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Report to Sen. Charles H. Percy, Ranking Minority Member, Senate Committee on Governmental Affairs; by Elmer B. Staats, Comptroller General.

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Federal research and development contract awards to the private, profitmaking sector are increasing. These contract awards have particular potential problems which should receive attention. The authority, practices, and procedures for awarding research and development contracts to private, profitmaking firms were investigated for the following agencies: the Maritime Administration, the Environmental Protection Agency, the Federal Aviation Administration, the National Highway Traffic Safety Administration, the Federal Railroad Administration, and the Office of the Secretary of Transportation. Findings/Conclusions: Examination of more than 100 contracts awarded by these agencies in fiscal year 1975 to private, profitmaking firms indicated that there are three potential problem areas: end-of-year contract awards; contract modifications; and a lack of formal procedures for evaluating the usefulness of contract work. In addition, agencies were found to be furnishing inaccurate research and development funding data to the National Science Foundation. The Foundation uses this funding data to compile annual comprehensive statistical reports on the magnitude and composition of Federal research and development programs which are used in planning for Government programs. Many of the inaccuracies of the agencies' reports may occur because the agencies have not issued firm instructions for supplying accurate statistics. (Author/SC)

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REPORT OF THE COMPTROLLER GENERAL OF THE UNITED STATES

RELEASED
4/18/77

Federal Agencies' Contracting For Research And Development In The Private, Profitmaking Sector

Potential problems in Federal agencies' awarding of research and development contracts to private, profitmaking firms are

- end-of-year contract awards,
- contract modifications,
- lack of procedures for evaluating end products, and
- inaccurate reporting of research and development funding.



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-164912

The Honorable Charles H. Percy
Ranking Minority Member, Senate
Governmental Affairs Committee
United States Senate

Dear Senator Percy:

You requested that we obtain information on the private sector's involvement in Federal research and development (R&D) programs. In subsequent discussions with your office, we agreed to

- describe six agencies' authority, practices, and procedures for awarding R&D contracts to private, profitmaking firms;
- provide a list of contracts awarded by the selected agencies; and
- identify potential problems in awarding contracts.

Agencies reviewed were the Maritime Administration; the Environmental Protection Agency; and in the Department of Transportation, the Federal Aviation Administration, National Highway Traffic Safety Administration, Federal Railroad Administration, and Office of the Secretary of Transportation.

We examined more than 100 R&D contracts awarded by these agencies in fiscal year 1975 to private, profitmaking firms. We identified three potential problem areas--end-of-year contract awards; contract modifications; and a lack of formal procedures for evaluating the usefulness of contract work. Inordinate year-end contracting and contract modifying can indicate weaknesses in agency planning.

Moreover, agencies were furnishing inaccurate R&D funding data to the National Science Foundation. Using agency funding data, the Foundation compiles annual comprehensive statistical reports on the magnitude and composition of Federal R&D programs. These reports should be as accurate

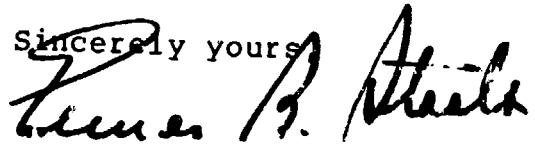
B-164912

as is reasonable, because they influence planning and decisionmaking for Government programs.

The results of our review are set forth in more detail in the summary which follows. As your office requested, we did not obtain written comments from the departments and agencies. However, we discussed the matters in the report with responsible officials and considered their comments where appropriate.

We agreed with your office that either you or our office would examine in detail the causes of potential problems at a later date. We plan to be in touch with you in the near future in this regard.

Sincerely yours

A handwritten signature in black ink, appearing to read "James B. Stacks". The signature is written in a cursive style with a large initial "J" and "S".

Comptroller General
of the United States

SUMMARY OF THE REVIEW BY
THE GENERAL ACCOUNTING OFFICE OF
FEDERAL RESEARCH AND DEVELOPMENT
CONTRACTS AWARDED TO THE
PRIVATE, PROFITMAKING SECTOR

INTRODUCTION

Federal research and development (R&D) contract awards to the private, profitmaking sector are increasing. According to the National Science Foundation (NSF), Federal research and development obligations 1/ in fiscal year 1975 totaled over \$19 billion. Of this amount, \$9.1 billion, or 48 percent, was awarded to the private, profitmaking sector. NSF expects R&D obligations to this sector to increase to 50 percent in fiscal year 1976 and to 52 percent in 1977. The Office of Management and Budget has recently revised its Circular A-76 describing the Government's policy of relying on private enterprise to supply its needs. An Office of Management and Budget official expects this revision to expand the amount of Government functions that are contracted out.

The Ranking Minority Member, Senate Governmental Affairs Committee, requested information on R&D awards to private, profitmaking firms by the Maritime Administration (MarAd); the Environmental Protection Agency (EPA); and the following components within the Department of Transportation: Federal Aviation Administration (FAA); National Highway Traffic Safety Administration (NHTSA); Federal Railroad Administration (FRA); and the Office of the Secretary of Transportation (OST).

1/Obligations are actions which legally bind the Government to disburse funds, including placing orders, awarding contracts, or receiving goods or services.

The table below taken from an NSF publication shows the distribution of R&D obligations by type of performer for the selected agencies.

Distribution of Federal R&D Obligations
by Performers and Selected Agencies
Fiscal Year 1975

<u>Performers</u>	<u>Agencies</u>						<u>Total</u>
	<u>MarAd</u>	<u>EPA</u>	<u>FAA</u>	<u>NHTSA</u>	<u>FRA</u>	<u>OST</u>	
	----- (millions) -----						
In-house	\$ 2.6	\$141.5	\$ 23.0	\$ 1.7	\$ 9.8	\$11.1	\$189.7
Profitmaking organizations	18.7	51.9	68.4	15.5	18.8	10.4	183.7
Educational institutions	.5	33.9	3.2	2.0	.7	5.0	46.3
State and local governments	.3	14.2	.0	12.2	.8	2.1	29.6
Nonprofit organizations	.8	13.4	.0	2.6	.5	.8	18.1
Other (note a)	<u>.0</u>	<u>2.8</u>	<u>10.9</u>	<u>.0</u>	<u>1.8</u>	<u>.9</u>	<u>16.4</u>
Total	<u>\$22.9</u>	<u>\$257.7</u>	<u>\$105.5</u>	<u>\$34.0</u>	<u>\$32.4</u>	<u>\$31.3</u>	<u>\$483.8</u>
Profitmaking organizations' share as percentages of the total	82%	20%	65%	46%	58%	33%	38%

a/Includes amounts awarded to Federally Funded Research and Development Centers and foreign countries.

LEGISLATIVE AUTHORITY TO
AWARD CONTRACTS

MarAd

One of MarAd's objectives under the Merchant Marine Act of 1936 is to develop and promote the operation of the U.S. Merchant Marine. Its R&D goal is to improve the competitive position of the Merchant Marine through practical applications of technical advances. Specifically, its goals are to reduce life-cycle costs, decrease subsidies, and increase productivity of commercial ship systems. To aid in the transfer of R&D results to the U.S. Merchant Marine, MarAd awards contracts to concerns in the merchant marine industry.

EPA

EPA was created in 1970 to permit coordinated and effective governmental action on behalf of the environment. The agency's mission requires an in-house expertise capable of responding quickly to emergency environmental crises. EPA's activities have been directed toward identifying environmental problems, surveying polluting industries, developing standards, and exploring control technologies. Most of EPA's R&D is performed in-house. Its authority to contract for R&D is stipulated under the following legislation:

- Public Health Service Act.
- Federal Insecticide, Fungicide, and Rodenticide Act.
- Clean Air Act.
- Solid Waste Disposal Act.
- Federal Water Pollution Control Act.
- Noise Control Act.

Department of Transportation

The components of the Department of Transportation--FAA, NHTSA, FRA, and OST--are responsible for improving and promoting air, rail, and motor vehicular transportation. Their R&D efforts include testing and developing new vehicles and related equipment and improving transportation safety and

efficiency. The agencies perform in-house research in addition to contracting with the private sector. The following legislation provides contracting authority:

- Federal Aviation Act.
- High Speed Ground Transportation Act.
- Department of Transportation Act.
- National Traffic and Motor Vehicle Safety Act.
- Federal Railroad Safety Act.

CONTRACT AWARD PROCEDURES

The agencies reviewed use the Federal Procurement Regulations (FPRs) in awarding R&D contracts to private, profitmaking firms. The FPRs provide guidance to civilian executive agencies on the procurement of supplies and services. The agencies supplement and implement the FPRs with internal procurement regulations.

We reviewed the agencies' application of these policies and regulations for a limited number (13) of contracts and found they generally were being implemented as prescribed. Under the FPRs, agencies' practices and procedures for managing contracts in most instances should be as follows.

Decision to contract

In the first phase, the agency decides what is required and how it is to be obtained, considering legislative mandates and agency mission statements. These broad requirements are the basis for developing and initiating individual projects.

An agency can accomplish R&D projects in one of three ways: the work may be performed in-house, by another Government agency, or through a contract or grant. In deciding how the work will be performed, the agency should first consider its own capabilities and those of other Government agencies. If these alternatives are not feasible, the decision can be made to contract the work outside the Government.

An agency should not restrict a prospective contractor on the basis of its status as a profitmaking or nonprofit institution. Eligibility should be based primarily on ability to perform the work required. We found several cases where profitmaking firms competed against educational

institutions and other nonprofit organizations for the same contract.

After the decision to contract has been made, the program office reviews and approves the contract request and supporting documentation before submitting them to the procurement office for award. The supporting documentation generally includes a statement of work, a list of potential bidders, and, if necessary, a sole-source justification. The approval level varies with the dollar amount of the proposed contract.

Awarding contracts

The second part of the procurement process involves the steps leading to the actual contract award. Each agency reviewed had its own procurement office except for MarAd, whose contracts were awarded by the Department of Commerce.

When the procurement office receives the contract request, it initiates award procedures. These procedures vary according to whether the contract is to be awarded on a competitive or sole-source basis. In the competitive process, interested contractors submit proposals to the agency in response to an advertised solicitation for proposals. A contractor should be selected on the basis of the best combination of cost and technical competence according to established source selection criteria. Although competition is preferred, contracts can be awarded on a sole-source basis when there is only one source or when competition is impractical.

Monitoring contracts

Once a contract is awarded, a project officer in the program office is usually assigned responsibility for monitoring its progress. Reviewing monthly progress reports is the most common method of monitoring. Other methods include onsite visits and periodic briefings.

R&D GRANT POLICY

Of the agencies reviewed, only EPA awards R&D grants to private, profitmaking firms. The grants result primarily from proposals submitted to the Government without prior solicitation. Grants are awarded in areas relating to water pollution, solid waste, radiation, and public health. In fiscal year 1975, EPA awarded 13 grants totaling \$1,340,000 to private, profitmaking firms.

EPA's procedures for awarding these grants are the same as for awarding grants to educational, governmental, or other nonprofit organizations. When evaluating the prospective grantees, however, EPA makes a cost analysis regardless of dollar amount for all proposals received from profitmaking firms. Cost analyses are made on proposals from other organizations only if the value of the grant is over \$100,000.

PATENT AND COPYRIGHT POLICIES

Agencies have adopted the FPRs' patent and copyright policies, which implement the 1971 Presidential Statement on Government Patent Policy. The goals are to promote for the public benefit the development, use, and availability of inventions made under Government R&D contracts.

The Government normally acquires or reserves the right to acquire principal or exclusive rights to any invention developed under an R&D contract. An exception arises when the work under contract is in an area where the contractor has acquired technical competence (including prior patents) and has an established commercial interest. In such cases either the contractor retains the rights to the invention or the agency allocates such rights after the invention is identified.

Regarding copyrights, the Department of Transportation procurement regulations state that all subject data first produced in the performance of the contract shall be the sole property of the Government. The contractor must also agree to grant to the Government a royalty-free, nonexclusive, and irrevocable license to all data not first produced or composed in the performance of the contract but which is incorporated in the work furnished under the contract.

POTENTIAL PROBLEMS IN AWARDING CONTRACTS

In fiscal year 1975, the agencies reviewed awarded 475 R&D contracts totaling \$82.2 million to profitmaking firms. In accordance with the Minority Member's request, we examined contracts with obligations (including modifications) totaling \$100,000 or more as of June 1976. (See list of contracts beginning on page 15.) These 111 contracts totaled \$35.8 million.

We identified three potential problem areas:

--End-of-year contract awards.

- Contract modifications.
- A lack of formal procedures for evaluating what use is made of contract work.

End-of-year contract awards

The agencies awarded two-thirds of their contracts to profitmaking firms in the last month of the fiscal year. In fact, MarAd awarded 42 percent of its contracts in the fiscal year's last 2 working days. The statistics by agency are presented below.

Schedule of Contracts Awarded During Last Month of Fiscal Year 1975

	<u>Total</u>	<u>MarAd</u>	<u>EPA</u>	<u>NHTSA</u>	<u>FAA</u>	<u>FRA</u>	<u>OST</u>
Total number of contracts	111	26	38	30	7	8	2
Awarded June 1975	72	19	26	19	3	5	0
Percent of total	65%	73%	68%	63%	43%	63%	0%

Awarding a large number of contracts at the end of the fiscal year suggests improper planning and implies that funds are obligated to prevent the authority from lapsing or to avoid reductions in future appropriations. EPA and FAA have issued policies discouraging peak buying at the end of the fiscal year. These policies recognize that proper planning would enable the distribution of contract awards throughout the year and minimize bottleneck conditions at year's end. According to the policies, peaks in procurement can cause:

- Inadequate review of projects, inexact work statements, and/or incomplete proposal evaluations.
- Awarding of unnecessary contracts.
- Lower quality proposals because of peaks in contractor workload when most solicitations are issued about the same time.
- Increased cost to the Government due to overtime in the procurement office.

Agency officials believe they are expected to obligate R&D funds in the fiscal year in which they are appropriated, even if the funds remain available for obligation in the following year; otherwise they will be vulnerable to criticism and congressional action reducing funding in subsequent years if appropriations are carried over to the next fiscal year. If subsequent appropriations are reduced, agencies may be unable to fund needed projects.

There are varying perceptions among agency officials as to why award concentrations occur at the year's end. Some believe it is caused by delays in the procurement offices and others, by poor planning in the R&D program offices. Still other officials attribute this problem to R&D funds not being appropriated before the start of the fiscal year.

Contract modifications

Modifications incorporate new and unanticipated requirements into contracts. They range from minor administrative changes to major redirections. Modifications can increase the contract dollar value and/or extend the completion date.

Because R&D work deals with unknown and variable factors, there are often valid reasons for modifying R&D contracts. However, a high incidence of modifications can indicate poor planning.

Sixty-nine of the 111 contracts reviewed had modifications resulting in dollar increases and/or time extensions. Contracts with dollar modifications increased in value by an average of 72 percent, whereas contracts with time modifications extended the contract completion date by an average of 9 months. Many contracts with dollar increases also had time extensions. The statistics by agency follow.

	<u>Total</u>	<u>MarAd</u>	<u>EPA</u>	<u>NHTSA</u>	<u>FAA</u>	<u>FRA</u>	<u>OST</u>
Total number of contracts	111	26	38	30	7	8	2
Contracts with dollar/time increases	69	17	21	15	6	8	2
Average dollar increase (percent)	72	40	33	42	20	111	41

Average time increase (months)	9	7	8	7	11	17	7
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Increasing contract time and/or dollar values may affect R&D program management and cost in several ways.

- Modifying contracts lessens cost competition since modifications are essentially sole-source awards.
- Extending completion dates may result in providing outdated information and conclusions to management.
- Providing funds for unanticipated modifications may cause other planned projects to be deferred or eliminated.

Our review of 13 completed contracts showed that in some instances, modifications were valid and necessary to incorporate new developments identified during the course of the work. For example, an EPA contract involved a pilot scale evaluation of combustion control techniques for fossil and waste fuels. During the course of the contract, new technological developments were identified that affected the work being performed. By modifying the contract, the agency was able to provide for additional tests using the most up-to-date technology. According to an official, the research results will be more meaningful.

On the other hand, modifications were sometimes used to remedy poor agency planning in the initial stages of the contract. Two examples are presented below:

1. An OST contract was awarded for an analysis of the Department of Transportation's R&D program to be used for presenting the Department's budget to the Congress. The contract was modified several months later, requiring the contractor to produce a comprehensive report on automotive energy efficiency. This modification, in response to the energy crisis, was unrelated to the contract's original scope of work. Some months later the office requesting the automotive energy efficiency report became busy in other areas and told the contractor to stop work on the report. A final report was never provided to OST.

2. FRA contracted for a comprehensive analysis of its safety inspection program. During the performance of the contract, the agency recognized that a deadline was approaching for a report to the Congress on a related subject.

The report was added to the original contract as a modification, which greatly increased the value of the contract. The requirement for the report to the Congress was identified several months before action was taken to procure the services. An agency official said that if action had been taken when the need was initially identified, the project could have been awarded on a competitive basis rather than as a sole-source modification.

Evaluation of end products

We were requested to evaluate the results or conclusions of internal agency evaluations of project performance and results. Of the 111 contracts reviewed, only 13 had been completed because

- many efforts were initially planned as multiyear (some were scheduled for 36 months or more) and
- modifications extended the completion dates (the average extension was 9 months), as follows.

	Number of contracts			
	<u>Reviewed</u>	<u>Completed</u>	<u>Multiyear</u>	<u>With time extensions</u>
MarAd	26	3	3	15
EPA	38	3	10	11
NHTSA	30	5	3	10
FAA	7	1	1	3
FRA	8	1	0	5
OST	<u>2</u>	<u>0</u>	<u>1</u>	<u>2</u>
Total	<u>111</u>	<u>13</u>	<u>18</u>	<u>46</u>

Because of the short timespan between the completion of the contracts and our review, we cannot comment on the use made of the end products. However, we noted that four of the agencies--MarAd, NHTSA, FRA, and OST--did not have formal systematic procedures for evaluating the usefulness of contracted R&D end products.

OBSERVATIONS

As arranged with the Ranking Minority Member's office, we did not identify the causes for the agencies' numerous yearend awards and contract modifications. Nor did we determine the impact of the lack of formal agency procedures for evaluating the usefulness of R&D contract results. However, we believe it important to discuss further investigation of these potential problem areas with representatives of the Ranking Minority Member.

REPORTING OF R&D STATISTICS

The National Science Foundation promotes scientific research and education. Specific activities include collecting, disseminating, and analyzing scientific information to facilitate decisions on national research. NSF compiles annual comprehensive statistical reports, which provide information on the magnitude and composition of Federal R&D programs.

"Federal Funds for Research, Development and Other Scientific Activities" is one such report, providing R&D data based on the President's Federal budget submitted to the Congress. The report analyzes funds given by supporting agencies to the performing sector by character of work, such as basic or applied research or development; by field of science; and by distribution by State. Information is based on an annual survey questionnaire to 93 agencies and agency subdivisions.

The accuracy of the statistics is important because the statistics are used by:

- The Congress, committee staffs, and science advisory groups to evaluate Federal R&D program emphasis and establish scientific policy for the Nation.
- Private industry and research institutes to make planning decisions on the basis of the direction of Federal spending.

- Universities and colleges to plan staffpower requirements and make budgetary and research policy decisions.
- The scientific community and science historians to trace trends in Government R&D program funding and to analyze the effects of this funding.
- The press and general public to increase their knowledge and understanding of Federal R&D programs.
- Science administrators in the executive branch of the Government to assist them in evaluating the status of past and current Federal R&D activities.

Agencies sometimes submitted inaccurate information to NSF.

Inaccuracies noted in reporting statistics

NSF instructions request that agencies use the following definition in reporting R&D funding data:

"all direct, indirect, incidental, or related costs resulting from or necessary to performance of research and development * * * regardless of when the funds were originally authorized or received, and regardless of whether they were appropriated, received, or identified in the agency's budget specifically for research and development * * *."

Agencies did not always follow this definition in submitting their data reports; therefore, they were not reporting all funding for R&D activities to NSF. For example, EPA reported \$52 million in R&D obligations to profitmaking firms in fiscal year 1975. However, this amount was based only on obligations from EPA's R&D appropriations. An additional \$22 million was identified at the agency's procurement office as obligations for R&D activities financed from other appropriations. Similarly, a major portion of the \$43 million budget of a NHTSA division should have been reported but was not because the funds were not R&D appropriations.

In addition, MarAd and EPA assigned a low priority to the reporting of R&D statistics, especially when the statistics were not readily available. Their information systems did not categorize R&D by basic or applied research or development, although NSF requires such data. A MarAd official said he had not analyzed the agency's R&D efforts but had developed statistics based on prior year data submissions. EPA did not have complete records to support its data submissions.

OBSERVATIONS

We did not perform an indepth analysis of the NSF report nor of the agencies' procedures for reporting R&D funding data. However, for the agencies reviewed, the procedural deficiencies merit comment.

NSF officials are concerned about agencies' inaccurate reporting because the NSF data influences policy decisions. These officials believe that many of the inaccuracies occur because agencies have not issued firm instructions for supplying accurate R&D statistics.

Because the NSF publications are the most comprehensive and detailed reports on Governmentwide R&D funding and are used as a reference in decisionmaking, we believe the compilation of these statistics should not be taken lightly by agency officials and should be made as accurate as is reasonable.

SCOPE OF REVIEW

Our work was performed at the Washington, D.C., headquarters of the agencies previously named and EPA's laboratory facilities at Research Triangle Park, Durham, North Carolina.

We reviewed the agencies' procurement regulations and other documentation prescribing procedures for awarding R&D contracts to private, profitmaking firms. We discussed these procedures with officials of procurement and R&D offices.

We analyzed data on all R&D contracts awarded to private, profitmaking firms in fiscal year 1975, except those (1) under \$100,000, (2) for developing an item of hardware, (3) for buying R&D plant or equipment, or (4) for a purpose other than research, study, analysis, or similar

service. We examined in detail the procedures used in awarding and managing 13 of these contracts for comparison with prescribed procedures. We made a limited review of the agencies' procedures for evaluating the usefulness of the results of completed contracts.

We also evaluated the accuracy of the statistical information on R&D expenditures furnished by those agencies to the National Science Foundation.

LIST OF SELECTED CONTRACTS AWARDED TO
PRIVATE, PROFITMAKING FIRMS IN
FISCAL YEAR 1975

MARITIME ADMINISTRATION

<u>Contract number</u>	<u>Contractor</u>	<u>Date of award</u>	<u>Initial award amount</u>
5-37039	Magnavox Research Laboratories	6/27/75	\$ 436,195
5-37043	Prudential Lines, Inc.	4/24/75	190,560
5-37045	NUS Corporation	2/06/75	147,088
5-38000	Exxon Research and Engineering Co.	5/14/75	108,000
5-38003	Grumman Data Systems Corporation	6/30/75	1,049,964
5-38014	Combustion Engineering, Inc.	3/13/75	a/96,187
5-38019	John J. McMullen Associates, Inc.	6/24/75	138,638
5-38021	RCA Global Communications	6/10/	83,265
5-38022	Newport News Shipbuilding and Dry Dock, Co.	4/21/75	418,078
5-38023	Hydrodynamics, Inc.	5/12/75	48,451
5-38024	BDM Corporation	6/24/75	164,892
5-38032	Prairie Shipping Co.	6/26/75	150,000
5-38034	Peat, Marwick, Mitchell and Co.	6/24/75	132,814
5-38036	J.J. Henry Co., Inc.	6/30/75	151,225
5-38037	Moore-McCormack Lines, Inc.	6/30/75	99,000
5-38040	Lykes Brothers Steamship Company, Inc.	6/24/75	370,160
5-38042	Pyramid Marine Co.	6/30/75	144,739
5-38045	Raytheon Company	6/30/75	133,000
5-38046	Pacific Far East Line, Inc.	6/18/75	350,000
5-38047	Comsat General Corp.	6/19/75	116,400
5-38048	Sperry Rand Corp.	6/30/75	360,000
5-38051	Waterway Communications Systems, Inc.	6/27/75	500,000
5-38060	ECON, Inc.	6/30/75	102,844
5-38071	Avondale Shipyards, Inc.	6/30/75	102,156
5-38074	Hydronautics, Inc.	6/13/75	255,000
5-38075	Delta Steamship Lines, Inc.	6/30/75	105,224

ENVIRONMENTAL PROTECTION AGENCY

<u>Contract number</u>	<u>Contractor</u>	<u>Date of award</u>	<u>Initial award amount</u>
68-01-2959	Mathematica, Inc.	11/11/74	\$ 111,537
68-01-3228	National Planning Association	6/19/75	135,522
68-01-3299	Urban Systems Research	6/27/75	127,314
68-02-1182	Englehard Mineral and Chemical Corporation	10/18/74	117,368
68-02-1712	Copley International	9/01/74	64,671
68-02-1863	KVB, Inc.	2/13/75	675,400
68-02-1869	Air Pollution Technology, Inc.	3/06/75	106,400
68-02-1873	United Aircraft Research Laboratories	3/31/75	343,765
68-02-1874	Monsanto Research Corporation	4/14/75	4,006,656
68-02-1881	TRW, Inc.	6/17/75	1,065,000
68-02-1885	Acurex Corporation	6/06/75	497,638
68-02-1887	Westinghouse Research Laboratories	6/30/75	245,200
68-02-2075	DeBell & Richardson, Inc.	6/28/75	285,818
68-02-2101	Ralph M. Parsons Co.	6/25/75	220,617
68-02-2102	Radian Corporation	6/06/75	187,000
68-02-2105	PEDCO Environmental Specialists	6/30/75	281,920
68-02-2116	Aerotherm Division, Acurex Corp.	6/30/75	594,933
68-02-2232	Olson Laboratories	6/27/75	351,000
68-02-2245	Meteorology Research, Inc.	6/30/75	187,251
68-03-2153	Lockheed Electronics Co.	11/12/74	317,696
68-03-2173	Matrecon, Inc.	2/03/75	88,075
68-03-2186	Clean Water Consultants	4/28/75	75,000
68-03-2190	Lockheed Aircraft Corporation	4/07/75	108,000
68-03-2193	Geraghty and Miller, Inc.	4/22/75	66,000
68-03-2198	Arthur D. Little, Inc.	6/09/75	783,400
68-03-2202	United Engineers and Construction, Inc.	6/18/75	159,970
68-03-2207	Water Purification Association	6/10/75	224,778
68-03-2213	Hittman Associates	6/10/75	128,100
68-03-2216	HRB Singer, Inc.	6/10/75	144,000

ENVIRONMENTAL PROTECTION AGENCY (con't)

<u>Contract number</u>	<u>Contractor</u>	<u>Date of award</u>	<u>Initial award amount</u>
68-03-2223	Gannet Fleming	6/25/75	\$ 249,997
68-03-2226	Mathematica, Inc.	6/30/75	173,000
68-03-2228	Metcalf and Eddy, Inc.	6/26/75	117,300
68-03-2334	Arthur D. Little, Inc.	6/25/75	298,300
68-03-2336	Texas Instruments, Inc.	6/30/75	366,773
68-03-2337	Exxon Research & Engineering Co.	6/30/75	965,500
68-03-2338	E. D'Appolonia Consulting Engineers	6/27/75	239,547
68-03-2339	Radian Corporation	6/30/75	197,257
68-03-2340	Energy Resource Co., Inc.	6/30/75	319,800

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

DOT-HS-5-01026	South Texas Tire Test Fleet, Inc.	8/14/74	65,923
DOT-HS-5-01036	Computer Sciences Corporation, Systems Division	11/04/74	711,909
DOT-HS-5-01037	AVCO Corporation	11/04/74	808,304
DOT-HS-5-01039	Opinion Research Corporation	9/25/74	99,635
DOT-HS-5-01045	Informatics, Inc.	10/01/74	83,136
DOT-HS-5-01075	Agbabian Associates	1/06/75	<u>b/BOA</u>
DOT-HS-5-01093	Rockwell International Corporation	3/20/75	166,230
DOT-HS-5-01099	Calspan Corporation	2/20/75	<u>b/BOA</u>
DOT-HS-5-01142	Human Factors Research, Inc.	5/27/75	324,990
DOT-HS-5-01144	Dunlap and Associates, Inc.	6/07/75	128,687
DOT-HS-5-01154	Opinion Research Corporation	5/30/75	93,755
DOT-HS-5-01159	AVCO Systems Division	6/20/75	152,393
DOT-HS-5-01163	Applied Science Associates, Inc.	6/20/75	149,990
DOT-HS-5-01178	AVCO Systems Division	6/26/75	122,416
DOT-HS-5-01179	Calspan Corporation	6/23/75	150,810
DOT-HS-5-01181	AMF Advanced Systems Laboratory	6/30/75	117,253
DOT-HS-5-01183	Control Data Corporation	6/30/75	136,175
DOT-HS-5-01188	AVCO Systems Division	4/25/75	169,510
DOT-HS-5-01191	Systems Technology, Inc.	6/25/75	188,967
DOT-HS-5-01223	Systems Technology, Inc.	6/30/75	178,444
DOT-HS-5-01224	Compliance Testing, Inc.	6/30/75	193,200

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION (con't)

<u>Contract number</u>	<u>Contractor</u>	<u>Date of award</u>	<u>Initial award amount</u>
DOT-HS-5-01228	Essex Corporation	6/30/75	\$ 117,692
DOT-HS-5-01230	Calspan Corporation	6/30/75	117,490
DOT-HS-5-01242	Southern California Research Institute	6/30/75	110,185
DOT-HS-5-01249	Grey Advertising, Inc.	6/30/75	112,966
DOT-HS-5-01251	Systems Technology, Inc.	6/30/75	284,705
DOT-HS-5-01254	Calspan Corporation	6/30/75	527,838
DOT-HS-5-01256	Grey Advertising, Inc.	6/30/75	235,831
DOT-HS-5-01260	Calspan Corporation	6/30/75	127,840
DOT-HS-5-01261	Budd Company	6/30/75	133,490

FEDERAL AVIATION ADMINISTRATION

DOT-FA75WA-3613	Grumman Aerospace Corporation	6/30/75	1,329,317
DOT-FA75WA-3614	Peat, Marwick, Mitchell and Co.	4/01/75	22,200
DOT-FA75WA-3634	Sierra Research Corporation	3/14/75	669,466
DOT-FA75WA-3662	Systems Control, Inc.	5/02/75	1,244,382
DOT-FA75WA-3663	United Aircraft Corpo- ration	12/12/74	302,760
DOT-FA75WA-3707	Lockheed Aircraft Corporation	6/27/75	509,300
DOT-FA75WA-3718	Wyle Laboratories	6/20/75	71,636

FEDERAL RAILROAD ADMINISTRATION

DOT-FR-53060	Arthur Young and Co.	2/17/75	98,931
DOT-FR-54089	Rohr Industries, Inc.	5/01/75	550,000
DOT-FR-54174	ENSCO, Inc.	6/30/75	2,087,681
DOT-FR-55055	Peat, Marwick, Mitchell and Co.	6/30/75	485,021
DOT-FR-56003	Peat, Marwick, Mitchell and Co.	12/02/74	129,903
DOT-FR-56007	Dynatrend, Inc.	6/19/75	420,890
DOT-FR-56010	Richardson Associates	6/30/75	91,300
DOT-FR-56014	Harry Weese and Asso- ciates, Ltd.	6/30/75	607,120

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DOT-FR-50134	Peat, Marwick, Mitchell and Co.	4/01/75	106,151
DOT-FR-50256	Wyle Laboratories	5/20/75	147,000

APPENDIX II

APPENDIX II

a/Although the initial award amounts for this and other contracts were under \$100,000, subsequent modifications increased the contracts to \$100,000 or more.

b/Fixed Order Agreements (BOA) have no initial obligation at the time of award, but rather funds are obligated for each assigned task.