A**

<b>Table 4 NOAA-Owned and Operated Aircraft (as of September 30, 1996)</b>			
<b>Aircraft Description/Year of Make</b>	<b>Tail Number</b>	<b>Home Base</b>	<b>Primary Mission</b>
<b>HEAVY</b>			
Lockheed P-3/1975	N42RF	MacDill AFB, FL	Atmospheric Research
Lockheed P-3/1976	N43RF	MacDill AFB, FL	Atmospheric Research
<b>MID-SIZE</b>			
Gulfstream G-IV Jet/1994	N49RF	MacDill AFB, FL	Not in Service FY 1996
<b>LIGHT FIXED-WING</b>			
Gulfstream Commander 690A/1974	N53RF	Washington-Dulles	Aerial Survey
Lake Renegade 250/1991	N64RF	MacDill AFB, FL	Training
Lake Renegade 250/1991	N65RF	MacDill AFB, FL	Training
Gulfstream Commander 500 S Shrike/1975	N47RF	Frederick, MD	Flight Edit <sup>a</sup>
Gulfstream Commander 500 S Shrike/1977	N51RF	Eden Prairie, MN	Snow Surveys
Cessna Citation II/1978	N52RF	Washington-Dulles	Aerial Photography
de Havilland Twin Otter DHC-6/1980	N485RF	MacDill AFB, FL	Marine Mammal Survey
de Havilland Twin Otter DHC-6/1981	N48RF	MacDill AFB, FL	Marine Mammal Survey
<b>HELICOPTERS</b>			
Bell 212/1979	N60RF	MacDill AFB, FL	Reimbursable
Bell 212/1979	N61RF	MacDill AFB, FL	Reimbursable
Hughes 369/500D/1979	N59RF	MacDill AFB, FL	Inactive
<sup>a</sup> Flight edits are comprehensive aerial flight checks of the accuracy and currency of NOAA's visual aeronautical charts, which are distributed to a variety of users including the Federal Aviation Administration, Department of Defense, general and corporate aviation, and commercial air carriers.			



**APPENDIX B**

**Summary of OIG Overhead Cost Analysis**

Table 5 includes our calculation of the in-house pool of overhead costs applicable to the NOAA aircraft. Following the table, we present our methodology for assigning the costs, explanations, and assumptions.

<b>Table 5</b>				
<b>Calculation of FY 1996 Overhead Pool of Costs</b>				
<b>Cost Description</b>	<b>Draft Report</b>	<b>Adjustment</b>	<b>Final Report</b>	<b>Reference<sup>c</sup></b>
Total obligations/AOC, exclusive of salaries and related costs <sup>a</sup>	\$11,529,357	\$(524,224)	\$11,005,133	A1
Total obligations/salaries and related costs of AOC officers <sup>b</sup>	3,123,790	(47,494)	3,076,296	A1
Additions: Unfunded pension fund liability	487,110	506,822	993,932	A2a
Administrative overhead	952,024	(110,417)	841,607	A2b
Subtractions: Aircraft-specific costs	(7,751,500)		(7,751,500)	A3a
Catastrophic aircraft repair costs	(291,241)		(291,241)	A3b
U. S. Air Force special programs costs	(247,606)		(247,606)	A3c
Gulfstream G-IV-SP jet	(511,058)		(511,058)	A3d
Program support costs	(4,385,217)	110,088	(4,275,129)	A3e
Total overhead pool/net adjustments	\$ 2,905,659	\$(65,225)	\$ 2,840,434	
Less: offsite costs	(47,215)		(47,215)	B1
Remaining overhead pool to allocate to aircraft	\$ 2,858,444	\$(65,225)	\$ 2,793,219	B2

<sup>a</sup> Source: NOAA's FIMA Report No. FR-FD-32 for the fiscal year ended September 30, 1996, Financial Management Center No. 360.

<sup>b</sup> Source: NOAA's FIMA Report No. FR-FD-32 for the fiscal year ended September 30, 1996, Financial Management Center No. 310, task code no. 8P3A (Aircraft Services Support).

<sup>c</sup> See "Methodology for Assigning the Costs," which follows, for explanations.

### Methodology for Assigning the Costs

#### A. Identifying the overhead pool:

1. We used data from NOAA's FIMA to identify the fiscal year 1996 overhead support costs for the aircraft. We began by extracting total obligations from the year-end FIMA report for Financial Management Center #360 (Aircraft Operations Center) (\$11,529,357), and FMC #310, task code #8P3A (Aircraft Services Support) (\$3,123,790), which includes CPC salaries and related costs of the NOAA Corps officers assigned to AOC. To these amounts we made certain additions and subtractions, as described below, to identify the total pool of overhead costs to assign to the aircraft.

Based on discussions with NOAA officials subsequent to issuing the draft report, we reduced reported obligations for Financial Management Center #360 by \$524,224, and Financial Management Center #310 by \$47,494, to correct for double counted overhead. See Appendix D, page 37.

2. Additions to the overhead pool:
  - a. Unfunded pension fund liability (\$993,932) – A contract actuary hired by the NOAA Corps reported that current outlays by NOAA for the Corps do not reflect the full cost of NOAA's liability for future payments to retired Corps officers. In effect, NOAA is paying only 39 cents on each dollar required to put the Corps' retirement system on par with the civilian retirement system. In our draft report, we estimated the annual amortization of the unfunded pension liability associated with the 34 NOAA Corps officer pilots who were assigned to AOC during that year to be \$487,110. Subsequently, NOAA provided us with the actuary's written report, enabling us to calculate the actual unfunded liability of \$993,932. The adjustment of \$506,822 accounts for the difference between these two amounts.
  - b. Administrative overhead costs (\$841,607)
    - (1) Allocated (\$675,247) – These costs are AOC's allocated share of support service provided by ONCO (\$100,055) and CPC (\$350,314), and of AOC's share of the health care contract (\$224,878) not included in total obligations from the year-end

FIMA report for FMCs #360 and #310/task code #8P3A. The health care contract covers active NOAA Corps officers, retired officers, wage mariners, and surviving families. Our calculations were allocated based on AOC direct labor costs. We reduced the allocated share of administrative overhead by \$110,417 based on discussions with NOAA officials subsequent to issuing the draft report and additional documents which NOAA provided. See Appendix D, page 36.

- (2) Directly attributable (\$166,360) – These costs are the salary, FRPCO, and applied indirect costs of ONCO's AOC liaison officer (\$136,576), and AOC costs for reimbursable projects with the Army Corps of Engineers and U. S. Navy (\$29,784) charged to CPC. These costs were not included in total obligations from the year-end FIMA report for FMCs #360 and #310/task code #8P3A. An ONCO official told us that they plan to drop the AOC liaison officer position.

3. Subtractions from the overhead pool:

- a. Aircraft-specific costs (\$7,751,500) – These costs are the fiscal year 1996 direct costs that NOAA included in its FAMIS report to GSA. They cover the direct costs – fuel and lubrication, crew, maintenance, insurance and depreciation – of all NOAA-owned aircraft except the Hughes 369/500D helicopter, which was in storage. We subtracted these costs from the overhead pool because they are aircraft specific direct costs.
- b. Catastrophic aircraft repair costs (\$291,241) – These costs are direct and cover repairs to one of NOAA's two de Havilland Twin Otter aircraft that was damaged during contractor servicing.
- c. U. S. Air Force special programs (\$247,606) – These are direct costs specifically associated with AOC's hurricane reconnaissance missions for the Air Force.
- d. Gulfstream G-IV SP jet (\$511,058) – These are the direct costs of instrumenting NOAA's newly delivered jet.

- e. Program support costs (\$4,275,129) – These include the costs of AOC's Science and Programs Division and Systems Engineering Division. Science and Programs provides scientific liaison and expertise to user organizations. Systems Engineering is the technical support arm that provides multi-discipline engineering services to AOC and its users. It is responsible for the design, development, operation, maintenance, and calibration of all scientific research equipment and systems. We subtracted these costs from the overhead pool because NOAA would incur them whether they use the services of their own aircraft or those of a private contractor.
4. Exclusions:
- a. AOC received the benefit of certain support services and facilities which were excluded from our calculation of the overhead cost pool. These included the following:
    - (1) Department of Commerce overhead costs (amount not determined) – Although AOC receives the benefit of departmental support services, albeit indirectly, we excluded from our overhead pool AOC's share of related costs because excessive audit time would be needed to accurately calculate them.
    - (2) Hangar costs (\$1,300,000) – The Air Force currently provides AOC with rent-free use of its hangar at MacDill Air Force Base. However, as the facilities needs of the Air Force change, so can the status of rent-free use of the hangar. During the period of our audit, the Air Force was considering charging AOC rent, but decided to continue with the rent-free arrangement. This underscores the tenuous nature of AOC's free hangar rental charges. We believe that hangar cost is a significant and necessary component of aircraft operation and must be factored into the cost of doing business. However, we excluded from the overhead pool the value of annual hangar rental of \$1.3 million, based on a NOAA cost study and subsequent modification by the U. S.

General Accounting Office<sup>1</sup>, because NOAA did not incur this expense in fiscal year 1996.

(3) MacDill AFB site services (amount not determinable) – These services include the airport tower for take off and landings, fire protection, and security. MacDill Air Force Base officials told us that although AOC does make use of these services, it cannot identify the costs because it does not separately account for AOC's portion.

b. Retired officer pay and health care contract costs (\$1,106,097) – These costs are AOC's portion of total payments to retired NOAA Corps officers (\$1,007,433), and for the related health care contract (\$98,664). Our calculations are based on AOC's percentage of active NOAA Corps officers. However, when comparing the cost of operating AOC to the cost of outsourcing, these costs should be excluded as an AOC expense because they would continue to be incurred whether NOAA outsourced or not.

B. Assigning the costs in the overhead pool to NOAA's aircraft:

1. Offsite costs (\$47,215) – These costs are for telecommunications, non-aircraft maintenance, miscellaneous contract services, and similar overhead associated with specific aircraft based away from MacDill Air Force Base. We identified and subtracted these costs from the overhead pool and assigned them to the specific aircraft.
2. Remaining overhead pool (\$2,793,219) – The overhead pool remaining after subtracting offsite costs was then assigned to the 12 NOAA aircraft based on each aircraft's relative share of total fiscal year 1996 aircraft-specific costs as reported by NOAA to GSA. GSA offers typical measures used to allocate overhead costs in aviation programs. These include the number of aircraft, flight hours or passengers, value of the aircraft, and variable costs of the aircraft. We believe that assigning overhead costs based on the share of aircraft-specific costs is a fair representation of how overhead costs are incurred to support each of the NOAA aircraft. This method

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<sup>1</sup> NOAA Aircraft Operations Cost Analysis Does Not Support Decision to Relocate, December 1992, U. S. General Accounting Office.

takes into account the value of the aircraft, the number of flight hours, and variable costs because depreciation, maintenance, crew costs, and variable costs are all included in aircraft-specific costs.

Explanations and Assumptions

- A. Overhead costs include operations and administrative overhead. According to GSA's *Government Aircraft Cost Accounting Guide*, operations overhead is the cost associated with the direct management and administration of the aircraft operation. In general, this category does not extend beyond the aviation department and should include all costs that are not assigned to the aircraft-specific cost category, but could be eliminated if the agency did not own and operate any aircraft. Included in this category are the aviation manager, dispatcher, administrative personnel assigned to the unit, office and hangar rental costs, office supplies, and janitorial services. The *Guide* defines administrative overhead as all administrative and management support costs that are provided by other sections of the agency in support of the aviation department. Examples include payroll, personnel, accounting, legal services, as well as the time of senior management devoted to the supervision of the aviation department.
- B. We assume that NOAA's aircraft-based program requirements will continue. We make no attempt to speculate about which of NOAA's many program requirements may no longer be required in the future. We accept NOAA's current program requirements and realize that alternatives must be practically available to prevent disruptions.
- C. Comparisons of NOAA's aircraft to outsourcing alternatives must equate for the level of services provided to programs. As such, we have exerted great effort to ensure that our comparisons are fair and that outside alternatives provide at least the same level of service.
- D. Two of NOAA's 14 aircraft are excluded from our overhead cost calculations and assignments. These are the Gulfstream G-IV SP jet and the Hughes 369/500D helicopter. The G-IV jet was not scheduled for its first mission use until 1997. The Hughes 369/500D helicopter was kept in storage for the entire fiscal year because there was no need for its services.

**APPENDIX C**

**Comparison of OIG-Calculated Full Cost  
for the NOAA-Owned Aircraft with the Industry Standard**

We compared our calculated full costs per flight hour for NOAA's light aircraft with the industry standard. Industry standard costs were obtained from Conklin & deDecker Associates, Inc., an independent consulting firm that prepares OMB Circular A-76 cost comparisons for federal agencies having in-house aircraft operations. Industry standard data was not available for NOAA's two Lake Renegade aircraft. Therefore, they were excluded from this comparison. Our comparative data for the light aircraft is presented first for the fixed-wing aircraft and then for the rotary-wing aircraft.

<b>Table 6</b>				
<b>Light Fixed-Wing Aircraft:</b>				
<b>Comparison of OIG-Calculated Full Cost with the Industry Standard</b>				
Aircraft	Cost Per Hour		Full Cost Over (Under) Industry Standard	Percent Full Cost Over (Under) Industry Standard
	OIG- Calculated Full Cost	Industry Standard <sup>a</sup>		
N53RF/Gulf Turbo Commander 690A	\$1,219	\$1,136	\$83	7.31%
N47RF/Aero Commander Shrike	807	485	322	66.39
N51RF/Aero Commander Shrike	564	485	79	16.29
N52RF/Cessna Citation II	2,606	2,042	564	27.62
N485RF/de Havilland Twin Otter	1,955	1,086	869	80.02
N48RF/de Havilland Twin Otter	1,955	1,086	869	80.02
<b>Light Fixed-Wing Average Percentage<sup>b</sup></b>				<b>44.08%</b>
<sup>a</sup> Includes an administrative charge of 8 percent of the industry standard hourly rate for NOAA administrative oversight. The administrative charge is the same rate charged by OAS and the same rate used by AOC in its 1995 draft in-house aircraft cost study.				
<sup>b</sup> Calculation based on the total of the "Full Cost Over (Under) Industry Standard" column, \$2,786, divided by the total of the "Industry Standard Cost Per Hour" column, \$6,320.				

<b>Table 7</b>				
<b>Light Rotary-Wing Aircraft:</b>				
<b>Comparison of OIG-Calculated Full Cost With the Industry Standard</b>				
Aircraft	Cost Per Hour		Full Cost Over (Under) Industry Standard	Percent Full Cost Over (Under) Industry Standard
	OIG- Calculated Full Cost	Industry Standard <sup>a</sup>		
N60RF/Bell 212 Helicopter	\$1,816	\$2,813	\$(997)	(35.44)%
N61RF/Bell 212 Helicopter	1,594	2,813	(1,219)	(43.33)
<b>Rotary-Wing Average Percentage<sup>b</sup></b>				<b>(39.38)%</b>
<sup>a</sup> Includes an administrative charge of 8 percent of the industry standard hourly rate for NOAA administrative oversight. The administrative charge is the same rate charged by OAS and the same rate used by AOC in its 1995 draft in-house aircraft cost study.				
<sup>b</sup> Calculation based on the total of the "Full Cost Over (Under) Industry Standard" column, \$(2,216), divided by the total of the "Industry Standard Cost Per Hour" column, \$5,626.				

Two components, aircraft depreciation and insurance, account for the higher industry standard cost for AOC's two Bell 212 helicopters. Aircraft depreciation and insurance costs for both helicopters are 54 percent of total industry standard costs, whereas for our calculated full costs they are 10 percent for the N60RF helicopter and 13 percent for the N61RF helicopter. The annual depreciation expense in the industry standard for both helicopters is \$500,500, based on the purchase of new helicopters costing \$5,005,000 each and depreciated over eight years to a 20 percent residual. However, NOAA claimed an annual depreciation expense of only \$51,385 and \$51,903 for N60RF and N61RF, respectively. NOAA's full cost depreciation expense is based on AOC's purchase of used helicopters costing \$924,932 and \$934,249 each, and depreciated over 18 years with no residual. Private-sector companies often accelerate the annual rate of depreciation expense to take advantage of federal tax laws offering greater write-offs. The annual insurance expense in the industry standard for both helicopters is \$135,125 and covers insurance on the aircraft hull and for liability. The largest component of this expense is insurance of \$125,125 on the aircraft hull and is based on 2.5 percent of the purchase price of a new helicopter. However, NOAA estimated only about \$20,000 for each of its Bell helicopters.



## APPENDIX D

### Summary of NOAA's Response to the Draft Audit Report and Related OIG Comments

In its reply to our draft audit report, NOAA provided its position on each of our findings, recommendations, and other related issues, as summarized in the following sections. Each portion of the NOAA response is followed by our comments. A copy of the complete response is presented as Appendix E.

#### **OIG FINDING: NOAA SHOULD PRIVATIZE ITS LIGHT AIRCRAFT SERVICES SUPPORT**

##### Conclusion

Program offices should rely on the private-sector to provide required light aircraft services. This is because NOAA's group of 10 light aircraft is significantly more costly to operate when the true or full costs are compared with the private sector.

NOAA Response: NOAA does not agree with our conclusion that its group of 10 light aircraft is significantly more costly to operate when the true or full costs are compared with the private sector. NOAA believes that data in the draft report were incomplete. There are three areas of cost, it believes, which appear incorrect. These are the costs associated with overhead, daily use or standby time, and modification and demodification of the aircraft necessary to meet NOAA's project requirements. Regarding each of these three types of cost, NOAA states the following:

#### **1. Overhead**

In determining the full costs for NOAA's aircraft, certain overhead costs are either incorrectly double counted or otherwise inappropriate, leading to an overstatement of NOAA's costs per flight hour. Specifically, NOAA takes exception to the following costs that are included in our calculation of the fiscal year 1996 in-house overhead pool<sup>1</sup>:

- A. Unfunded pension fund liability (\$487,110) – The unfunded pension liability in line 3 should be removed because it is included as an indirect cost in the total obligations for AOC in line 1.

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<sup>1</sup> See Table 5, Appendix B, line numbers as specified.

- B. Administrative overhead costs (\$828,024) – The administrative overhead in line 4 (\$952,024) should be reduced to no more than \$124,000 because all of the overhead expenses, except perhaps a portion of health care, are included as indirect costs in lines 1 and 2 and the AOC liaison officer position has been eliminated.
- C. Indirect costs (\$576,000) – Indirect costs included in line 1 are also included in this line as a direct cost and should be excluded.

## **2. Daily use or standby time**

OIG estimates of contractor costs exclude daily use or standby time costs that contractors would charge because their aircraft would be unavailable for other uses due to environmental or other factors that do not meet mission or safety parameters. Standby time caused by bad weather, reinstrumentation and other factors can, for some missions, be a significant percentage of the time allotted for the project.

## **3. Modification and demodification**

The OIG excluded from its contractor cost estimates aircraft modification and demodification costs. These are the costs of adding, and removing in some post-project demobilizations, the specialized aircraft equipment and modifications necessary to support NOAA's mission.

Also, one aircraft included in the OIG analysis, a Twin Otter (N48RF), was damaged while undergoing maintenance, resulting in a reduction in flight hours and subsequently higher than normal costs per hour of flight. The use of hourly costs for a sister aircraft is a more accurate representation of the typical costs for this aircraft.

In its response, NOAA developed for each of the light aircraft its own comparison of full in-house and contractor cost. After excluding double counting of NOAA overhead costs, including daily use or standby time and aircraft modification costs for contractors, and correcting the cost of NOAA's Twin Otter to account for downtime during maintenance on the aircraft, NOAA concluded that its aircraft operation costs 32 percent less than contractors.

OIG Comments: We reaffirm our conclusion that NOAA's group of 10 light aircraft is significantly more costly to operate when the true or full costs are compared with the private sector. Regarding NOAA's response concerning the three areas of cost, we offer the following:

## 1. Overhead

- A. Unfunded pension fund liability (\$487,110) -- According to a report issued by the contract actuary hired by the NOAA Corps<sup>2</sup>, the total annual cost of a retirement system is the annual normal cost and the payment of the amortization of the unfunded liability. The annual normal cost is the annual amount required to prefund retirement benefits for all active service officers. It is calculated as the salary during the period multiplied by the normal cost percentage. The normal cost used in the actuary's report was 37.3 percent of payroll. The unfunded liability is the actuarial present value of projected retirement plan benefits. It is calculated by adding the present value of benefits for current retirees and current active officers and subtracting the present value of future normal cost. The actuary amortized the unfunded liability over 40 years.

In addition, NOAA's *Budget Handbook* states that FRPCO is the surcharge applied to NOAA Corps labor within a task. The FRPCO of \$485,605.61 included in the overhead pool was calculated by multiplying regular salaries of NOAA Corps officers (Object Class 1111) of \$1,298,410.70 by 37.4 percent. Clearly, this amount is the annual normal cost of the NOAA Corps retirement system applicable to the active pilots assigned to AOC. However, according to the actuary's report, it is only one of two elements that comprise the total annual cost of the retirement system.

The other separate and distinct element contributing to the cost of the NOAA Corps retirement system is the unfunded pension liability. Based on limited data available to us at the time of our review, we calculated the fiscal year 1996 amortization of the unfunded pension liability to be \$487,110 and, because it was not included in NOAA's FIMA data, added it to the overhead pool. Subsequent to our draft report, ONCO provided us with additional data that, for purposes of full cost accounting, necessitated that we increase the annual amortization of the unfunded liability to \$993,931.54.

The additional data consisted of a written report of the actuary<sup>3</sup> detailing its calculation of the Corps retirement system's unfunded liability of \$266,800,000,

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<sup>2</sup> *Analysis of the Retirement Cost From Disestablishment of the National Oceanic and Atmospheric Administration Corps*, Hay/Huggins Co., Inc., March 6, 1997.

<sup>3</sup> *Opinion of the Enrolled Actuary of the NOAA Corps Retirement System as of September 30, 1997*, Hay/Huggins Co., Inc., December 23, 1997.

which was included in NOAA's audited financial statements for fiscal year 1996<sup>4</sup>. The actuary reported that the fiscal year 1996 amortization of the unfunded liability was \$19,430,000. Our analysis of the actuary's calculation of the unfunded liability indicated that 52.52 percent of the total present value of future benefits was applicable to active duty officers<sup>5</sup>. Therefore, 52.52 percent of the annual amortization, or \$10,204,636, was applicable to these officers. Because 9.74 percent of the active duty officers in fiscal year 1996 were pilots assigned to AOC, 9.74 percent of \$10,204,636, or \$993,931.54, was the annual amortization of the unfunded liability applicable to the pilots assigned to AOC.

In addition, we contacted NOAA's Finance Office regarding FRPCO and the unfunded pension liability. An official told us that FRPCO is calculated by applying a certain rate to the salaries of NOAA Corps officers. The unfunded pension liability which appears in the annual financial statements is actuarially-determined. The official emphasized that the two cost elements are separate and distinct.

We, therefore, disagree with the NOAA response. We correctly included, without duplication, both the annual normal cost (FRPCO) and the amortization of the unfunded liability, as revised by the additional NOAA data,<sup>6</sup> in our calculation of the fiscal year 1996 overhead pool.

- B. Administrative overhead costs (\$841,607)— We reduced the allocated share of administrative overhead by \$110,417, based on discussions with ONCO officials subsequent to issuing our draft report and additional documents that they provided. This adjustment consists of a (1) \$122,927 decrease in AOC's allocated share of support service provided by CPC attributable to correcting for (a) a misclassification error involving health care contract costs and (b) the cost of an ONCO billet with duties specific to the NOAA vessel fleet, and (2) \$12,510 increase to account for additional costs of AOC's share of the contract for health care provided by the U. S. Department of Health and Human Services to NOAA beneficiaries.

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<sup>4</sup> *Audit of NOAA's FY 1996 Financial Statements*, Audit Report No. FSC-8841-7-0001, February 26, 1997.

<sup>5</sup> The remaining 47.48 percent of the present value of future benefits was applicable to current annuitants and excluded from our calculation of the unfunded liability for purposes of comparing in-house and contractor costs.

<sup>6</sup> See adjustment of \$506,822 to the unfunded liability in line 3, Table 5, calculated by subtracting the original OIG amount, \$487,110, from the revised total, \$993,932, which is based on the actuary's written report.

Regarding NOAA's assertion that part of our addition to the overhead pool for administrative costs duplicates indirect costs in lines 1 and 2 of the pool, we have reduced line 2 by \$47,494. This amount consists of applied indirect costs associated with the Commissioned Personnel Center for the salaries of AOC officers<sup>7</sup>. Because we included the actual indirect costs for these officers as an addition to the overhead pool (\$350,314/allocated administrative overhead), it would be inappropriate to also include the applied costs in the same pool. However, NOAA has not provided written evidence to corroborate its assertion that administrative overhead costs of \$100,055 related to support services provided by ONCO are double counted. As a result, we are unable to ascertain how applied indirect overhead from AOC's FMC 360 funds activities that are related to ONCO.

We disagree with NOAA's assertion that administrative overhead should be reduced for the costs of the AOC liaison officer because the position has been eliminated. One of our audit objectives was to account for the full in-house cost of operating the NOAA aircraft in fiscal year 1996. NOAA's elimination of this position subsequent to fiscal year 1996 does not change the fact that these costs were incurred during the audit period. To exclude these costs from the overhead pool would be inconsistent with our audit objective as well as the full cost reporting principle embodied in *Statement of Federal Financial Accounting Standards No. 4*.

- C. Indirect costs (\$576,000) – In response to NOAA's assertion that indirect costs included in line 1 are also included in this line as a direct cost and should be excluded, we reduced line 1 by \$524,223.93. This amount is attributable to general support for AOC<sup>8</sup> and is a source of funding for it through the NOAA Management Fund.

## 2. Daily use or standby time

We discussed the issue of daily use or standby time with contractors and Interior's Office of Aircraft Services. Standby time is charged because it is not known when or even if an aircraft is needed, but should it be, it must be made available immediately and exclusively to the user. For example, OAS solicits bids for fire suppression missions. Because of the unknown nature of forest fires, platforms need to be available on call. Therefore, OAS solicits these aircraft services by requiring that contractors bid a daily standby time charge

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<sup>7</sup> FMC 310, object class codes 9858 (\$21,570), 9878 (\$25,725), and 9958 (\$199).

<sup>8</sup> FMC 360, object class code 9878/OR&F (S&E).

for each day of the fire season. Contractors get paid the daily standby charge regardless of whether the aircraft flies.

Including a daily use or standby time charge in contractor rates for NOAA light aircraft services would be inappropriate because its contract requirements, such as approximate hours and contract period, are known. The "FY 1996 Flight Operations Schedules," approved by the NOAA Aircraft Allocation Council, clearly identifies for each AOC light aircraft the allocated hours and scheduled performance period for the various projects. For example, N47RF (Shrike) was scheduled for 100 hours of flight edit each month during October, January, April, July, and September; and N52RF (Citation) was scheduled for 410 hours of coastal mapping for January through September.

With this information, contractors are able to negotiate, and do negotiate, NOAA contracts without a daily use or standby time charge. For example, one helicopter contractor bid and won a NOAA contract to perform marine mammal surveys. The contractor told us that it bid an hourly rate of \$325 for 100 hours of survey work to be performed between September 1 and November 15. There is no charge for daily use or standby time for the contract period; only the hourly rate is billed. The contractor said that the contract did not include a provision for daily use or standby time because it is willing to negotiate to obtain the government's business. As another example, NOAA has also contracted with a different company to perform coastal mapping work for the National Ocean Service and the contract does not include a provision to charge for daily use or standby time.

During the audit exit briefing, NOAA officials stated that daily use or standby is included in the provisions of NOAA contracts for aircraft support services. However, they were unable to identify the specific contracts. Subsequently, we requested that a NOAA official provide us with a list of all such current contracts to corroborate that such charges are routinely included in contract provisions. However, the NOAA official did not respond to our request.

Therefore, we disagree with the NOAA Corps position. Including a daily use or standby charge would be inappropriate and would distort the contractor rates used for comparison with the full in-house costs for each of the NOAA-owned light aircraft.

### **3. Modification and Demodification**

We do not agree with NOAA's assertion that modification and demodification costs should be added to our estimated contractor costs. Modification and demodification costs, included in AOC's program support costs, have already been subtracted from the overhead pool in Table 5, Appendix B. Program support includes the costs of the

Systems Engineering Division and its fabrication shop that are responsible for the design and construction of aircraft modifications. Therefore, we believe that if we were to include these costs in our estimates of contractor rates, as NOAA proposes, it would invalidate the comparisons unless SED costs of \$3,226,335 were added back to the in-house overhead pool. Also, as discussed in our report, we found that private-sector companies have the capability to support NOAA missions. These companies are in the business of providing the types of light aircraft support services that NOAA and other agencies, such as the U. S. Department of Agriculture, require and, by necessity, have aircraft fully equipped to meet specific requirements. Examples include aircraft support for mammal surveys and aerial photogrammetry to complete flight edit, coastal mapping, and airport obstruction. Substantive modifications to their platforms are unnecessary. If modifications are required, one contractor told us that it is willing to modify its aircraft at its own expense because it wants NOAA's business.

Also, during the audit exit briefing, NOAA officials stated that modification costs are included in the depreciation charges that they report to GSA. Our review of the fiscal year 1996 FAMIS report provided to GSA and AOC's aircraft depreciation schedule for that year indicate that depreciation charges for the light aircraft were based on the initial acquisition cost of each aircraft. Modification costs were not identified. NOAA must provide us with a written breakdown of the capitalized cost of each light aircraft reported to GSA together with supporting cost documents to substantiate its assertion.

Concerning the Twin Otter (N48RF) that was damaged during maintenance, we acknowledge that our comparison should compensate for the reduction in flight hours, and have adjusted our calculated in-house hourly rate to equal that of NOAA's other Twin Otter (see Table 1).

The cost ineffectiveness of NOAA's group of 10 light aircraft is substantiated by NOAA's own calculations of the full in-house costs that it provided in its written response (see Appendix E, page 17). Even after excluding what NOAA claims to be double counted overhead and correcting the cost of its Twin Otter to account for downtime, NOAA's full costs are, on average, 33 percent more than our estimated contractor hourly rates. Table 8 (see Appendix D, page 40) provides the results of our analysis.

## Recommendations

### Recommendation #1

Retain the two Lockheed WP-3D Orions and the Gulfstream G-IV SP jet.

NOAA Response: NOAA concurs with the recommendation to retain the Lockheed WP-3D Orions and the Gulfstream G-IV SP jet.

OIG Comments: NOAA's reply is responsive to our recommendation.

**Table 8**  
**NOAA's Light Aircraft:**  
**Comparison of NOAA-Calculated Full In-House Cost**  
**With OIG-Obtained Contractor Rates**

Aircraft	Hourly Cost			Percent NOAA Full Cost Over (Under) Contractor Cost
	NOAA-Calculated Full Cost	OIG-Obtained Contractor <sup>a</sup>	NOAA Full Cost Over (Under) Contractor Cost	
N53RF/Gulf Turbo Commander 690A	\$1,148	\$ 688	\$ 460	66.86%
N64RF/Lake Renegade	294	205 <sup>b</sup>	89	43.41
N65RF/Lake Renegade	230	205 <sup>b</sup>	25	12.20
N61RF/Bell 212 Helicopter	1,501	1,836	(335)	(18.25)
N60RF/Bell 212 Helicopter	1,710	1,836	(126)	(6.86)
N47RF/Aero Commander Shrike	759	366	393	107.38
N51RF/Aero Commander Shrike	530	366	164	44.81
N52RF/Cessna Citation II	2,453	1,436	1,017	70.82
N485RF/de Havilland Twin Otter	1,841	1,142	699	61.21
N48RF/de Havilland Twin Otter	1,841	1,142	699	61.21
<b>Light Aircraft Average Percentage<sup>c</sup></b>				<b>33.45%</b>

<sup>a</sup>Includes an administrative charge of 8 percent of the contractor's hourly rate for NOAA contractor oversight. The administrative charge is the same rate charged by OAS and the same rate used by AOC in its 1995 draft in-house cost study.

<sup>b</sup>The commercial rate for the two Lake Renegades was available from only one contractor. Private sector owner-operators told us that contractor rates are difficult to obtain because the Lakes have limited practical use and are mainly a recreational platform. Also, AOC's 1995 in-house cost study included a commercial rate of \$173/hour.

<sup>c</sup>Calculation based on the total of the "NOAA Full Cost Over (Under) Contractor Cost" column, \$3,085, divided by the total of the "OIG-Obtained Contractor Hourly Cost" column, \$9,222.



Recommendation #2

Discontinue operating the eight fixed-wing light aircraft and the three helicopters (including the inactive Hughes 369/500D helicopter) and release them, in accordance with OMB Circular A-126, along with related spare parts.

NOAA Response: NOAA disagrees with this recommendation. NOAA believes this recommendation is based on an incomplete analysis that results in an incorrect conclusion that commercial alternatives are less costly. It believes that its operations are more cost effective than the private sector. Also, NOAA states that disposal of its aircraft would pose an unacceptable risk to its ability to continue uninterrupted data collection in support of its scientific and survey missions and would increase the risk of accidents that could affect the safety of NOAA program personnel.

OIG Comments: We reaffirm our recommendation. We believe that our comparative analysis of costs was thorough and objective and stand by our conclusion that NOAA's group of 10 light aircraft are significantly more costly to operate when their true or full costs are compared with the private sector. We specifically addressed each of NOAA's concerns about the costs of overhead, daily use or standby time, and modification and demodification, as well as NOAA's Twin Otter that was damaged during maintenance, in the previous section. Where appropriate, we have made adjustments to full in-house costs to reflect these concerns. Our analysis clearly shows that the cost to operate NOAA's fleet of 10 light aircraft averaged 42 percent more than the cost to operate similar private-sector aircraft that can provide equivalent services. The reality of this conclusion is underscored by the fact that NOAA's own full in-house costs, which it provided in its written response, are 33 percent more than our estimated private-sector rates.

Regarding NOAA's assertion that disposal of its light aircraft would pose an unacceptable risk to its ability to continue uninterrupted data collection in support of its scientific and survey missions, we remind NOAA that the majority of flight hours for its light aircraft in fiscal year 1996 were in pursuit of the missions of other agencies. Two of NOAA's light aircraft were used exclusively for interagency work. When NOAA does need light aircraft primarily in support of its own mission, it should rely on the services of contractors. As discussed in the report, aircraft service contractors are capable and available to provide uninterrupted data collection in support of NOAA's mission. NOAA should rely, as other agencies do, on the aircraft services of contractors.

We also disagree with NOAA's assertion that the disposal of its light aircraft would increase the risk of accidents that could affect the safety of NOAA program personnel. We believe that customers, including other agencies, would not contract with the numerous private aircraft service providers available if they posed an unacceptable safety risk. Like the procurement of any service, it behooves the customer to do its homework. Matters affecting safety can and should be satisfactorily resolved before contracting with aircraft service providers. To date,

AOC has had a commendable safety record. However, we believe that the time is most appropriate for NOAA to dispose of its 10 light aircraft and seek its aircraft support services from those private contractors that will provide them effectively, economically, and safely.

NOAA should include in its audit action plan a milestone schedule for release of its eight fixed-wing light aircraft, three rotary aircraft, and related spare parts. The milestone schedule should include for each aircraft identification of remaining project commitments and planned completion dates, as well as NOAA's expected release dates.

### Recommendation #3

Establish written NOAA policy that program offices are to rely on the private sector, when economically advantageous, to provide aircraft services support.

NOAA Response: Although NOAA stated that it agrees that the program offices should rely on the private sector to provide aircraft support when it is economically advantageous to do so, it has already established written NOAA policy to this effect. NOAA believes that its Administrative Order 216-103 provides NOAA program managers appropriate guidance for obtaining aircraft support services efficiently and economically. NOAA further states that it does use contracted aircraft support to meet some needs where economically or operationally beneficial and that it is in conformance with all current NOAA and Administration policies.

OIG Comments: NOAA's reply is responsive to our recommendation to establish such written policy. However, based on the results of our audit, we disagree that NOAA has fully implemented either its or the Administration's policies to use the private sector when economically advantageous. We, therefore, have modified our recommendation to state that NOAA should fully comply with its established written policy.

### Recommendation #4

Transfer AOC base funding for aircraft support to NOAA's line organizations, and implement procedures to ensure that line organizations procure aircraft support from the most cost-effective private-sector sources.

NOAA Response: NOAA disagrees with the recommendation to transfer base funding to the line offices. It cites four reasons. First, through the aircraft allocation process, the line organizations manage use of funding for aircraft support. NOAA's Aircraft Allocation Council (NAAC) is responsible for establishing the relative priorities for the use of NOAA aircraft. Second, a significant portion of the funds used for light aircraft is presently included in line office funding and is transferred to AOC on an annual basis to meet specific project requirements. Third, transferring the funds to the line offices would require that each line organization set up a management structure to oversee the allocation of funds for budget and procurement purposes.

AOC already provides these services efficiently as a centralized function. Fourth, transfer of AOC base funding to the program offices could compromise safety.

OIG Comments: We reaffirm our recommendation. Through the aircraft allocation process, the line organizations are managing use of operational NOAA aircraft time, not funding, to support NOAA's programs and missions. The NAAC decides how the time of NOAA's base funded aircraft will be allocated among competing NOAA projects. However, by transferring base funding to the line components, NOAA would provide greater control to program managers over flight hour funding. As found in our audit, NOAA aircraft are, on average, 42 percent more costly to operate as compared with contractors. Transfer of base funding to the line organizations would enable program managers to procure aircraft services from the more cost-effective commercial sources and provide opportunities to select alternative platforms.

As to NOAA's claim that line offices transfer significant funding for light aircraft to AOC each year to meet specific project requirements, the issue is whether they would still be willing to do so if they knew that NOAA aircraft cost, on average, 42 percent more to operate than those of contractors. Line offices would most certainly reconsider such transfers if they knew that contractors would offer them the choice of greater cost savings or increased flight hours.

We also disagree with NOAA's assertion that transferring base funding would necessitate a separate management structure for budget and procurement and that AOC already provides these services efficiently as a centralized function. A separate management structure within each line organization would be unnecessary. Existing program managers and contracting officers would assume the additional responsibilities for acquiring aircraft support. Also, the results of our audit of AOC, which includes its budget and procurement functions, demonstrate the relative inefficiencies of NOAA's centralized aircraft support services.

The distribution of base funding to the line offices would not compromise the safety of aircraft. As noted in our comments regarding recommendation #2, the line offices would satisfactorily resolve safety issues in the contractor selection process. We believe that contractors, too, have a mandate to maintain their planes in a safe manner and to ensure that the crews are properly trained. Their customers and, ultimately, the success of their businesses depend upon safety.

#### Recommendation #5

Pending release of aircraft and transfer of funding, report the full cost of each aircraft in accordance with federal accounting guidelines.

NOAA Response: NOAA agrees that the full cost of operation of each aircraft should be reported in accordance with federal accounting guidelines. Although NOAA believes that it is in compliance, it will review its data reports to ensure that it corrects any identified deviations from the standards.

OIG Comments: NOAA's reply is responsive to our recommendation. However, NOAA's audit action plan should include commitments to provide us with the results of its review of data reports for identified deviations from full cost and a copy of the fiscal year 1998 FAMIS report of aircraft operating costs which it submits to GSA.

### Other Related Issues

NOAA raises the following other issues related to this finding. The page references are to NOAA's complete response to the draft audit report at Appendix E.

#### 1. Funds to Be Put to Better Use

NOAA Response: NOAA states that if its 10 light aircraft are sold, the proceeds will go to the general treasury, not to NOAA, requiring NOAA to secure additional funding to acquire contract aircraft support (see page 11). Also, NOAA asserts that included in the annual savings claimed are depreciation and insurance costs which may be appropriate for a cost comparison but which are not appropriated funds available for spending (see page 14).

OIG Comments: The proceeds from the sale of the 10 light aircraft cannot be used to directly fund NOAA's contract aircraft support. Because the aircraft are federal government aircraft, not NOAA aircraft, the proceeds must go to the U.S. Treasury. Funding for contract aircraft support comes from NOAA's regular appropriation for aircraft services program support. The real savings to NOAA come not from the one-time sale of the aircraft, but from the annual cost savings over the long-term from contracting for aircraft services support rather than obtaining this support in-house.

Both depreciation and insurance relate to appropriated funds available for spending. Depreciation is based on the acquisition cost of an aircraft. Insurance relates to catastrophic aircraft repairs. The difference between these costs and those such as pilot salaries and fuel is in the timing of their expenditure. Appropriated funds for salaries and fuel are expended annually. However, appropriated funds to purchase aircraft or to pay for catastrophic aircraft repairs are one-time expenditures. To compensate for this timing difference and to ensure capture of each aircraft's full costs, depreciation and insurance must be reported annually and considered as essential elements in the calculation of annual cost savings.

#### 2. Bell 212 Helicopters

NOAA Response: NOAA states that the draft report implies that its Bell helicopter rates only appear to be cost competitive because of depreciation methodologies. More specifically, the OIG report says that the industry approach is to depreciate helicopters over eight years to gain a tax advantage, while NOAA is depreciating NOAA helicopters over 18 years making its costs appear lower. However, NOAA's helicopters are 12 years old, so if the industry approach was used,

NOAA's cost would actually decrease because the helicopters would be fully depreciated (see page 18).

OIG Comments: We stand by our assessment that depreciation, as well as insurance, plays a significant role in making the Bells appear to be cost competitive with the private sector. We are not, however, suggesting that NOAA adopt the industry depreciation methodology. Depreciation and insurance costs aside, our most important concern regarding NOAA's two Bell 212 helicopters is that in fiscal year 1996 these two aircraft were used exclusively for interagency reimbursable projects. NOAA appropriations funded 33 percent of the cost of these other agency projects, diverting limited program funding from NOAA's primary mission. NOAA should not operate aircraft that result in subsidizing another agency's primary missions.

### 3. NOAA's Contracted Marine Mammal Work/Twin Otter vs. Partenavia Aircraft

NOAA's Response: NOAA claims that the comparison of the costs for contracted marine mammal work, which is based on the use of a Partenavia aircraft, with NOAA's Twin Otter costs is inappropriate. It then cites various areas where the two aircraft differ to support its assessment, including aircraft range, operating reliability, parts availability, and size of the interior cabin, among others (see page 19).

OIG Comments: We reassert the validity of our comparison between the contractor's Partenavia aircraft and NOAA's Twin Otter aircraft. An inherent and important benefit of contracting for aircraft support is the opportunity to use alternative aircraft platforms which accomplish the same project goals and offer the federal government significant cost savings. This is the result with the Partenavia aircraft. The contractor told us that it has flown the Partenavia aircraft on a variety of NOAA marine mammal surveys, including gray whale, blue whale, harbor porpoise, and cetacean mammals. Currently, the contractor is working with NOAA on the harbor porpoise project. We believe that this contract work demonstrates the suitability of the Partenavia aircraft for marine mammal projects and the validity of the comparison with NOAA's Twin Otter aircraft.

### 4. Economies of Scale as the Primary Factor Leading to the Higher NOAA Cost

NOAA Response: NOAA asserts that economies of scale are attainable for routine commercial activities such as carrying passengers or freight, but not for NOAA aircraft which require modifications and standby time. NOAA's operating costs, when double counted overhead is excluded, do not include significantly large support costs incurred by ONCO, CPC, and AOC. Also, NOAA's economy of scale is enhanced by cooperative arrangements with other agencies (see page 21).

OIG Comments: We stand by our original analysis that a poor economy of scale is the primary factor leading to the higher NOAA cost. Even after our adjustments (see Table 5, Appendix B),

overhead accounts for 30 percent of the operating costs for the NOAA aircraft. The industry standard for overhead, on average, is 8 percent of operating costs. Contractors have leveraged this significant difference to achieve economies of scale pursuing NOAA missions. As noted in our report, AOC uses both of its Twin Otter aircraft to perform mammal surveys at a cost per hour of \$1,955, while a contractor for NMFS in La Jolla charges \$351 per hour. Also, any economies of scale realized by cooperative arrangements with other agencies are lost because NOAA does not bill such agencies for the full cost of such projects.

5. No Apparent Need for the Hughes 369/500D Helicopter

NOAA Response: NOAA claims that it retains the Hughes 369/500D helicopter for three reasons. First, NOAA refers to the aircraft's unique capabilities, citing its (1) small size and compatibility with the stability restrictions of the NOAA Ship DAVID STARR JORDAN, from which it conducts an extensive marine mammal survey for NMFS, and (2) small turbine engine with increased lifting and carrying capacity and safety over water. Second, NOAA states it had looked to obtain the aircraft through charter but none was available and the aircraft was no longer being manufactured. Third, NOAA asserts that there is very little expense involved in maintaining the aircraft in storage (see page 22).

OIG Comments: We stand by our assessment that the Hughes 369/500D helicopter should be released, along with related spare parts, in accordance with OMB Circular A-126. Based on its historical usage, the Hughes will never achieve the economies of scale associated with cost-effective use. NOAA acquired the Hughes on October 1, 1987. As Table 9 (see page 47) shows, for fiscal years 1988 through 1996, the Hughes has flown, on average, only 39 percent of the total hours approved for it by NOAA's Aircraft Allocation Council.

Although the Hughes may possess unique capabilities, this should not prevent NOAA from considering alternative strategies and platforms. These would include, among others, obtaining the services of a contractor ship and helicopter, using land-based contractor aircraft or lighter cameras, and soliciting an aircraft service contractor to build a Hughes from available spare parts.

NOAA also noted that when the Hughes was acquired in 1987, it first had looked to obtain one through charter but none was available. Because almost 11 years have expired since NOAA made its initial inquiry, we encourage NOAA to survey the commercial market to determine if aircraft service contractors may have acquired, or know where to acquire, a Hughes aircraft should NOAA find it impossible to identify an alternative strategy for conducting marine mammal surveys or a contractor offering an alternative platform.

<b>Table 9</b>			
<b>Hughes 369/500D Helicopter</b>			
<b>Comparison of NAAC-Approved With Actual Flight Hours</b>			
Fiscal Year	Number of Flight Hours		Actual as a % of NAAC-Approved
	NAAC-Approved	Actual	
1988 <sup>a</sup>	360	200.9	56%
1989	480	209.3	44
1990	390	126.8	33
1991	370	103.0	28
1992	300	87.9	29
1993	135	159.2	118
1994	200	93.4	47
1995	200	6.4	3
1996	100	0	0
<b>Average Percentage<sup>b</sup></b>			<b>39%</b>
<sup>a</sup> Aircraft acquired October 1, 1987			
<sup>b</sup> Calculation based on the total of the "Actual Number of Flight Hours" column, 986.90, divided by the total of the "NAAC-Approved Number of Flight Hours" column, 2,535.			

NOAA claims that there is very little expense in maintaining the Hughes in storage. While this may be true, the economy of annually incurring expenses to bring the aircraft out of storage, prepare and maintain it for use, and operate it when that aircraft has been historically underutilized, is questionable. Retaining the Hughes does not appear to be a cost-effective alternative.

6. Other Factors Contributing to the Higher AOC Costs Per Flight Hour

NOAA Response: NOAA takes issue with two of the factors which, in our opinion, contribute to the higher AOC costs per flight hour. These are (1) downtime attributable to increased maintenance and (2) the lack of an OMB Circular A-76 cost comparison. Regarding downtime and maintenance, NOAA states that there is no data that shows current costs are being driven up by increased maintenance requirements or that scheduled maintenance has ever adversely affected the operational commitments of any NOAA aircraft. Regarding OMB Circular A-76 cost comparisons, which are required by OMB Circular A-126, NOAA claims that Circular

A-126 applies primarily to governmental aircraft versus commercial aircraft for travel of government officials. NOAA does not use its aircraft for travel purposes because they are modified for scientific data collection rather than carrying passengers. Also, NOAA asserts that it has submitted the results of its 1995 in-house cost study to the Congress and OMB, and discussed them with NOAA managers at NAAC meetings (see pages 24 and 25).

OIG Comments: We disagree with NOAA's responses to these two factors. Regarding downtime and maintenance, our opinion in the draft report did not refer specifically to *scheduled* maintenance. As NOAA's fleet becomes older, the incidence of *unscheduled* maintenance attributable to repairs, in our opinion, will increase, resulting in increased downtime, and decreased operational time. Related problems, such as out-of-stock parts and higher priorities of AOC maintenance staff, can compound these delays. As to the issue of the applicability of OMB Circular A-126 to NOAA's aircraft, the wording in the circular clearly and unmistakably indicates that such aircraft are covered. Circular A-126 (Section 4, Scope and Coverage) states: "This Circular applies to **all government-owned**, leased, chartered and rental aircraft and related services operated by Executive Agencies..." (emphasis added). Also, the circular (Section 3, Background) states that "...government-wide policy guidance with respect to the use of government aircraft should be clarified to restrict the operation of government aircraft to defined official purposes; ..." These official purposes include, among others, aeronautical research, science applications, and other such activities (Section 5b, Mission requirements). Regarding NOAA's submission of the results of its in-house cost study to the Congress and OMB, and the discussions with NOAA managers, NOAA is reminded that the study was not prepared in accordance with the requirements of A-76, as required by Circular A-126.

7. Retired Officer Pay and Health Care Contract Costs (\$1,106,097)

NOAA Response: NOAA states that retired officer pay and health care are included in Table 5, Appendix B, and should not be included again because that would be double counting, or in this case, triple counting (see page 33).

OIG Comments: We disagree with NOAA's statement. We call NOAA's attention to the report section that follows Table 5, entitled "Methodology for Assigning the Costs." Part A.4, "Exclusions," includes the subject costs. As the description of this part clearly indicates, these costs were excluded from our calculation of the overhead cost pool.

8. Comparison of OIG-Calculated Full Cost for the NOAA-Owned Aircraft with the Industry Standard

NOAA Response: NOAA replied that the industry standard costs for aircraft of similar make exclude daily use or standby time and modification costs required to meet NOAA missions and do not represent the hourly costs to meet NOAA missions (see page 33).



OIG Comments: We disagree with the NOAA response. Industry standard costs excluded daily use or standby time and modification costs required to meet NOAA missions for the same reasons we discussed earlier as to why our estimates of hourly contractor rates excluded them (See Appendix D, pages 37 and 38).

**OIG FINDING: NOAA SHOULD DISCONTINUE USING ITS LIGHT AIRCRAFT FOR INTERAGENCY REIMBURSABLE PROJECTS**

Recommendations

Recommendation #1

Discontinue all interagency reimbursable work related to NOAA-owned fixed-wing light aircraft and helicopters.

NOAA Response: NOAA disagrees with the recommendation to discontinue interagency reimbursable work involving light aircraft and helicopters. NOAA emphasizes the benefits derived by NOAA as well as the sharing agency. Cost sharing arrangements with other agencies provide an effective approach for meeting some of NOAA's data collection requirements. It is NOAA's policy to waive certain charges to other agencies for such projects. NOAA cites two examples, SHOALS and the Marine Mammal Monitoring Program, of reimbursable projects from which both NOAA and the sharing agency have benefitted from a cooperative arrangement.

OIG Comments: We reaffirm our recommendation. We agree that the shared use of resources to acquire data can be beneficial to both NOAA and the sharing agency. Accordingly, we have reduced full in-house costs in Table 3 for the allowable waived NOAA support costs of \$52,936 on the SHOALS project and \$1,042 on the marine mammal project. However, even after these adjustments for allowable waived costs, AOC only recovered, on average, 41 percent of the full in-house cost to operate the NOAA light aircraft in fiscal year 1996. Even more important, however, than the lack of full cost recovery on reimbursable projects is the fact that NOAA's light aircraft are 42 percent more costly to operate when compared with the private sector. Because of the higher relative expense to operate the NOAA light aircraft and the lack of full cost recovery, it is essential that NOAA discontinue all interagency reimbursable work related to its fixed-wing light aircraft and helicopters.

Recommendation #2

Complete current interagency reimbursable agreements in accordance with NOAA's stated policy of full cost recovery.

NOAA Response: NOAA disagrees with the recommendation to modify current reimbursable agreements for full cost recovery. NOAA's policy provides for recovery of full costs, both direct

and indirect in some situations, and allows waiving of certain costs when the project is beneficial to NOAA. Waiving certain charges to partnering agencies provides an effective approach for meeting some of NOAA's data collection needs.

OIG Comments: We reaffirm our recommendation. NOAA's waiver of costs accounted, on average, for only 6 percent of full in-house costs in fiscal year 1996. The critical point is that in fiscal year 1996, NOAA appropriations funded well over half the total cost of three of the four interagency reimbursable agreements included in our sample, resulting in a cost underrecovery of \$573,064 and the diversion of essential resources away from its core mission. Therefore, pending the discontinuance of interagency reimbursable work, NOAA should preserve funding for its core mission by completing current interagency reimbursable agreements in accordance with NOAA's stated policy of full cost recovery.

### Recommendation #3

Revise AOC's billing practices to be consistent with, and achieve, full cost recovery on all reimbursable agreements with outside sponsors.

NOAA Response: NOAA agrees that billing practices should be consistent with full cost recovery where applicable. However, NOAA disagrees that waiving some costs represents an underrecovery of funding when the sharing of resources provides benefits to NOAA. In addition, NOAA believes that waiving costs does not represent diversion of essential resources away from its core mission. The waiving of costs often allows data acquisition at reduced costs to both NOAA and the sharing agency.

OIG Comments: We reaffirm our recommendation. We believe that the waiving of costs in accordance with the criteria of the *NOAA Budget Handbook* is appropriate and we commend NOAA for undertaking cooperative projects to allow data acquisition at reduced costs to both NOAA and the sharing agency. However, we remind NOAA that total waived costs account for only 6 percent, on average, of full costs to operate its aircraft in fiscal year 1996. Cost underrecovery occurs on NOAA reimbursable projects primarily because of weaknesses in AOC's billing process, not because of waived costs. For example, AOC reported to GSA costs for operations overhead and insurance for all aircraft assigned to the four sampled reimbursable projects but omitted these costs on the billing statements. As discussed in this report, when NOAA underrecovers on interagency reimbursable projects, it diverts essential funding intended for its core mission to the missions of other agencies. Therefore, pending the discontinuance of interagency reimbursable work, NOAA's billing practices should be revised to be consistent with full cost recovery, regardless of waived costs.

Recommendation #4

As appropriate, immediately amend any current interagency reimbursable agreements not based on full cost recovery.

NOAA Response: NOAA disagrees with the recommendation to modify all current reimbursable agreements for full cost recovery. It is NOAA's policy to waive certain charges to the other agency for projects that allow NOAA to collect data of benefit to its programs.

OIG Comments: We reaffirm our recommendation. As discussed in the report and in our comments on NOAA's responses to our recommendations, underrecovery on NOAA reimbursable projects puts at risk projects associated with NOAA's core mission and diverts NOAA funding to the projects of other agencies. Until NOAA discontinues interagency reimbursable work, it is essential that NOAA immediately amend any current interagency reimbursable agreements not based on full cost recovery.

Recommendation #5

Seek reimbursement, beginning with fiscal year 1996 and where permitted by agreement, of the unrecovered full cost balances on all current reimbursable projects.

NOAA Response: NOAA disagrees with the recommendation to seek unrecovered full cost balances, from fiscal year 1996 to present, on all current reimbursable projects. Most current reimbursable projects provide access to data that are useful to NOAA. Sharing costs with other agencies, through the waiving of certain costs, to obtain data for NOAA benefit is consistent with NOAA policy.

OIG Comments: We reaffirm our recommendation for the same reasons cited in our report and in our comments on NOAA's responses to the previous recommendations regarding interagency reimbursable work.

Other Related Issue

NOAA raises the following other issue related to this finding. The page reference is to NOAA's complete response to the draft audit report, Appendix E.

- Billing Rates for the Twin Otter Aircraft

NOAA Response: NOAA asserts that the billing rates for NOAA's two Twin Otter aircraft were \$423 and \$511 per hour. The rate for one of the Twin Otters was reduced because it was damaged during maintenance and the cost to repair the damage was excluded (see page 30).

OIG Comments: We disagree with NOAA's assertion. The billing rates on the two Twin Otters are not different. Based on AOC's billing statements, the Twin Otters are billed at the same rate on the marine mammal project with the U.S. Navy and the hurricane response project with Interior, as follows:

<b>Table 10</b>				
<b>Reimbursable Billing Rates on NOAA's Twin Otter Aircraft in Fiscal Year 1996</b>				
<b>Project</b>	<b>Aircraft</b>	<b>Amount Billed</b>	<b>Number of Flight Hours</b>	<b>Hourly Rate Billed</b>
Marine Mammal	N48RF	\$21,887	46.9	\$467
Marine Mammal	N485RF	21,441	45.9	467
Hurricane Response	N48RF	18,941	37.1	511

The rates for the marine mammal project and the hurricane response project using the Twin Otters are different because more costs were waived for the marine mammal project. On the marine mammal project, AOC waived costs totaling \$8,837, whereas on the hurricane response project AOC waived costs totaling \$2,192. The rates are not different, as NOAA asserts, because one of the Twin Otters was damaged during maintenance and the cost to repair the damage was excluded.



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

APR 13 1998

MEMORANDUM FOR: George E. Ross  
Assistant Inspector General for Auditing

FROM: Andrew Moxam *Andrew Moxam*  
*for* Acting Chief Financial Officer/  
Chief Administrative Officer

SUBJECT: NOAA's Response to the OIG Draft Audit Report  
Light Aircraft Fleet Should Be Privatized  
NAD-9952-8-XXXX/February 1998

This is in response to your request for written comments on the subject OIG draft audit report. Overall, we cannot agree with most of the report's conclusions and recommendations. In part, it appears that our differences pertain to costs captured for the operation of the aircraft. Therefore, we differ in the percentage of contract cost -- i.e., we believe the aircraft operation costs are 32 percent less than contracting, while the report reflects that it costs 69 percent more. Since our differences have an impact on the funds issue, we cannot agree that there are \$12 million to be put to better use.

Our detailed comments are attached. It provides an overview of our response, along with a response to the report's recommendations and findings. We are willing to meet with you in an attempt to resolve our differences.

Attachment



NOAA Response to OIG DRAFT Report,  
"Light Aircraft Fleet Should Be Privatized,"  
No. NAD-9952-8-XXXX/February 1998

Overview of NOAA's Response

The primary recommendation in the draft report is that the National Oceanic and Atmospheric Administration (NOAA) sell its light, fixed-wing and rotary aircraft and contract for these services. This recommendation is based on estimates of NOAA's cost as compared to estimates of private sector contractors. Based on the information in the draft report and discussion with the Office of Inspector General (OIG) prior to the release of the draft report and discussions with contractors, NOAA believes that data in the draft report were incomplete. There are three areas of cost which appear incorrect. These are the costs associated with overhead, daily use or standby time, and modification and demodification of the aircraft necessary to meet NOAA's project requirements.

To assist NOAA in reviewing the contractor costs, a PhD economist with extensive experience with the Federal Aviation Administration (FAA) was used. This consultant believes that contractor costs included in the draft report include only a portion of the costs that would be incurred to accomplish NOAA missions. NOAA and its expert consultant believe significantly different conclusions would have been derived had the appropriate costs been included. The draft report also does not recognize the benefit to NOAA of reimbursable projects.

In determining the full costs for NOAA's aircraft, overhead costs were incorrectly double counted, leading to an overstatement of NOAA's costs per flight hour. For example, the draft report included future retired pay for commissioned officers in the indirect costs captured from FIMA and then added these costs again as overhead costs. Furthermore, the contractor cost estimates exclude significant items which would be needed to fulfill mission requirements. These omissions include aircraft and crew daily use and standby time and modifications required to incorporate mission support equipment into a leased platform. Standby or daily use costs would be incurred because the aircraft would be unavailable for other uses due to environmental or other factors that did not meet mission or safety parameters.

Frequently, NOAA aircraft must be deployed away from home base near the project site available for project work. To fly and accomplish the project, environmental conditions such as cloud cover, sea state, stage of the tide, and sun angle must meet the mission parameters of the principal investigator and environmental conditions and other factors must meet safety parameters. The aircraft would also be unavailable for other uses during periods of instrumentation installation or removal. Standby time caused by bad weather, reinstrumentation and other factors can, for some missions, be a significant percentage of the time allotted for the project. A good example is the 16 days of standby experienced during a two-month long summer project for the National Ocean Service (NOS). Private contractors would charge NOAA for standby periods but the draft report excluded such costs in the analysis. Also excluded were the costs of adding, and removing in some post-project demobilizations, the specialized aircraft equipment and modifications necessary to support NOAA's mission. A good example is the NOAA Twin Otter which provides support to NOAA's protected species programs. Many modifications have been made to the Twin Otter including an extended nose with instrumentation shelf and downward-looking camera port, sensor access panels which allow simultaneous operation of sea surface temperature sensors, a gyro-stabilized camera mount with 35 mm camera and video camera, an aft window for photography of marine mammals, color weather radar, an instrument port on top of the aircraft for upward-looking instruments, a quick-release cabin door for unobstructed photography, and more.

The omission of these cumulative costs results in low projected hourly rates for using commercial aircraft to meet NOAA's requirements. The cost per hour of flight time shown for NOAA aircraft includes the cost associated with standby time and for incorporating mission support equipment into the aircraft platform. Also, one aircraft included in the analysis was damaged by a contractor in Fiscal Year 1996 while undergoing maintenance. This led to a reduction in flight hours and subsequently higher than normal costs per hour of flight. For the purposes of this analysis, the use of hourly costs for a sister aircraft is a more accurate representation of the typical costs for this aircraft. Removing the double counted overhead costs from NOAA's costs, adjusting to account for damage caused by a contractor to one NOAA aircraft, and including contractor

costs for standby and daily use time and aircraft modifications provides a level comparison which shows in-house aircraft as the cost-effective solution to meeting NOAA's data acquisition needs. After incorporating these corrections, NOAA aircraft operation costs 32 percent less than contractors rather than 69 percent more as reported by the OIG. A comparison of NOAA costs and contractor costs for light aircraft to meet NOAA mission requirements in the same format used in the draft report is shown in the graph titled "Comparison of NOAA Hourly Costs Versus Contract Hourly Costs." A breakout of the components which comprise the contract hourly costs is provided in the graph titled "Projected Contract Costs."

NOAA disagrees with the recommendation to discontinue interagency reimbursable work involving light aircraft and helicopters because of the benefits derived by NOAA as well as the sharing agency. Cost sharing arrangements with other agencies provide an effective approach for meeting some of NOAA's data collection requirements. It is NOAA's policy to waive certain charges to other agencies for such projects. Furthermore, the shared use of resources to acquire data beneficial to NOAA and the sharing agency is consistent with the National Performance Review and the Administration's efforts to ensure that all government resources are used in the most efficient manner possible.

Two examples of reimbursable projects from which both NOAA and the sharing agency have benefitted from a cooperative arrangement are the Scanning Hydrographic Operational Lidar Survey System (SHOALS), and the Marine Mammal Monitoring Program. The cooperative agreement between NOAA and the U.S. Army Corps of Engineers (USACE) provides for the use of a NOAA Bell 212 helicopter and flight crew in support of field testing and demonstration and characterization of the SHOALS program. NOS has been involved in the development of airborne laser bathymetry technology since 1975 and has worked with USACE in the design, development, aircraft integration and testing of the SHOALS system. NOS has benefitted from this new survey technology through more cost-effective data collection and enhanced nautical charting capabilities.

NOAA and the U.S. Department of Navy have a cooperative agreement for the use of two Twin Otters as survey platforms to conduct marine mammal surveys. The National Marine Fisheries Service



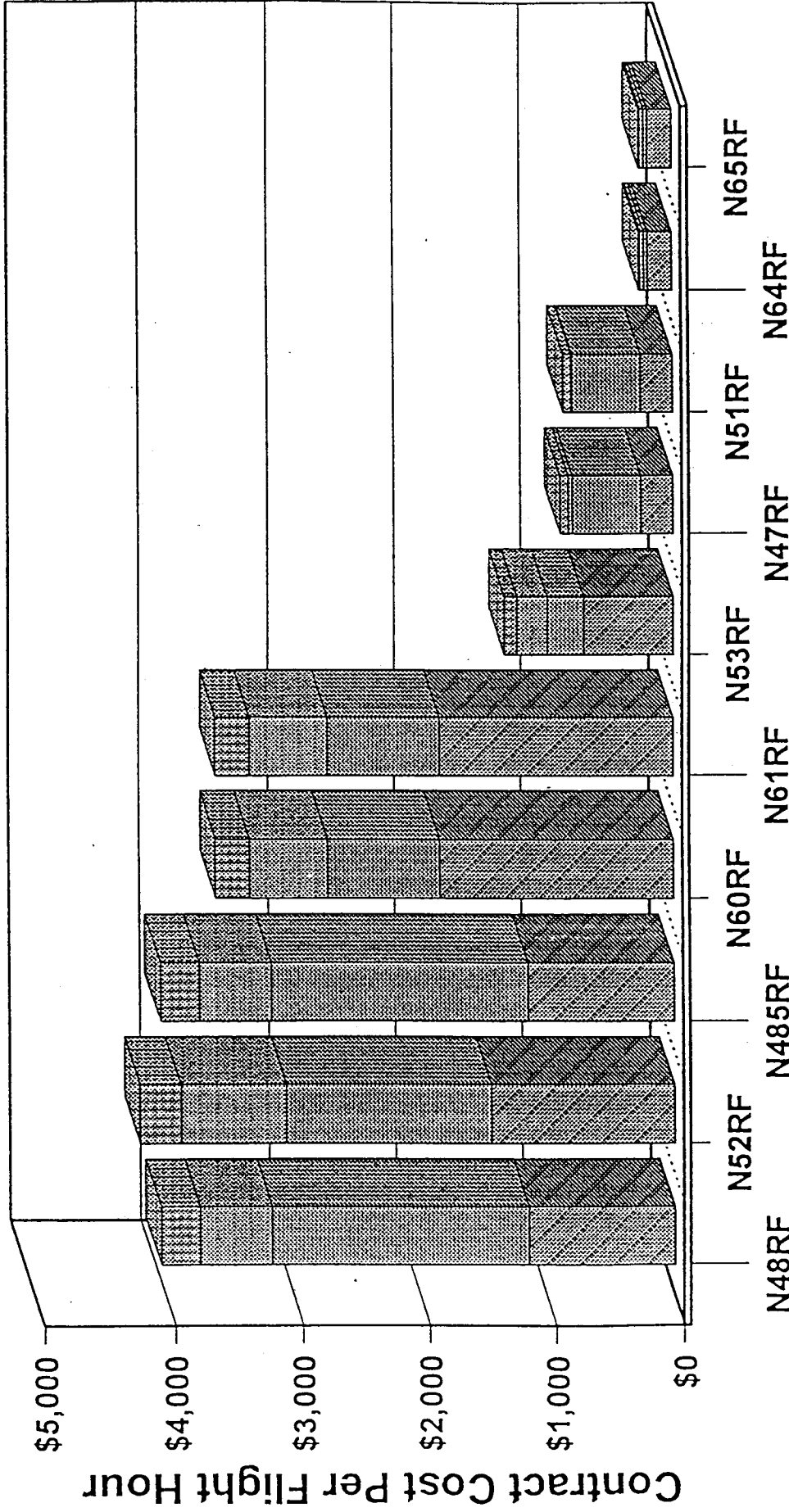
Comparison of NOAA Hourly Costs Verses Contract Hourly Costs







Aircraft Platforms

NOAA Operating \$/hr
  Contract Comparable Operating \$/hr

# Projected Contract Costs



Aircraft Platforms to be Contracted

-  Contract Fee
-  Daily / Stand-by Costs
-  Modification Costs
-  Flight Hour Costs

(NMFS) has the responsibility to assure that acoustic testing by the Navy does not pose a risk to marine mammals. This cooperative agreement also helps provide data to NMFS on the seasonal and geographic movements of cetaceans in the Gulf of Mexico, which is required by the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.

NOAA light aircraft are critical to NOAA's missions. In most instances, these aircraft have been modified or equipped to meet specific operational requirements. Examples of NOAA missions which require uniquely equipped aircraft include: snow surveys, which provide information not available elsewhere critical to predicting the potential of spring flooding such as the Northern Red River floods of 1997; coastal photogrammetry; measurements of atmospheric chemistry; coastal hydrography; and ship-supported marine mammal observations using a helicopter. In each of these examples, other than NOAA aircraft, there are no aircraft so outfitted or equipped. Aerial mapping is a dynamic discipline which changes with technological advances. NOAA programs are constantly striving to improve the state-of-the-art and to transition these improvements into broader applications. One outstanding success is the development of GPS-controlled photogrammetry. Research and development efforts of this kind require easy access to the platform and close collaboration with the aircrew. Extensive modification is required in some cases. These modifications require FAA certification. The time to obtain FAA approval varies depending on the degree of modification and the operational protocol of the aircraft. Several months can be involved.

Though not mentioned in the draft report, but of great concern to NOAA, is aircraft safety. The NOAA Aircraft Operations Center (AOC) was formed in the early 1980s to enhance safety. Prior to the formation of AOC, some NOAA employees were killed using chartered aircraft. Since the formation of AOC, NOAA's aircraft have not experienced a serious injury or accident. The success of this safety program is impressive when the operation of the aircraft is considered. NOAA aircraft operate in some of the world's roughest terrain (i.e., mountain passages for the snow surveys and arctic operations for marine mammal surveys) and in some of the most hostile meteorological conditions (i.e., research in severe storms and hurricanes). The success of the NOAA safety program is contrasted with that of the private sector

general aviation operators. This is the community from which NOAA would obtain contract services. During 1995 and 1996, this community reported nearly 4,000 accidents. In 1995, the U.S. Department of Interior, one of the organizations cited in the draft report as a source of contract cost data, lost 14 personnel in contracted aircraft accidents. The only loss-time incident for NOAA was damage done by a contractor during scheduled maintenance for one aircraft.

Because the draft report contained incomplete data, excluded costs which should have been included, and did not take into account the benefits derived by NOAA and its partners for Federal cooperative projects, NOAA disagrees with most of the conclusions and recommendations in the report. NOAA's response to each recommendation in the draft report and specific comments on many sections of the draft report follow:

#### Response to Specific Recommendations Regarding Aircraft Support

1. Retain the two Lockheed WP-3D Orions and the Gulfstream G-IV SP jet.

NOAA concurs with the recommendation to retain the Lockheed WP-3D Orions and the Gulfstream G-IV SP jet.

2. Discontinue operating the eight fixed-wing light aircraft and the three helicopters and release them, in accordance with OMB Circular A-126, along with the related spare parts.

NOAA disagrees with this recommendation. NOAA believes this recommendation is based on an incomplete analysis which results in an incorrect conclusion that commercial alternatives are less costly. Furthermore, based on its analysis, NOAA believes that its aircraft operations are cost effective and are, in fact, less expensive than private sector aircraft operating costs. Immediate disposal of NOAA's aircraft would pose an unacceptable level of risk to NOAA's ability to continue uninterrupted data collection in support of its scientific and survey missions and would increase the risk of accidents that could affect the safety of NOAA program personnel.

3. Establish written NOAA policy that program offices are to rely on the private sector, when economically advantageous, to

provide aircraft services support.

NOAA agrees that the program offices should rely on the private sector to provide aircraft support when it is economically advantageous to do so. NOAA disagrees that another written policy is needed since existing documents adequately address the procedures for obtaining aircraft support services efficiently and economically. NOAA Administrative Order 216-103 describes the NOAA policy for the management and operation of NOAA-controlled aircraft, including contracted platforms. The procedures for obtaining aircraft services in support of NOAA programs are described in detail. NOAA believes that this document provides NOAA program managers appropriate guidance for obtaining aircraft support services efficiently and economically. NOAA believes that it is in conformance with all current NOAA and Administration policies. NOAA does use contracted aircraft support to meet some needs where economically or operationally beneficial.

4. Transfer AOC base funding for aircraft support to NOAA's line organizations, and implement procedures to ensure that line organizations procure aircraft support from the most cost-effective private sector sources.

NOAA disagrees with the recommendation to transfer base funding to the line offices. NOAA's Aircraft Allocation Council (NAAC) is responsible for establishing the relative priorities for the use of NOAA aircraft and the use of leased aircraft. Through the aircraft allocation process, the line organizations manage use of funding for aircraft support. The process ensures that NOAA's data collection efforts are correctly prioritized and that the mix of NOAA and contract platforms provide the best use of government funds. Also, a significant portion of the funds used for light aircraft are presently included in line office funding and are transferred to AOC on an annual basis to meet specific project requirements. Transferring the funds to the line offices would require that each line organization set up a management structure to oversee the allocation of funds to acquire flight time, develop procurement documents, and to provide the contract oversight. AOC already provides this efficiently as a centralized function dedicated to supporting all NOAA programs. Of equal importance is the issue of safety. AOC has as a principal mandate to maintain the planes in a safe manner and to ensure that the crew are properly trained. A distribution of the account could compromise this level of safety.

5. Pending release of aircraft and transfer of funding, report the full cost of each aircraft in accordance with Federal accounting guidelines.

NOAA agrees that the full cost of operation of each aircraft should be reported in accordance with Federal accounting guidelines. NOAA believes that we are in compliance and will review our data reports to ensure that we correct any identified deviations from the standards.

#### Funds to Be Put to Better Use

NOAA does not agree that up to \$12 million of government funds can be put to better use by implementing OIG recommendations. Removing the double counted overhead costs from NOAA's cost, adjusting to account for damage caused by a contractor to one NOAA aircraft, and including contractor costs for standby and daily use time and aircraft modifications provides a level comparison which shows in-house aircraft as the cost-effective solution to meeting NOAA's data acquisition needs. After incorporating these corrections, NOAA aircraft operation costs 32 percent less than contractors rather than 69 percent more as reported by the OIG.

## Response to Specific Recommendations Regarding Reimbursable Projects

1. Discontinue all interagency reimbursable work related to NOAA owned fixed-wing light aircraft and helicopters.

NOAA disagrees with the recommendation to discontinue interagency reimbursable work involving light aircraft and helicopters because of the benefit derived by NOAA as well as the sharing agency. Cost sharing arrangements with other agencies provide an effective approach for meeting some of NOAA's data collection requirements. It is NOAA's policy to waive certain charges to other agencies for such projects. Furthermore, the shared use of resources to acquire data beneficial to NOAA and the sharing agency is consistent with the National Performance Review and the Administration's efforts to ensure that all government resources are used in the most efficient manner possible.

Two examples of reimbursable projects from which both NOAA and the sharing agency have benefitted from a cooperative arrangement are the Scanning Hydrographic Operational Lidar Survey System (SHOALS) and the Marine Mammal Monitoring Program. The cooperative agreement between NOAA and the U.S. Army Corps of Engineers (USACE) provides for the use of a NOAA Bell 212 helicopter and flight crew in support of field testing and demonstration and characterization of the SHOALS program. The National Ocean Service (NOS) has been involved in the development of airborne laser bathymetry technology since 1975. NOS has worked with USACE in the design, development, aircraft integration and testing of the SHOALS system. NOS has benefitted from this new survey technology through more cost-effective data collection and enhanced nautical charting capabilities.

NOAA and the U.S. Department of Navy have a cooperative agreement for the use of two Twin Otters as survey platforms to conduct marine mammal surveys. The National Marine Fisheries Service (NMFS) has the responsibility to assure that acoustic testing by the Navy does not pose a risk to marine mammals. This cooperative agreement also helps provide data to NMFS on the seasonal and geographic movements of cetaceans in the Gulf of Mexico, which is required by the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.

2. Complete current interagency reimbursable agreements in

accordance with NOAA's stated policy of full cost recovery.

NOAA disagrees with the recommendation to modify current reimbursable agreements for full cost recovery. NOAA's policy provides for recovery of full costs, both direct and indirect in some situations, and allows waiving of certain costs when the project is beneficial to NOAA. Much of the data obtained through interagency efforts benefit NOAA programs, and would need to be collected regardless of the involvement of other agencies. Waiving certain charges to partnering agencies provides an effective approach for meeting some of NOAA's data collection needs.

3. Revise AOC's billing practices to be consistent with, and achieve, full cost recovery on all reimbursable agreements with outside sponsors.

NOAA agrees that billing practices should be consistent with full cost recovery where applicable. NOAA disagrees that waiving of some costs represents an under recovery of funding when the sharing of resources provides benefits to NOAA. Nor does waiving costs represent diversion of essential resources away from NOAA's core mission. The waiving of costs often allows data acquisition at reduced costs to both NOAA and the sharing agency. In those instances, the waiving of fees is based on the need of a NOAA program for access to the data being collected. Without these arrangements, the cost of acquiring the data would increase for both NOAA and the sharing agency.

4. Immediately amend any current interagency reimbursable agreements not based on full cost recovery.

NOAA disagrees with the recommendation to modify all current reimbursable agreements for full cost recovery. It is NOAA's policy to waive certain charges to the other agency for projects that allow NOAA to collect data of benefit to NOAA programs.

5. Seek reimbursement, beginning with fiscal year 1996 and where permitted by agreement, of the unrecovered full cost balances on all current reimbursable projects.

NOAA disagrees with the recommendation to seek unrecovered full cost balances, from FY 1996 to present, on all current reimbursable projects. Most current reimbursable projects



provide access to data that are useful to NOAA. Sharing costs with other agencies through the waiving of certain costs, to obtain data for NOAA benefit, is consistent with NOAA policy.

#### Specific Comments on IG Study

page ii, Executive Summary

The draft report states: "Our audit found that the full in-house cost to operate NOAA's fleet of 8 light aircraft and 2 Bell helicopters averaged 69 percent more than the cost to operate similar aircraft available in the private sector. As a result, in-house inefficiencies during fiscal year 1996 cost NOAA and interagency programs an additional \$2 million, or 2,086 flight hours, than if they had used the private sector. Implementation of our recommendations will put up to \$12 million of government funds to better use. These funds will involve cost avoidance of \$4 million through program procurement of light aircraft services from the most cost-effective sources over a two-year period, and up to \$8 million from the sale of NOAA's 8 light aircraft, 2 Bell helicopters, and its inactive Hughes 369/500D helicopter (see page 4)."

The audit finding was based on overstatement of NOAA costs due to double counting of overhead and understating contractor costs due to exclusions of standby time and aircraft modifications required to meet NOAA mission requirements. For example, the draft report included future retired pay for commissioned officers in the indirect costs captured from FIMA and then added these costs again as overhead costs. Furthermore, the contractor cost estimates exclude significant items which would be needed to fulfill mission requirements. These omissions include aircraft and crew daily use and standby time and modifications required to incorporate mission support equipment into a leased platform. Standby or daily use costs would be incurred because the aircraft would be unavailable for other uses due to environmental or other factors that did not meet mission or safety parameters. Frequently, NOAA aircraft must be deployed away from home base near the project site available for project work. To fly and accomplish the project, environmental conditions such as cloud cover, sea state, stage of the tide, and sun angle must meet the mission parameters of the principal investigator and environmental conditions and other factors must meet safety parameters. The aircraft would also be unavailable for other

uses during periods of instrumentation installation or removal. Standby time caused by bad weather, reinstrumentation and other factors can, for some missions, be a significant percentage of the time allotted for the project. A good example is the 16 days of standby experienced during a two-month long summer project for the National Ocean Service. Private contractors would charge NOAA for standby periods but the draft report excluded such costs in the analysis. Also excluded were the costs of adding, and removing in some post project demobilizations, the specialized aircraft equipment and modifications necessary to support NOAA's mission. A good example is the NOAA Twin Otter which provides support to NOAA protected species programs. Many modifications have been made to the Twin Otter including an extended nose with instrumentation shelf and downward-looking camera port, sensor access panels which allow simultaneous operation of sea surface temperature sensors, a gyro-stabilized camera mount with 35 mm camera and video camera, an aft window for photography of marine mammals, color weather radar, an instrument port on top of the aircraft for upward-looking instruments, a quick-release cabin door for unobstructed photography and more. NOAA does not agree that up to \$12 million of Government funds can be put to better use by implementing the OIG recommendations. Exclusion of double counted NOAA overhead costs and inclusion of contractor costs that would be incurred to meet NOAA mission requirements shows NOAA costs to be less than contractor costs by 32 percent. Therefore, \$4 million would not be saved by use of contractor aircraft. Also, if NOAA aircraft were sold, the proceeds would go to the general treasury, not to NOAA, requiring NOAA to secure additional funding to acquire contract aircraft support.

The draft report states: "As part of our review of the full in-house cost to the government to operate the NOAA-owned aircraft, we also found that the AOC is not recovering the full cost of work that it performs under reimbursable agreements with outside government agencies. As a result, in fiscal year 1996, NOAA appropriations funded well over half the cost of most sampled interagency reimbursable agreements, resulting in a cost under recovery of \$777,949 and the diverting of essential resources away from its core mission (see page 14)."

Most of the reimbursable agreements related to NOAA aircraft operations involve collection of data beneficial to NOAA. Two examples of reimbursable projects from which both NOAA and the sharing agency have benefitted from a cooperative arrangement are

the Scanning Hydrographic Operational Lidar Survey System (SHOALS), and the Marine Mammal Monitoring Program. The cooperative agreement between NOAA and the U.S. Army Corps of Engineers (USACE) provides for the use of a NOAA Bell 212 helicopter and flight crew in support of field testing and demonstration and characterization of the SHOALS program. The National Ocean Service (NOS) has been involved in the development of airborne laser bathymetry technology since 1975. NOS has worked with USACE in the design, development, aircraft integration and testing of the SHOALS system and has benefitted from this new survey technology through more cost-effective data collection and enhanced nautical charting capabilities.

NOAA and the U. S. Department of Navy have a cooperative agreement for the use of two Twin Otters as survey platforms to conduct marine mammal surveys. The National Marine Fisheries Service has the responsibility to assure that acoustic testing by the Navy does not pose a risk to marine mammals. This cooperative agreement also helps provide data to NMFS on the seasonal and geographic movements of cetaceans in the Gulf of Mexico, which is required by the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.

NOAA policy is to waive certain costs on these cooperative arrangements because both NOAA and the sharing agency benefit and that provides an effective approach for meeting some of NOAA's data collection needs.

The draft report states: "Additional studies of operational efficiencies were commissioned by the General Services Administration (GSA), which coordinates federal agency aircraft management and cost reporting. These studies reported opportunities to reduce costs by \$92 million annually if most agencies consolidated their operations and entered into sharing arrangements."

NOAA's policy of cooperative arrangements and cost sharing is aligned with the policies implied in the above quote from the draft report. The cost under recovery implied in the draft report is overstated and includes significant amounts that represent depreciation and insurance which are appropriate for a cost comparison but are not real spending against NOAA appropriations. The data collected for most of the reimbursable arrangements is beneficial to NOAA and used to support core NOAA

missions.

NOAA's position on each recommendation in the draft report is provided elsewhere in our response.

Page 2

The Draft Report states, "Purpose of our audit - (2) determine private contractor/other government agency cost to operate the same or comparable aircraft."

The contractor costs in the draft report appear to be hourly costs that a contractor would charge for an aircraft of similar make for transporting passengers or freight. However, these costs do not reflect the amount a contractor would charge NOAA for an aircraft capable of meeting NOAA's mission requirements. A contractor would incur additional costs for the following and would pass these costs on to NOAA:

- Aircraft modification costs required to perform NOAA missions, FAA certification costs and costs for out of service time due to reinstrumentation.
- Daily use or standby costs caused by mission requirements, deployment to remote locations for long periods of time (up to 75 days), and environmental conditions unsuitable for meeting mission or safety parameters such as sun angle, stage of tide and sea state.
- Additional crewing costs - NOAA missions routinely require two pilots for operational and safety reasons.

Contractors contacted by NOAA and our consultant indicated they would change their billing practices for aircraft contracted to meet NOAA missions. To cover their costs for the aircraft when it was not flying (standby time) but unavailable for other purposes due to environmental or other conditions that did not meet mission parameters or for installing or removing instrumentation, they would charge a daily use cost. The aircraft could not be reconfigured for other uses during the short periods of time in standby where the aircraft would have to be available on very short notice for project needs. This daily use charge would cover basic crew salary, insurance, depreciation and profit. The hourly rate would be adjusted to cover only maintenance costs. Additional costs would be incurred for fuel and travel.

Page 4

The draft report states that, in Fiscal Year 1996, the full in-house costs to operate NOAA's 10 light aircraft average 69 percent more than the costs of similar aircraft in the private sector. The report also states that \$2 million in operating costs would have been saved if NOAA had used the private sector.

NOAA believes the above statement is incorrect as explained in our response to a similar statement in the draft report Executive Summary.

Exclusion of double counted NOAA overhead costs and inclusion of contractor costs that would be incurred to meet NOAA mission requirements shows NOAA costs to be less than contractor costs. Therefore, \$2 million would not have been saved by use of contractor aircraft. Also included in the \$2 million savings claimed are depreciation and insurance costs which may be appropriate for a cost comparison but which are not appropriated funds available for spending. Even using the incorrect cost differential stated in the draft report, \$2 million in operating costs would not have been available to purchase 2,086 additional hours.

Page 5

The draft report states: "Our analysis of the overhead costs which AOC reported to GSA indicated a basic AOC misunderstanding of the GSA definitions of overhead, resulting in overhead misclassifications and omissions. For example, in computing operations overhead, AOC included the salaries of fabrication shop personnel. However, the fabrication shop serves AOC aircraft, so we believe the fabrication shop salaries are direct costs for these aircraft, not operations overhead. We also noted that in computing administrative overhead, AOC did not account for costs associated with the support provided by ONCO and the CPC. The definition of administrative overhead in GSA's Guide indicates that the ONCO and CPC support costs were legitimate and should have been included."

NOAA's analysis of the overhead included in the draft report indicates a misinterpretation of NOAA's Financial Management System (FIMA). FIMA cost reports include both direct costs and

indirect costs (overhead) for particular tasks or FMC's. The indirect costs include such items as future retired pay for commissioned officers and line or program office support to a subordinate office. The draft report captured these overhead costs from FIMA totals and then added them again as overhead costs.

For example, Table 5 on page 1 of Appendix B in the draft report includes \$3,123,790 for total obligation for AOC officers. The FIMA report which totals \$3,123,700 includes obligations of direct costs and includes indirect costs. Included in this total is the indirect cost of \$485,606, under object class 6000, for future retired pay for commissioned officers (FRPCO). The next line in Table 5 adds \$487,110 for unfunded pension fund liability which is future retired pay for commissioned officers.

Also, the definition of administrative overhead in the GSA Guide provides considerable flexibility in charging administrative overhead. The GSA Guide states "For purposes of recovering the costs of operations, agencies should exercise their own judgement as to the extent to which aircraft users should bear the administrative overhead costs."

Page 6

The draft report states "We then compared NOAA's full cost per flight hour for each of its eight light aircraft and two Bell helicopters with rates charged by private-sector companies using similar aircraft. Commercial rates were obtained directly from the private-sector companies or through the Department of the Interior's Office of Aircraft Services (OAS). OAS enters into aircraft service contracts with private-sector companies for bureaus within the Interior and other federal agencies. For each platform we obtained several commercial rates, if available, and calculated an average rate for comparison."

Per discussions with the OAS, most of their contract aircraft operations are for carrying passengers or freight and do not include collecting scientific data or require aircraft modifications. Significant errors were introduced into the draft report because, although the commercial rates acquired were hourly rates for aircraft of similar type, the rates do not account for the stand-by time typically required for NOAA mission accomplishment due to weather and other environmental factors.

Furthermore, the hourly rates do not reflect the cost of modifications to aircraft to meet NOAA mission needs. The approach used in the report to determine NOAA's hourly rates includes these costs. To assist in collecting and analyzing information regarding contractor costs to meet NOAA mission requirements, NOAA used the services of an analyst with a Doctorate degree in Economics who has held various positions in cost and economic analysis including Deputy Director, Office of Aviation Policy at the Federal Aviation Administration. Other personnel assisting NOAA included an individual with a Master's Degree in Systems Acquisition Management and more than 25 years in cost estimating and analyses for a wide range of systems.

Page 7

The draft report states: "On average, NOAA's eight light fixed-wing aircraft and two Bell helicopters were 69 percent more expensive to operate when compared with commercial hourly rates. Full cost hourly rates significantly exceeded commercial rates for the eight light fixed-wing aircraft. The full cost rates calculated for the two Bell helicopters, used exclusively for interagency reimbursable work, were price competitive with the private sector. However, the focus must not be on the cost effectiveness rates of the individual light aircraft but on their average rate as a group because in the group *full costs* - direct and indirect - are taken into account. Also, OMB Circular A-76 states that the general policy of the government is to rely on commercial sources to supply the product and services the government needs. Table No. 1 page 8, shows the results of our comparisons of the full cost of NOAA and private contractor hourly rates for the group of 10 light aircraft."

Excluding double counting of NOAA overhead costs, including standby and aircraft modification costs for contractors and correcting the cost of NOAA's Twin Otter N48RF to account for down time caused by a contractor conducting maintenance on the aircraft, Table 1 below shows the costs of NOAA and private contractor rates to accomplish NOAA's missions for the light aircraft.

**TABLE 1**

**Comparison of NOAA Full Economic Costs For Light Aircraft and Helicopters  
Verses Full Costs Using Private Contract Aircraft**

Aircraft	Hourly Costs			Percent NOAA's Full Economic Cost Over / Under Contract Cost
	NOAA's Full Economic Cost	Projected Contract Costs	NOAA's Cost Over (Under) Contract Cost	
N53RF / Gulf Turbo Commander	\$1,148	\$1,322	(\$174)	-13%
N64RF / Lake Renegade	\$294	\$260	\$34	13%
N65RF / Lake Renegade	\$230	\$260	(\$30)	-12%
<b>N61RF / Bell 212 Helicopter</b>	<b>\$1,501</b>	<b>\$3,605</b>	<b>(\$2,104)</b>	<b>-58%</b>
<b>N60RF / Bell 212 Helicopter</b>	<b>\$1,710</b>	<b>\$3,605</b>	<b>(\$1,895)</b>	<b>-53%</b>
N47RF / Aero Commander Shrike	\$759	\$882	(\$123)	-14%
N51RF / Aero Commander Shrike	\$530	\$855	(\$325)	-38%
N52RF / Cessna Citation II	\$2,453	\$4,194	(\$1,741)	-42%
<b>N485RF / de Haviland Twin Otter</b>	<b>\$1,841</b>	<b>\$4,036</b>	<b>(\$2,195)</b>	<b>-54%</b>
<b>N48RF / de Haviland Twin Otter</b>	<b>\$1,841</b>	<b>\$4,036</b>	<b>(\$2,195)</b>	<b>-54%</b>
<b>Average NOAA Full Economic Cost Over / Under Contract Cost</b>				<b>-32%</b>

Note 1: The economic costs include both direct and indirect costs such as depreciation and other overhead, and other estimated amounts for comparison purposes, such as self insurance.

Note 2: Projected contract cost estimates include standby time and modification costs necessary to meet NOAA mission requirements.

Note 3: Due to limited time NOAA was unable to identify sources to provide all aircraft required to support NOAA's mission requirements. The aircraft identified in bold include quoted costs for supporting NOAA's mission requirements. The contract costs for remaining aircraft were determined based on aircraft corporate charter operations.

Note 4: Cost information for the Lake Renegade were based costs in the draft report adjusted to account for stand-by time and equipment modifications.

Note 5: Travel and per diem expenses are not included in the contract costs. NOAA's cost include full travel and per diem expenses.

Note 6: Fuel costs are variable and are not included in contractor costs for the aircraft shown in bold. NOAA's cost include fuel costs.



A breakout of the components of the projected contract costs is provided in Table 2.

Aircraft	Break Down of Projected Contract Cost									
	N48RF	N52RF	N485R	N60RF	N61RF	N53RF	N47RF	N51RF	N64RF	N65RF
Flight Hour Costs	\$1,142	\$1,436	\$1,142	\$1,836	\$1,836	\$700	\$250	\$250	\$190	\$190
Daily/Standby Costs	\$2,031	\$1,622	\$2,031	\$887	\$887	\$284	\$535	\$535	\$29	\$29
Modification Costs	\$564	\$825	\$564	\$615	\$615	\$240	\$32	\$7	\$26	\$26
Contract Fee	\$299	\$311	\$299	\$267	\$267	\$98	\$65	\$63	\$15	\$15
<b>Total Hourly Cost Per Flight Hour</b>	<b>\$4,036</b>	<b>\$4,194</b>	<b>\$4,036</b>	<b>\$3,605</b>	<b>\$3,605</b>	<b>\$1,322</b>	<b>\$882</b>	<b>\$855</b>	<b>\$260</b>	<b>\$260</b>

The draft report implies that NOAA's Bell helicopter rates only appear to be cost competitive because of depreciation methodologies. More specifically, the draft report says that the industry approach is to depreciate helicopters over 8 years to gain a tax advantage, while NOAA is depreciating NOAA helicopters over 18 years making NOAA's costs appear lower. However, NOAA's helicopters are 12 years old so if the industry approach was used, NOAA's cost would actually decrease because the helicopters would be fully depreciated.

The draft report states: "We also found that private-sector companies are capable and available to support NOAA missions. For example, the National Marine Fisheries Service (NMFS) in La Jolla, California, uses a private sector contractor to provide aircraft services in support of mammal surveys. When we compared the AOC's cost per hour to that for the private sector contractor, we found that it was more cost-effective for NOAA to use the contractor.

To perform mammal surveys, the AOC uses both of its Twin Otter aircraft (N48RF and N485RF) at a cost per hour of \$3,616 and

\$1,969, respectively. In contrast, mammal survey work contracted out by the NMFS in La Jolla cost \$351 per hour. This comparison of mammal survey work clearly demonstrates NOAA's inefficiencies in providing aircraft services."

The Twin Otter N48RF was damaged by a contractor during maintenance in Fiscal Year 1996 and subsequently operated for significantly less hours than typical as shown below.

Table 3 - Twin Otter N48RF Flight Hours

Fiscal Year	Flight Hours
1990	407.3
1991	650.9
1992	688.5
1993	343.2
1994	524.1
1995	368.8
1996	227.8
1997	514.7
	<b>AVERAGE 465.7</b>

The reduced hours in Fiscal Year 1996 significantly increased the hourly operations cost. The more typical operating cost are similar to Twin Otter N485RF.

The comparison of the costs for contracted marine mammal work with NOAA's Twin Otter costs is an inappropriate comparison. The aircraft chartered for \$351 per hour was a Partenavia which is limited to a 4-hour flight and a range of 550 miles. When fully loaded with observers, offshore rafts and survival equipment, this range is reduced. Many NMFS marine mammal projects require up to 6-hour flights and a range of 850 miles. For example, a typical research mission requires transits of 100 nautical miles to survey areas followed by at least 600 nautical miles of survey lines and a transit of 100 nautical miles to an airport. Likewise, in remote locations such as Alaska, survey operations

require long transits with 400 to 500 nautical miles of survey lines and at least an hour of fuel reserve. The Partenavia would not be able to support most NMFS marine mammal projects.

The turbine-powered Twin Otter has over a 20-year track record of reliable operations in remote areas throughout the world. Maintenance service and parts are available throughout North America. In contrast, the Italian-manufactured Partenavia is a light twin engine piston powered aircraft which is a questionable platform for extended open-water surveys. The Twin Otter's reliability is based on its turbine engines, which are rated to fly 5000 hours between overhauls, versus the 1600-hour limitation on the piston engines of the Partenavia. The Twin Otter routinely operates between 100 and 200 nautical miles offshore and provides a safer platform than the Partenavia.

Also, the mission performed by the Partenavia is not similar to the missions performed by NMFS Twin Otter users. The Partenavia offers full trackline visibility, as does the Twin Otter. Scientific observations through the bubble window and crew rotation in the Partenavia is hindered due to its small, confined cabin, which contributes to discomfort, loss of concentration, fatigue, neck and back pain. The privacy of a relief tube for crew and observers is available in the Twin Otter and not in a Partenavia.

The Twin Otter has more access panels allowing the simultaneous operation of sea surface temperature sensors, a gyro-stabilized camera mount with 35 mm camera and video camera capabilities. The Partenavia, with only one down-looking port, does not have this capability. The NOAA Twin Otter is equipped with a removable aft window for photography of marine animals while circling the investigated species. The Partenavia does not have this capability. The NMFS line transect historical data for many projects (collected since 1988) using the Twin Otter is based on sight ability calculations developed for use on a Twin Otter aircraft. If another platform were used for these projects, the historical data would have to be recalibrated to provide a statistically reliable database. This would necessitate rewriting the statistical model, recalibrating the entire database and several intercomparison flights.

The draft report states: "Although several factors are responsible for the higher cost to operate the NOAA aircraft as compared with the private sector, the most significant is NOAA's failure to achieve certain economies of scale in its in-house aircraft operations. NOAA's operating costs include significantly large support costs incurred by ONCO and CPC, as well as by AOC. Private contractors of light aircraft generally do not incur such significantly large overhead costs and, in combination with their marketing efforts to increase the number of billable hours, are able to lower their hourly charge for aircraft services."

Economies of scale are attainable for routine commercial activities such as carrying passengers or freight. However NOAA projects require aircraft specifically modified to meet NOAA missions and require considerable aircraft standby time to accommodate weather and other environmental factors. Contractor aircraft fully configured to meet project requirements would need to be available near the project site during periods of scheduled project work. NOAA's experience indicates significant periods during scheduled project work where safety or mission parameters such as cloud cover, sea state, and tide stage cannot be met. The aircraft must remain available until parameters are within acceptable limits to meet project requirements. During these periods, a contractor would be unable to reconfigure and use the aircraft for other purposes. The aircraft would also be unavailable for other uses during instrument changes. Private aircraft operators will not generally achieve economics of scale in meeting NOAA's missions. NOAA's operating costs, when double counted overhead is excluded, do not include significantly large support costs incurred by ONCO, CPC and AOC. Also, NOAA's economy of scale is enhanced by cooperative arrangements with other agencies.

The draft report states: "The lower relative activity levels of the NOAA light aircraft are evident from the AOC-prepared "FY 1996 Aircraft Flight Hour Analysis." This analysis breaks down AOC's total number of actual flight hours by aircraft and provides the number of hours approved by the NOAA Aircraft Allocation Council (NAAC). NAAC is the authority within NOAA for policy matters regarding the allocation of operational NOAA and private-sector company aircraft time to support NOAA's programs

and missions and it establishes relative priorities for the use of NOAA and private-sector aircraft resources. NAAC voting members include NOAA's Deputy Under Secretary for Oceans and Atmosphere, five assistant administrators, and directors of the offices of Global Programs, Coastal Ocean Programs, and ONCO. Of the 4,223 flight hours that NAAC approved, NOAA's light aircraft flew only 3,257, or 23 percent below the approved rate."

Aircraft allocation plans approved by NAAC are completed several months in advance of flight operations. Actual operations are frequently modified from the plans to accommodate changes in program requirements, program funding, and environmental factors. In Fiscal Year 1996, the Citation (N52RF) and Turbo Commander (N53RF) flew 450 hours less than the NAAC plan because cloud cover and other environmental factors did not warrant flying the planned hours. The program mission of these aircraft is photogrammetry, which requires both clear weather and correct coastal tides. On deployments, especially in areas such as Alaska, many days are spent awaiting acceptable weather and tidal conditions. The Shrike Commander (N51RF) flew 204 hours less than the plan because snow cover was less than normally anticipated and fewer flight hours were required than during more normal years. Twin Otters N48RF and N485RF flew 265 hours less than the plan because N48RF was damaged by a contractor during maintenance (six weeks of survey time was lost) and adverse weather and sea conditions made much of the remaining period unflyable. Some planned flights were also canceled due to the government shutdowns in FY 1996, caused by delayed appropriations.

The draft report states: "In addition, the Hughes 369/500D helicopter flew no hours during fiscal year 1996. During our visit to AOC in December 1996, we observed that this aircraft was in storage. AOC officials explained that there was insufficient customer demand for its services to keep it maintained and ready for use. Because there is no apparent need for the Hughes 369/500D helicopter, we believe that it should be released, along with related spare parts, in accordance with OMB Circular A-126."

National Marine Fisheries Service conducts an extensive marine mammal survey using a helicopter flown from the NOAA Ship DAVID STARR JORDAN. This survey is done in conjunction of the Marine Mammal Protection Act. Due to stability restrictions of the JORDAN, the helicopter is limited in size. Also due to the load

to be carried, which includes two people and a heavy camera, a turbine-engine helicopter rather than a piston-engine is required. In addition to increased lifting and carrying capacity of a turbine-powered helicopter, this type of helicopter is much safer than a piston-engine, a very important consideration when flying over water. The Hughes 369/500D is the smallest turbine-engine helicopter available; larger helicopters would be too heavy to operate from the JORDAN. At the time this aircraft was initially purchased, NOAA had looked to obtain one through charter. This type of aircraft was not available. This aircraft is no longer being manufactured, so it is even more doubtful if one could now be obtained through long-term charter. In 1996, NOAA had considered disposing of the Hughes 500D. Due to its unique capabilities and because very little expense was involved in maintaining it in storage when not supporting the marine mammal surveys, NOAA decided to retain this helicopter. The aircraft is presently being removed from storage for a Dolphin Survey Project on the JORDAN during the summer of 1998.

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The draft report states: "Other factors contribute to the higher AOC cost per flight hour for its light aircraft. . . . In our opinion, as NOAA's fleet becomes older, the aircraft will require even more time for maintenance, the amount of "downtime" will increase, and operational time will decrease."

There is no data that shows current costs are being driven up by increased maintenance requirements or that scheduled maintenance has ever adversely affected the operational commitments of any NOAA aircraft. AOC standard aircraft maintenance procedures include scheduling aircraft maintenance down time during periods when the platform is out of service for instrumentation/demoding. Also, when projects are scheduled, the aircraft maintenance inspection periods are scheduled to correspond to periods of non-operational time.

The draft report states: "Another factor in our opinion is the lack of adequate incentive to control costs because of the availability within the government of funds to cover rising costs, such as from reprogramming."

This opinion is also not backed by any data. NOAA conducted a cost study of NOAA aircraft in 1995 to assess the cost effectiveness of NOAA aircraft and reorganized the Aircraft Operations Center in 1997 to improve efficiency and will continue to assess approaches to improve efficiency and effectiveness.

The draft report states: "In addition, NOAA managers may not be aware of the higher cost to operate their aircraft because they have not conducted an approved cost comparison for fiscal year 1996 to justify retention of in-house aviation services. ONCO officials informed us that an OMB Circular A-76 cost comparison has never been completed for any of the NOAA aircraft although AOC did complete in-house cost studies in 1993 and 1995. However, these cost studies were not submitted to GSA or OMB. In accordance with OMB Circular A-126, *Improving the Management and Use of Government Aircraft*, dated May 22, 1992, agencies shall review periodically the continuing need for all of their aircraft and the cost effectiveness of their aircraft operations in accordance with the requirements of OMB Circular A-76. The circular also requires that agencies report any excess aircraft and release all aircraft that are not fully justified by these reviews. A copy of each agency review shall be submitted to GSA when completed and to OMB with the agency's next budget submission."

OMB Circular A-126 was developed to provide policy for aircraft engaged in transportation of government officials and other passengers on government aircraft. The Background Section of A-126 states:

" 3. *Background.* The Office of Management and Budget has concluded that the government-wide policy guidance with respect to the use of government aircraft should be clarified to restrict the operation of government aircraft to defined official purposes; restrict travel on such aircraft; require special review of such travel on government aircraft by senior officials or non-Federal travelers in circumstances described hereafter, and codify policies for reimbursement for the use of government aircraft."

The primary purpose of OMB Circular A-126 was to provide guidance related to use of governmental aircraft versus commercial aircraft for travel of government officials. NOAA does not use

its aircraft for travel purposes because they are modified for scientific data collection rather than carrying passengers.

NOAA does collect NOAA aircraft cost information in accordance with the aircraft cost element definitions contained in A-126 and provides this information annually to GSA. NOAA also conducted a review of in-house aircraft costs versus commercial alternatives in 1995 which found in-house operations to be the cost efficient alternative. This information was reported to the Congress through OMB and was discussed with NOAA managers at NAAC meetings. The retention or disposal of NOAA aircraft is discussed with NOAA managers at NAAC meetings at least annually. In addition, four aircraft have been excessed and released by NOAA in the past four years.

Page 11

The draft report states: "Attachment A to the circular includes examples of the kinds of government activities that are available from the commercial sector. Among these are maintenance, overhaul, repair, and testing of aircraft and components; scientific data studies; and mapping and charting and geological surveys. With the exception of NOAA's two hurricane research aircraft and its recently acquired jet, which offers unique services not currently available commercially, we believe that this federal policy applies to NOAA's aircraft."

NOAA does contract with the private sector for the majority of its light aircraft maintenance and engine overhauls. NOAA also contracts for some aircraft services where available and cost effective. Attachment A to the circular does not suggest aircraft modified to conduct scientific data studies may be available from the commercial sector.

The draft report concludes: "Program offices must rely on the private sector to provide their aircraft services. This is because NOAA's group of 10 light aircraft are significantly most costly to operate when their true or full costs are compared with the private sector. As a result, AOC inefficiencies have unnecessarily increased the cost of government programs or cost them valuable flight hours that might otherwise have been available for mission-related research. Providing base funding to the AOC to meet the NOAA program offices' aircraft requirements is not in the best interests of the program offices



or the government.

NOAA must restructure its aircraft services support to be more cost-effective and better service the interests of the program offices. This should consist of retaining its two heavy aircraft and one mid-size jet, discontinuing the operation of, and releasing, its light fixed-wing aircraft and helicopters, establishing written NOAA policy that program offices are to rely on the private sector, when economically advantageous, to provide all aircraft services support, and transferring base funding for all NOAA aircraft operations to the program offices to procure support services from the most cost-effective private-sector source. Pending transfer of funding and release of aircraft, NOAA should report the full cost of each aircraft in accordance with federal accounting guidelines."

The draft report conclusions are derived from incomplete data which appear to show NOAA's aircraft as more costly than private sector aircraft. When double counted overhead is removed from NOAA's costs and standby and aircraft modification costs necessary to meet NOAA's missions are included in contractor costs, the comparison shows NOAA's aircraft to be less costly by 32 percent. Therefore, there is no need to restructure aircraft services, to dispose of all light aircraft, to restate policies which are already documented, or to change the aircraft services funding approach.

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The draft report states: "This restructuring will result in the reassignment of appropriate NOAA personnel and increased aircraft services responsibilities for program managers and contracting officers. However, the restructuring will provide important benefits to NOAA including, among others,

- greater control by program managers of flight hour funding,
- increased cost-effectiveness through outsourcing or additional flight hours available for research,
- transfer of full-time-equivalent positions to high priority positions in the Department,
- streamlined lease requirements for aircraft facilities<sup>12</sup>, and

- opportunities for greater choices of research platforms and strategies.

"Although the Air Force currently provides the AOC with rent-free use of its hangar at MacDill Air Force Base, officials at the base have told us that they will begin charging the AOC rent once the Army Corps of Engineers completes an assessment of the fair market value of the hangar and establishes the monthly charge. See Appendix B, "Methodology for Assigning the Costs," Part A4a(2)."

As stated above, no funds will be saved by use of contract aircraft. There will be no increased cost effectiveness or additional flight hours. There is no indication the Department requires additional FTE's. Program managers control flight hour funding through NAAC and have ample opportunity to choose research platforms and strategies through NOAA's strategic planning process. Recent correspondence indicates that the U.S. Air Force does not intend to charge NOAA for use of the hangar at MacDill Air Force Base.

Page 13

The draft report states: "As a result of implementing our recommendations, NOAA will put up to \$12 million of government funds to better use. About \$4 million results from outsourcing over a two-year period, while up to \$8 million will be generated from cash receipts to the U.S. Treasury if NOAA's 11 light aircraft are sold. These amounts could increase or decrease during implementation of the recommendations depending on the cost-effectiveness of program offices in negotiating prices with contractors, the level of funding appropriated for aircraft services, the equipment in and condition of the aircraft, and whether or not NOAA's aircraft are transferred to other federal agencies or donated to state agencies or other nonprofit organizations."

No funds will be saved by outsourcing. Costs would likely increase. If all light aircraft were sold at average bluebook retail prices to generate \$8 million, which is highly unlikely, none of these funds would be available to NOAA programs to acquire aircraft services.

The report states: "As part of our review of the full cost to operate the NOAA-owned aircraft, we found that AOC is not recovering the full cost for work it performs under reimbursable agreements with outside government agencies. Federal, departmental, and NOAA policy call for full cost recovery-both direct and indirect-on all reimbursable projects. Internal control weaknesses in determining reimbursable billing rates have resulted in the underrecovery of costs. NOAA should discontinue its interagency reimbursable projects not only because its light aircraft are more expensive to operate as compared with the private-sector but also because less-than-full-cost recovery subsidizes other agency programs with NOAA appropriations. In fiscal year 1996, NOAA appropriations funded well over half the total cost of most sampled interagency reimbursable agreements, resulting in a cost underrecovery of \$777,949 and the diverting of essential resources away from its core mission."

Most reimbursable projects conducted by NOAA collected data which have been of benefit to NOAA. NOAA waives certain costs when cost sharing arrangements with other agencies provide an effective approach for meeting some of NOAA's data collection needs or is otherwise of benefit to NOAA. These reimbursable projects are beneficial to NOAA and should not be discontinued. As previously shown, NOAA's light aircraft are not more expensive than the private sector. Less than full costs were charged for two light aircraft reimbursable projects that did not provide data directly to NOAA programs. One of these projects, a hurricane response mapping project, will provide indirect information of benefit to NOAA by providing updated shoreline maps that can be used for verifying nautical charts. The undercharges for these two projects amount to less than \$65K and are due in large part to estimating aircraft costs based on expected number of hours to be flown for the year. When the hours are less than expected, the spread of fixed costs changes and full costs increase. NOAA is reviewing the aircraft reimbursable cost practices and will modify these practices as necessary to recover appropriate costs.

The draft report states: "For fiscal year 1996, NOAA executed 13 reimbursable agreements for aircraft services-seven with outside agency sponsors and with six NOAA program offices-amounting to \$1.75 million."

Providing flight hours in support of NOAA program offices does not constitute a reimbursable agreement although the program office may pay the variable costs associated with the project.

Pages 15 and 16

The hourly rates reported to GSA are determined following the guidance in Circular A-126 which is an economic cost for comparison of the cost of carrying passengers on government aircraft with commercial carriers. The GSA rate includes items which are inappropriate for charging reimbursable partners such as self insurance rates and depreciation and other overheads on cooperative projects. Similarly, the hourly rate full cost as shown in the draft report includes these inappropriate costs plus double counted NOAA overhead.

Page 17

The draft report states: "If a federal agency does not recover the full cost of projects performed for interagency sponsors, but instead diverts its own appropriations from its core mission to finance the shortfalls, it jeopardizes the results of its own programs and violates the intent of GPRA. . . . Less than full cost recovery on NOAA's interagency reimbursable projects diverts NOAA resources intended for its core mission, thereby placing NOAA programs at risk.

NOAA policy also addresses cost recovery on reimbursable projects. The NOAA *Budget Handbook* [Chapter 2, Section 3.1.b.(4)] states that *It is NOAA policy to recover full costs, both direct and indirect, and performance of services for others.*"

Cost sharing for projects which provide data beneficial to NOAA and the sharing agency provides an efficient approach to meet the data collection needs of NOAA. The NOAA *Budget Handbook* Chapter 2, Section 3 states "Cooperative agreements, because they are mutually beneficial to NOAA and the sponsor, should provide for sharing the total cost . . . ."

The draft report states: "Internal control weaknesses in determining reimbursable billing rates have contributed to cost underrecovery. AOC bills at the completion of each reimbursable

project for the actual hours flown. Billing statements consist of several components - a flight rate; administrative overhead, pilot salaries, and depreciation, based on fixed daily rates; standard level user charge (SLUC), future retired pay of commissioned officers (FRPCO), and NOAA Corps support, based on labor cost; travel and per diem; and aircraft fuel use. We compared the various components of the billing statement to year-end cost documents and noted several discrepancies. In particular, year-end cost documents for AOC's two Twin Otters support a flight rate per hour of \$1,720 and \$457, respectively. However, the flight rate billed for both Twin Otters totaled only \$302. We discussed how the flight rate was calculated with AOC personnel. We were informed that the rate was determined based on discussions with AOC operations personnel and did not match cost information provided to GSA through FAMIS nor was it supported by analysis."

The billing rates for the Twin Otters were \$423 and \$511 per hour. The rate for one of the Twin Otters was reduced because it was damaged by a contractor during maintenance and the cost to repair the damage was excluded. The hourly rates for aircraft for the year are typically estimated early in the year based on hours expected to be flown. If the hours are less than expected, the costs determined for the FAMIS reports at the end of the year will differ from the rates estimated at the beginning of the year.

Page 18

The draft report states: "AOC internal controls that ensure the completeness of billing statements submitted to reimbursable customers also have contributed to the cost under recovery. AOC reported to GSA costs for operations overhead and insurance for all aircraft assigned to the four sampled reimbursable projects but omitted these costs on the billing statements. AOC's internal controls over its billing procedures should be consistent with, and achieve, full cost recovery on all reimbursable project agreements with other agency sponsors until NOAA disposes of its light aircraft."

Costs for self insurance are included for the GSA FAMIS report, but, per GSA guidance, are not appropriate for charging other agencies.

The draft report states: "In addition to internal control weaknesses, another reason costs are not fully recovered on reimbursable projects is because AOC waives certain expenses. NOAA regulations allow, but discourage, the waiving of costs associated with reimbursable work. On the Scanning Hydrographic Operational Airborne Lidar Survey (SHOALS), marine mammal, and hurricane response projects, AOC waived certain costs in the billing process. AOC waived FRPCO, aircraft depreciation, SLUC, and NOAA support costs on the SHOALS and marine mammal projects, and aircraft deprecation on the hurricane response project."

The SHOALS project is a cooperative effort with the U.S. Army Corps of Engineers (USACE) to develop airborne LIDAR for collecting water depth data that can be used for charting. This instrumentation will be useful to both USACE for charting inland waterways and NOAA for nautical charting. Cost sharing in the use of the instrumentation to develop further operational procedures and collect needed data is appropriate and beneficial to both agencies. NOAA waived certain costs as part of its contribution to the project. The hurricane response project will provide shoreline maps that can be useful to NOAA in nautical charting and waiving of depreciation is appropriate for this project.

The draft report states: "In fiscal year 1996, NOAA appropriations funded well over half the total cost of three of the four interagency reimbursable agreements included in our sample, resulting in a cost underrecovery and the diverting of essential resources away from its core mission. Although the full cost, based on OIG calculations, of the four sampled projects was \$1,918,977, AOC billed sponsors only \$1,141,028, resulting in a cost underrecovery of \$777,949. For the sampled projects, this means that for every \$1 of reimbursable funds that AOC recovers from sponsors, it costs AOC \$1.68. The additional cost not recovered from outside agencies is funded from NOAA appropriations for its core mission. Non-recovered costs accounted for 41 percent of total costs for the four projects. "

Three of the four projects provided data beneficial to NOAA and cost sharing was appropriate. A major portion of the differential between the full cost identified by the OIG and the amount billed was depreciation. The full cost identified by the OIG also includes double counted overhead and items such as self insurance which may be appropriate for cost comparisons but are

inappropriate for charging other agencies. Considering the above factors, under recovery of appropriate costs was less than \$65K. NOAA is reviewing the aircraft reimbursable cost practices and will modify these practices as necessary to recover appropriate costs.

Page 19

The draft report states: "AOC does not recover the full cost of reimbursable agreements with outside agencies because of weaknesses in AOC's billing processes and because certain expenses are waived. As a result, the AOC financed a significant percentage of the cost of other agencies' projects. Cost underrecovery on reimbursable projects put at risk projects associated with NOAA's core mission. Under GPRA, NOAA is accountable for the efficiency, effectiveness, and results of its own programs. Therefore, it is essential that NOAA discontinue its interagency reimbursable work and focus exclusively on preserving funding for its core mission. In the interim, however, NOAA should complete all current interagency projects and take appropriate actions necessary to ensure full cost recovery."

Waiving of certain expenses is consistent with NOAA policy for cooperative projects which provide data beneficial to NOAA. This does not represent financing a significant percentage of other agencies' projects. Instead it leads to efficiencies for both agencies and implements GSA findings that costs can be reduced by entering into sharing arrangements. Cost sharing on reimbursable projects contributes to collection of data required to meet NOAA's core missions and does not put projects at risk. NOAA does not believe it should discontinue reimbursable work. NOAA will review the aircraft reimbursable billing process and revise it as necessary to ensure appropriate costs are recovered.

Specific responses to the draft report recommendations are provided elsewhere in this response.

Appendix A

The primary mission of the Bell helicopter shown in Table 4 would be more accurately described as cooperative charting data collection.

Appendix B page 1

The unfunded pension liability in line 3 of Table 5 should be removed because it is included as an indirect cost in the total obligations for AOC in line 1. The administrative overhead in line 4 of Table 5 should be reduced to no more than \$124K because all the overhead expenses, except perhaps a portion of health care, are included as indirect costs in lines 1 and 2 and the AOC liaison officer position has been eliminated. Also, \$576K include included in line 1 of Table 5 as an indirect cost is also included in this line as a direct cost and should be excluded. Appropriate changes should then be made to NOAA aircraft cost estimates included in the report.

Appendix B page 4

The Air Force has provided documentation to NOAA indicating they will not charge for hangar use.

Appendix B page 5

Retired officer pay and health care are included in Table 5 and should not be included again because that would be double counting, or in this case, triple counting.

Appendix C page 1

The industry standard costs for aircraft of similar make exclude standby and modification costs required to meet NOAA missions and do not represent the hourly costs to meet NOAA missions.

Appendix C page 2

If NOAA's helicopters were depreciated over 8 years as suggested by the draft report, NOAA's cost per hour would actually decrease because both helicopters are over 8 years old.