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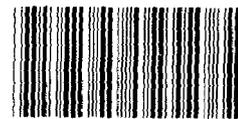
United States General Accounting Office 133283

Fact Sheet for the Chairman,
Subcommittee on Space Science and
Applications, Committee on Science,
Space, and Technology, House of
Representatives

June 1987

BUDGET REIMBURSEMENTS

The National Aeronautics and Space Administration's Reimbursable Work



133283

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National Security and
International Affairs Division

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June 17, 1987

The Honorable Bill Nelson
Chairman, Subcommittee on Space
Science and Applications
Committee on Science, Space,
and Technology
House of Representatives

Dear Mr. Chairman:

This fact sheet responds to your office's request for information about the National Aeronautics and Space Administration's (NASA's) reimbursements. It (1) describes how reimbursements impact on NASA's funding requirements; (2) provides the amount of estimated total reimbursements for fiscal year 1987; and (3) provides information on the amount, type, and source of reimbursements in fiscal year 1985 for the Space Flight, Control and Data Communications and Research and Development accounts.

NASA has two categories of reimbursements--additive reimbursements, those that are separate from NASA's direct programs and do not affect funding, and offsetting reimbursements, those that are needed to carry out NASA's direct programs and are integral to direct program funding. NASA's fiscal year 1987 budget request was for \$7.7 billion. In addition, NASA estimated that it would receive about \$1.8 billion in reimbursements (\$1.1 billion additive and \$0.7 billion offsetting). NASA relies on offsetting reimbursements to help fund three budget categories: Shuttle Operations, Spacelab Operations, and Personnel. The total funding needed for these categories is not readily identifiable because the backup material to NASA's budget either does not fully disclose that these estimated reimbursements are relied on or does not discuss the way in which they are handled.

In conducting our work, we interviewed NASA officials and examined NASA documents. We also obtained information from NASA's fiscal year 1987 budget estimates and from its report of reimbursable orders by source for fiscal year 1985, the most recent readily available information at the time of our review.

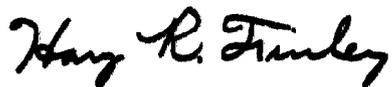
We have discussed the information in this fact sheet with knowledgeable NASA officials. They agreed with the

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information presented and made some clarifying comments. We considered their comments in preparing this document. We plan no further distribution of this fact sheet until 5 days after its issue date, unless you publicly announce its contents earlier. At that time, we will send copies to the Chairmen, House and Senate Committees on Appropriations and on Armed Services; the Senate Committee on Commerce, Science and Transportation; the Administrator of NASA; the Secretary of Defense; the Director, Office of Management and Budget; and other interested parties upon request.

Should you have any additional questions, please contact me at 275-4268.

Sincerely yours,

A handwritten signature in cursive script that reads "Harry R. Finley".

Harry R. Finley
Senior Associate Director

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ABBREVIATIONS

DARPA	Defense Advanced Research Projects Agency
DOD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
ESA	European Space Agency
FAA	Federal Aviation Administration
FLTSATCOM	Fleet Satellite Communications System
GOES	Geostationary Operational Environmental Satellite
Landsat	Land Satellite
NASA	National Aeronautics and Space Administration
NOAA	National Oceanic and Atmospheric Administration
NORAD	North American Aerospace Defense Command
NSF	National Science Foundation
RSRA	Rotor Systems Research Aircraft
SDI	Strategic Defense Initiative
SPACECOM	Space Communications Company
STS	Space Transportation System
TDRSS	Tracking and Data Relay Satellite System
TIROS	Television and Infrared Observation Satellite
VA	Veterans Administration
VLS	Vandenberg Launch Site

NASA'S REIMBURSEMENTS

Reimbursements are sums received by the government for commodities sold or services furnished that are authorized by law to be credited directly to specific appropriation and fund accounts. These amounts are deducted from the total obligations and outlays in determining net obligations and outlays for such accounts.

The President's Budget for fiscal year 1987 requested approximately \$7.7 billion for NASA's four appropriation accounts: (1) Space Flight, Control and Data Communications; (2) Research and Development; (3) Construction of Facilities; and (4) Research and Program Management. In addition, NASA estimated it would receive another \$1.8 billion in reimbursements to these accounts. About \$1.044 billion was estimated to be received by the Space Flight, Control and Data Communications account and about \$737 million by the Research and Development account. Reimbursements to the Construction of Facilities and the Research and Program Management accounts for fiscal year 1987 were estimated at \$12.0 million and \$40.0 million, respectively.

NASA officials told us that the Office of Management and Budget requires a budget estimate for reimbursements and that this estimate is the basis for its requests to the Office of Management and Budget for apportionments. Apportionments for reimbursements are NASA's authority to obligate funds on work orders from others. The reimbursable budget also serves as a management tool to oversee the type of work NASA does for others.

CATEGORIES OF REIMBURSEMENTS

NASA officials told us there are two categories of reimbursements:

- additive reimbursements (also called pass-throughs), which are separate from NASA's direct programs and do not affect funding requirements, and
- offsetting reimbursements, which are needed to fund NASA's direct programs and are considered to be an integral part of NASA's total funding.

Most NASA reimbursements are additive. NASA estimated it would receive about \$1.1 billion in additive reimbursements in fiscal year 1987. The tables in appendix II present data on categories of reimbursements for fiscal year 1985 and provide examples of the types of reimbursable work and funding sources.

Because offsetting reimbursements affect NASA's funding requirements, the following describes how these reimbursements

are handled with respect to NASA's budget, using Shuttle Operations as an example.

OFFSETTING REIMBURSEMENTS PROCESS

A NASA official told us that offsetting reimbursements are counted on to partly fund three budget categories: (1) Space Transportation Operations (also called Shuttle Operations), (2) Spacelab Operations, and (3) Personnel. Offsetting reimbursements for Shuttle Operations is the largest budget category of reimbursements. NASA estimated that fiscal year 1987 reimbursements to its Space Flight, Control and Data Communications account for Shuttle Operations would be \$704 million. The sources of the \$704 million are the Department of Defense (DOD) (\$531 million) and other government and commercial shuttle customers (\$173 million).

We were told NASA incurs obligations beginning 33 months prior to scheduled shuttle flights. Government agencies (other than DOD) and commercial shuttle customers follow a 33-month progress payment schedule, which NASA believes reflects these costs. DOD makes one annual payment in January, 1 year in advance of the scheduled flights.

Under its process for estimating Shuttle Operations funding requirements, NASA

- estimates the number of flights it expects to operate during the budget year;
- establishes operating costs based on a periodic assessment of the total cost per flight;
- estimates the total obligations for the year needed to fund the costs;
- calculates anticipated reimbursements (for Shuttle Operations, this total is the combination of DOD's payment and scheduled payments from other government and commercial customers); and
- deducts anticipated offsetting reimbursements from the estimated total obligations.

NASA also offsets its appropriation requests in two other budget categories but for much smaller amounts. NASA estimated its fiscal year 1987 Research and Development account funding requirements would be offset by reimbursements of about \$5 million for spacelab operations and its Research and Program Management funding requirements would be offset by about \$15 million in reimbursements for personnel costs.

Because reimbursements for NASA's Shuttle Operations, Spacelab Operations, and Personnel categories are counted on in lieu of appropriations to carry out these programs, their funding needs are greater than the appropriations NASA requests for them. Furthermore, NASA's funding needs are not apparent from the backup material to the appropriations request. The \$704 million estimated for Shuttle Operations reimbursements is identified separately in NASA's budget support material, and the material does note that certain reimbursements are combined with appropriations to support Shuttle Operations. However, the backup material does not discuss the way in which reimbursements offset the requirement for appropriations, and the estimates for Spacelab and Personnel reimbursements are not separately identified.

TABLES COMPARING NASA'S
FISCAL YEAR 1985 BUDGET TO REIMBURSEMENTS

Tables II.1 and II.2 compare NASA's fiscal year 1985 budget to its reimbursable orders for two appropriation accounts, Space Flight, Control and Data Communications and Research and Development. A percentage column is also provided to show the level of effort of reimbursable work compared to NASA's budget. Fiscal year 1985 data is used because at the time of our review it was the latest year for which reimbursable information was readily available.

Tables II.3 and II.4 present examples of actual reimbursable orders by source for each appropriation. We selected these examples to show various sources and amounts of reimbursements.

In preparing the tables we relied on the information from NASA's reports of reimbursable orders by source for fiscal year 1985 for the Space Flight, Control and Data Communications account and for the Research and Development account. Since reimbursements to NASA's other two accounts were relatively small, we do not address them further in the tables. We obtained the budget information for the tables from NASA's report of the actual fiscal year 1985 budget presented in its fiscal year 1987 budget estimates. None of the information presented has been verified by us as to the amount, purpose, or source of the reimbursable orders.

Table II.1: NASA's Reimbursements Compared to Budget for Space Flight, Control and Data Communications (Fiscal Year 1985)

<u>Program</u>	<u>Budget</u> ^a	<u>Reimbursable orders</u>	<u>Orders as percentage of budget</u>
	--- (in thousands) ---		
Shuttle Production and Operational Capability			
Orbiter	\$674,200	\$ 69,701	10.3
Launch and Mission Support	218,100	249,796	114.5
Propulsion Systems	<u>592,200</u>	<u>138</u>	b
	1,484,500	319,635	21.5
Expendable Launch Vehicles			
Scout Procurement		14,055	
Centaur Procurement		70,478	
Delta Procurement		43,808	
Atlas Procurement		<u>2,839</u>	
		131,180	
Space Transportation Operations (Shuttle Operations)	1,314,000	480,600	36.6
Space and Ground Network, Communications and Data Systems			
Space Network	378,300	23,276	6.2
Ground Network	233,200	17,610	7.6
Communications & Data Systems	<u>184,200</u>	<u>3,897</u>	2.1
	795,700	44,783	5.6
Total	<u>\$3,594,200</u>	<u>\$976,198</u>	27.2

^aDoes not include reimbursable orders.

^bLess than one tenth of one percent.

Table II.2: NASA's Reimbursements Compared to Budget for Research and Development (Fiscal Year 1985)

<u>Program</u>	<u>Budget^a</u>	<u>Reimbursable orders</u>	<u>Orders as percentage of budget</u>
	--- (in thousands) ---		
Space Station	\$155,500		0
Space Transportation			
Capability Development			
Spacelab	55,700	\$ 4,700	8.4
Upper Stages	137,400	210,747	153.4
Engineering and Technical Base	105,700	33,289	31.5
Payload Operations and Support Equipment	56,300	46,860	83.2
Advanced Programs	20,500	1,890	9.2
Tethered Satellite System	<u>15,800</u>	<u> </u>	0
	391,400	297,486	76.0
Space Science And Applications			
Physics and Astronomy	677,200	6,166	0.9
Life Sciences	62,300	248	0.4
Planetary Exploration	290,900	374	0.1
Space Applications	<u>374,100</u>	<u>319,337</u>	85.4
	1,404,500	326,125	23.2
Commercial Programs	9,500	3,475	36.6
Aeronautics and Space Technology			
Aeronautical Research and Technology	342,400	56,881	16.6
Space Research and Technology	150,000	15,044	10.0
Energy Technology	<u> </u>	<u>85,988</u>	
	492,400	157,914 ^b	32.1
Tracking and Data Advanced Systems	14,800		0
Total	<u>\$2,468,100</u>	<u>\$785,000</u>	31.8

^aDoes not include reimbursable orders.

^bDoes not add due to rounding.

Table II.3: Examples of Reimbursements to NASA's Space Flight, Control and Data Communications Account (Fiscal Year 1985)

<u>Program, source, and reimbursable work/service</u>	<u>Amount</u> (in thousands)
Shuttle production and operational capability	
Orbiter	
Air Force Controlled Mode Support	\$34,901
Air Force DOD STS Security	17,455
Air Force Shuttle Booster Refurbishment	2,800
Launch and Mission Support	
Air Force VLS Support	83,431
Air Force VLS Equipment	73,761
Air Force Operations and Maintenance Support	54,380
Propulsion Systems	
Air Force Space Shuttle Main Engine for Upgrade of Stage IV Propellant Load Facility	138
Expendable launch vehicles	
Scout Procurement	
Air Force Navy Navigation Satellite System	13,978
Centaur Procurement	
Air Force Launch Vehicles and Support for FLTSATCOM F6 and F7	37,192
Air Force Launch Vehicles	14,117
Delta Procurement	
NOAA Launches of GOES G7 Spacecraft	33,912
Atlas Procurement	
Air Force Atlas Hardware	2,839

Space transportation operations

Multiple sources	Space Shuttle fees (offsetting reimbursements)	480,600
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Space and ground network, communications and data systems

Space Network

NOAA	Landsat-D Mission Operations Support	4,779
Air Force	Ground Security	4,595
Air Force	DOD STS Secure Operations	6,925
Army	C-Band Implementation for TDRSS	3,000

Ground Network

NOAA	Maintenance and Support of the Gilmore Creek, Alaska, Station	5,656
NOAA	Landsat-D Mission Operations Support	3,328
DOT/FAA	Vertical Separation Standards Program	1,252

Communications and Data Systems

Germany	Spacelab D-1 Optional Services	1,210
NOAA	Landsat-D Mission Operations Support	1,591
Air Force	Leasing Off-site Communications	650

Table II.4: Examples of Reimbursements to NASA's Research and Development Account (Fiscal Year 1985)

<u>Program, source, and reimbursable work/service</u>		<u>Amount</u> (in thousands)
Space station		
No reimbursable orders		
Space transportation capability development		
Spacelab		
Source not identified	Spacelab operations (offsetting reimbursement)	\$4,700
Upper Stages		
Air Force	Centaur Production and Integration	114,367
Air Force	Centaur Production	75,242
SPACECOM	Tracking Data Relay Satellite-C	7,036
Engineering and Technical Base		
Air Force	Calibration Support Services	49
Navy	High Reynolds Number Wind Tunnel Testing of Trident II	25
Navy	Occupancy and Utility Charges	3,673
Navy	Support Services for NORAD	4,554
Payload Operations and Support Equipment		
Air Force	Centaur Production and Integration	12,151
Air Force	Payload Optional Services	3,760
Air Force	Operational Services	4,325
Advanced Programs		
Air Force	Lens Antenna Deployment and Retraction Demonstration	1,061

Tethered Satellite System

No reimbursable orders

Space science and applications

Physics and Astronomy

Army	Kuiper Technology Effort	1,196
Japan	Spacelab Mission Management Spacelab-J	3,597

Life Sciences

Air Force	Development and Testing of a Transcutaneous Ultrasonic Doppler Bloodflow Measurement System for the Ear	123
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Planetary Exploration

ESA	GIOTTO - Halleys Ephemeris	142
NSF	Visitor Support Costs for the Infrared Telescope Facility	72
ESA	Damage Insurance Settlement	40

Space Applications

DOT/FAA	Central Weather Processor Program	23,855
NOAA	Procurement of 3rd Generation Polar-Orbiting Satellite System TIROS-N, NOAA A-J	37,035
NOAA	Procurement of NOAA K, L, and M Satellites	31,871
NOAA	Procurement of GOES-K	51,801
Army	All Source Analysis System Enemy Situation Correlation Element	77,260

Commercial programs

VA	Development of a Second Generation Unistick Vehicle Controller	284
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VA	Development and Operation of Advanced Simulator Facility to Study Wheelchair Control Dynamics and Mobility Aids for Low Vision Persons	275
DOT	Application of Radar for Automotive Crash Avoidance	430

Aeronautics and space technology

Aeronautical Research and Technology

Army	Advanced Development of Flight Simulator Components	4,505
Army	Cockpit Simulations for Single/Dual Crew Comparison Testing	4,700
DARPA	RSRA Program	14,400

Space Research and Technology

DARPA	SDI Space Nuclear Power Program	7,885
Air Force	Prototype Long Lifetime Mechanical Cooler	1,985

Energy Technology

DOE	Research and Technical Development for Large Wind Turbine Program	14,800
DOE	Flat Plate Solar Array Project	10,219
DOE	Phosphoric Acid Fuel Cell and Power Development	21,551
DOE	Heat Engine Systems Program	9,389

Tracking and data advanced systems

No reimbursable orders

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