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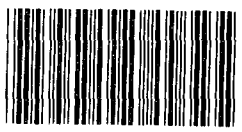
UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

PROCUREMENT AND SYSTEMS ACQUISITION DIVISION

MAY 18, 1979

B-163074



The Honorable Harold Brown
The Secretary of Defense

Attention: Assistant for Audit Reports
Room 3A336
ASD (Comptroller)

Dear Mr. Secretary:

The Government paid $1,858,500 for the use of special-purpose computer software packages called Telescope 340, Telescope 350, and TeleDynamic 1/ even though these packages had been developed primarily at Government expense. Additionally, these packages were acquired with restricted rights. This occurred because the Defense Acquisition Regulation did not provide adequate guidance on ownership rights in computer software and because contracting officials did not enforce certain provisions of the acquisition regulations.

According to Defense Acquisition Regulation 9-602, the Government is to have unlimited rights in computer software required to be developed under or generated as a necessary part of performing a Government contract. 2/ No license fees payment is to be made where the Government has obtained unlimited rights. Our audit work at Grumman Data Systems Corporation 3/ disclosed that the Government paid licensing fees for software developed under Government contracts and should have obtained unlimited software rights.

1/Telescope 340, Telescope 350, and TeleDynamic, along with Telescope 330, are trademarks of Grumman Data Systems Corporation. In this report, the trademark legend will not be repeated each time the trademark is used.

2/This section was in effect at the time of execution of the contracts involving Telescope 350 and TeleDynamic but not during the contract involving Telescope 340.

3/Grumman Data Systems Corporation and Grumman Aerospace Corporation are wholly owned subsidiaries of Grumman Corporation.

Letter Report PSAD-79-69
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Additionally, the regulations provide no guidance about the Government's rights in computer software developed for support of Government work and indirectly charged to Government contracts. The Government also paid license fees and costs on software so developed and charged by Grumman Data and Grumman Aerospace.

LICENSING FEES PAID FOR TELESCOPE SOFTWARE

The Government paid a $600,000 fee to Grumman Data for the use of Telescope 340 software at Edwards Air Force Base, California. An additional $600,000 fee was paid by Grumman Aerospace to Grumman Data for use of Telescope 340; in turn, this fee was charged primarily to Government work through corporate overhead. These fees were paid even though the Telescope 340 software was developed under the Air Force contract. Concurrently with its work under the Air Force contract, Grumman Data did incur other Telescope 340 development costs which were not charged to Government contracts. The Navy also paid a $600,000 fee for the use of Telescope 350 software at its Pacific Missile Test Center, Point Mugu, California. This fee was paid even though Telescope 350 was developed under the Navy's contract.

Telescope 340

The original development of Telescope software was begun by Grumman Aircraft Engineering Corporation 1/ and Grumman Aerospace Corporation. During 1968-70 Grumman undertook the development of a real time automated telemetry station at its Calverton, New York, plant. Part of the developmental effort required writing modifications to Scope 3.1.6, Control Data Corporation's standard computer operating system.

During 1970 Grumman Data became a fully operational, separate subsidiary of the Grumman Corporation and assumed responsibility for further software development work at the Calverton Automated Telemetry Station. The automated telemetry station also became operational in 1970. Its real time capability was used to support the first flight of the F-14A aircraft in December 1970. When Scope 3.3 was issued by Control Data in 1972, Grumman Aerospace and Grumman Data decided to upgrade their real time operating software to a version

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1/Grumman Aircraft Engineering Corporation was the predecessor to Grumman Corporation.

compatible with Scope 3.3. The development work was begun in August 1972 and completed in August 1973 by Grumman Data. This upgraded software was called Telescope 330. The development effort was charged by Grumman Data to Grumman Aerospace. In turn, Grumman Aerospace charged these costs to overhead expense which is borne primarily by Government work. Grumman Data claims proprietary rights to Telescope 330.

In a November 1972 proposal for the installation of an automated telemetry system at Edwards Air Force Base, Grumman Data claimed proprietary rights to Telescope 340. The Air Force inserted a clause in the contract that provided for a modification of the licensing arrangement and for a downward adjustment in the $600,000 license fee should the contractor be unable to support its claim. Under the license, which was included in the contract, the Air Force obtained restricted rights to use Telescope 340.

Grumman Data has stated that Telescope software was not

> "* * * developed directly under any government contracts * * * the Air Force * * * contract(s) involving our Telescope software * * * contain(s) no line items which specify the development of or call for Telescope 340 * * * as deliverable end items."

The contract specification, however, provided that Grumman Data was to provide the "* * * design and implementation of Grumman's TeleSCOPE TM 340 Operating System * * *." Exhibit C (deliverable end items) of contract F04611-73-C-0062, as issued May 1, 1973, by the Air Force, specified that Telescope 340 with preprocessor software modification and Telin compiler were to be delivered to Edwards Air Force Base. Moreover, Telescope 340 did not exist when the Air Force contracted for it. Documentation provided by Grumman Data showed that development of Telescope 340 was not authorized to begin until receipt of a fully executed contract from Edwards Air Force Base. The contract was signed in May 1973. The development work was contingent on receipt of the Air Force contract and was tied to meeting the contractual delivery date of the Air Force contract.

Grumman Data also provided us with the following information:

"Late in 1972, again prior to the execution of the EAFB [note 1] contract, GDS [note 2] technical and marketing personnel proposed additional modifications and enhancements to Telescope 330 for which they believed a market existed, in the government and commercial sectors. This software system was to be designated Telescope 340."

* * * * *

"Since the development of Telescope 340 was to entail large expenditures of company funds, our management agreed to expend these funds only if our marketing personnel could substantiate the existence of a market for such a product by obtaining a firm requirement from a customer therefor."

"Discussions were held, and proposals made to many potential customers and EAFB became a strong possiblity [sic] for our 'firm customer.'"

* * * * *

"On March 12, 1973, our management authorized the committment [sic] of discretionary funds for the development of Telescope 340, via Inter Office Memo (IOM) No. 080-73-008, subject to receipt of a fully executed contract from EAFB. A copy of this memo was forwarded to the Procuring Contracting Officer, EAFB, on January 23, 1974 * * *."

The memorandum was supplied along with a copy of a work order as substantiating documentation to prove proprietary rights of Grumman Data to the software. Grumman Data also advised us:

"The only effort paid for by EAFB as a direct charge was for the installation of Telescope 330 operating software to a compatability level with their CDC 6500 * * *. Absolutely

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1/Edwards Air Force Base.

2/Grumman Data Systems Corporation.

> no funding was received from EAFB for the development of Telescope 340 which was only to cost EAFB the license fee of $600,000."

The above-cited interoffice memorandum, "Authorization to Commit Retained Earnings for the Development of Telescope 340," states, "The Policy Committee has approved the expenditure of company funds to develop the Telescope 340 * * *." However, other documentation we obtained shows that $1.2 million in development costs was charged against the $600,000 license fee obtained from the Air Force and a similar $600,000 license fee obtained from Grumman Aerospace.

During our review we asked the Air Force to provide us with its disposition of Grumman Data's proprietary claims and the rationale. On January 25, 1979, an Edwards Air Force Flight Test Center official advised that the contractor's justification was accepted as submitted. The Air Force official wrote that, in determining the operational status of Telescope 340 at the time it entered into the restricted license, it relied on an independent examination by Calspan Corporation. According to the Air Force, Calspan's examination revealed that as of November 7, 1972, Grumman Data had developed only Telescope 330. However, information we obtained from the contractor showed that

- --the effort to develop Telescope 330 continued into 1973,
- --Telescope 330 was not fully operational at Grumman's Automated Telemetry Station until April 1973, and
- --additional effort was required to August 1973 to clear operational constraints and complete all required development and improvements of Telescope 330.

On December 20, 1974, Grumman Aerospace entered into a restricted license agreement with Grumman Data for Telescope 340. Under the agreement, Grumman Aerospace agreed to pay a $600,000 license fee to Grumman Data for restricted rights to use Telescope 340 at the Calverton facility.

In April 1975 the Defense Contract Audit Agency (DCAA) challenged the appropriateness of the $600,000 license charge for Telescope 340 to Grumman Aerospace on a fixed fee rather than a cost basis. Although Grumman Data was asked to justify the fee, the issue was not resolved to the Navy's satisfaction because Grumman Data refused access to its

records to permit verification of its statements. While asserting its legal rights to withhold disclosure of books and records related to company-funded projects, Grumman Data provided Telescope cost data to DCAA in September 1978. This data shows development costs greater than the $1.2 million Telescope 340 license fees.

We believe Grumman Aerospace should not have paid a $600,000 fee for Telescope 340 since it paid (and recovered through indirect charges to Government contract) for the original development of the real time software and Telescope 330. Grumman Data agrees that the software development effort, through Telescope 330, was paid for by Grumman Aerospace. These costs were recovered by Grumman Aerospace primarily against Government contracts. It is their position, however, that neither Grumman Aerospace nor the Government has any proprietary rights in the Telescope 330 since the developmental effort was not charged directly to any Government contract and Telescope 340 was developed at private expense. The Defense Acquisition Regulation does not provide guidance about ownership rights for software developed for support of Government work and indirectly charged to Government contracts.

Telescope 350

Under contract N66032-77-C-0005, the Navy's Automatic Data Processing Selection Office contracted for a computerized telemetry system for the Pacific Missile Test Center, Point Mugu, California. About $2.7 million was included in the contract for the development of Telescope 350 and associated software. The Navy accepted Grumman Data's claim to ownership of this software, which was to be developed, and agreed to pay Grumman Data a $600,000 license fee for the right to use the software on a restricted basis.

Although the Navy's record of contract negotiations does not contain a justification for entering into a restricted license agreement or for allowing a license charge, the contracting officer wrote that the Navy accepted Grumman Data's assertion that Telescope 350 was a company package developed at private expense which was being modified under the contract.

Grumman Data's position is that (1) the contract does not include a separate and distinct license fee for Telescope 350, (2) Telescope 350 is not a deliverable end item, and (3) Telescope 350 is not being developed under the contract. Each of these items is discussed on the following pages.

Telescope 350 license fee

The contractor said that it was

> "* * * incorrect that the contract received from the Navy for the installation at the Pacific Missile Test Center included a $600,000 license fee."

Grumman Data said, although the restricted license was included in the contract, "* * * no separately stated fee * * *" was shown.

The Navy's memorandum of negotiations does not state whether a $600,000 license fee was or was not included in the contract price.

However, the contractor's best and final offer of February 22, 1977, reads, in part:

> "11.6 Notwithstanding any contrary provisions of this Contract the government agrees to execute coterminous with this Contract, separate 'Non-transferable and Non-exclusive Software License Agreements.' Sample licenses were submitted for ADPESO [note 1] review on 13 September 1976 (See GDSC [note 2] Letter C040-76-4150, dated 13 September 1976)."

The letter of September 13, 1976, included as an enclosure a Non-Exclusive License Agreement covering Telescope 350 and containing a $600,000 license fee. So the $600,000 license fee was, by reference, traceable to the contract because the contract price agreed to was the price proposed by Grumman Data in the February 22, 1977, proposal.

Telescope 350 as an end item

Grumman Data asserted that there is no contractual line item for Telescope 350 in the contract or which calls for it as a deliverable end item. The contract, however, contains a subline item for software which requires the following items to be furnished:

1/Automatic Data Processing Selection Office.

2/Grumman Data Systems Corporation.

--Real time software (Telescope 350).

--Telemetry compiler (Telin 2.0).

--Telemetry processor operational software (Trace).

--Setup and control processor operation software.

--Real time graphics processor operational software.

Thus, Telescope 350 and related software were shown as deliverable items under the contract.

Telescope 350 development

Grumman Data Systems stated that "Telescope software has not been developed directly under any government contracts." Specifically, with regard to the Navy contract, the contractor advised us that:

> "While it is true that our proposal dated April 1976 had a schedule included that identified certain amounts for software development, our contract dated June 1977 did not include any development line item or amount for such development. Our proposal, while using the term 'development costs' as an identifying statement for what had to be done to accomodate [sic] the requirements of the Computer Centralization Modernization Program specifications, did not in fact intend for that word 'development' to be construed as referring to a Telescope product development.
>
> "The prime contract was awarded to us based on our Best and Final proposal dated February 1977. If a comparison was made between our Best and Final offer the financial plans included in our April 1976 proposal, it would be found that millions of dollars were subtracted from that April proposal. In addition, the contract was awarded based on the lowest evaluated amount for the life cycle of the system. There was no requirement in the Government's request for a Best and Final offer for a delineation of charges by line item."

Although the contract does not have a delineation of charges by line item and does not explicitly state that

Telescope 350 was to be developed under the contract, both the Navy and Grumman Data Systems knew that software had to be developed to meet the Navy's requirements. For instance, the Government's record of negotiations shows that the contracting officer based the award, in part, on the results of a source selection board evaluation. This evaluation included an analysis of Grumman Data's technical proposal and concluded that the contractor

> "* * * provided satisfactory documentation that they could meet all mandatory requirements of the Solicitation with their proposed system(s)."

The contracting officer told us that (1) the Navy was aware that Telescope 350 had not been licensed previously, (2) the contractor did not have software available to meet the Government's requirements, and (3) Grumman Data would have to modify, adapt, and integrate software in order to perform the contract.

Grumman Data, in responding to the Navy's performance requirements with the April 1976 proposal, explained and described Telescope and related real time software as:

> "The primary (software) requirements are for a real-time operating system for the Central Processors (Telescope 350 TM) a real-time operating system for the Telemetry Processor (TRACE), a telemetry compiler to provide effective user interaction (TELIN 2.0) * * *."

To accomplish the job successfully within the requirements, Grumman

> "* * * will use our previously developed real-time software systems and expertise (Tele-SCOPE 340 TM, TELIN 1.0, TRACE) * * *."
>
> "Tele-SCOPE 350 TM is an extension of TeleSCOPE 340 TM, a proven GDS [note 1] software product * * * which * * * is operational at our ATS [note 2] facility * * *."
>
> "Tele-SCOPE 350 TM real time software has provisions for handling real time data from up to four TDHS [note 3] streams. * * * Our TeleSCOPE 340 TM."

1/Grumman Data Systems.

2/Automated telemetry station.

3/Telemetry data handling system.

"Realtime Operating System at Calverton, New York currently controls three realtime telemetry data streams * * *."

Telescope 350 TM is "* * * an extension of NOS/BE" (the Control Data Corporation batch operating system).

"TELIN 2.0 is an outgrowth of TELIN 1.0 which is an existing telemetry compiler designed and developed by GDS. It, too, is operational on the ATS * * *."

* * * * *

"TELIN 2 is the new version of the original TELIN language which has been used successfully at the Automated Telemetry System at Calverton, Long Island for the past 8 years."

The price proposal dated April 16, 1976, contained about $4,430,000 for software consisting of:

Initial charges and paid license fees	$1,699,000
Development costs	2,731,000
Total	$4,430,000

About $3,329,000 of the above total was identified with five software items as:

	Paid license fees	Development cost	Total
Telescope 350 software	$600,000	$1,142,700	$1,742,700
Telemetry compiler (Telin 2.0)	-	482,700	482,700
Telemetry processor operational software (Trace)	-	681,700	681,700
Setup and control software	-	176,000	176,000
Real time graphics processor operations software	-	245,800	245,800
Total	$600,000	$2,728,900	$3,328,900

It should also be noted that the contractor agrees that Telescope 350 is substantially different from Telescope 340. Additionally, a Grumman Data official told us that Telescope 350 is being written under the contract for computers installed at Point Mugu.

As to the contractor's implication that the dollar amounts of the software development line item contained in the April 1976 proposal cannot be related to the final contract price because there were millions of dollars in reductions, the contractor told us during our review that "* * * there were no major price changes in software." The contractor's representatives attributed the reduction basically to price changes of the computer hardware to be supplied. We calculated that by adjusting the initially proposed hardware prices to reflect the revised hardware costs and without adjusting the initially proposed software amounts, it is possible to reconcile the two price proposals almost exactly.

We believe that the development of Telescope 350 is being performed under the contract, the $600,000 license fee was included in the contract price, and the Navy contravened Defense Acquisition Regulation 9-602 and 603 in agreeing to restricted rights to the software and by paying the $600,000 license fee.

TELEDYNAMIC SOFTWARE ACQUIRED BY NASA

On June 20, 1978, the National Aeronautics and Space Administration (NASA), Ames Research Center, California, issued contract NAS 2-9926 to Grumman Data. The contract, priced at $157,187, was for a software system for data acquisition and analysis and was based on the contractor's October 1977 proposal. NASA accepted a restricted license agreement covering a real time data analysis software package. In accepting the $157,187 price proposed by Grumman Data, NASA agreed to pay a license fee of $58,500 for the TeleDynamic software package.

DCAA reviewed the contractor's developmental work for TeleDynamic. According to the DCAA audit report, the development was done under a service agreement between Grumman Data and Grumman Aerospace; and, thus, the Government paid for the development through Grumman Aerospace overhead cost. On that basis, DCAA questioned the license fee. NASA, as a result of the audit evaluation, questioned the propriety of paying a license fee and accepting restrictions on use of the software.

Grumman Data, however, maintained that (according to an Air Force contract administration document) even though the development cost was paid for by the Government, no legal rights were obtained to the software because the Government did not specifically finance the project directly nor restrict the expenditure to it.

Although the contracting officer was unable to resolve the appropriateness of the license fee, NASA determined that in the interest of flight safety it was necessary to pay the proposed license fee and obtain the software in order to use it to conduct certain flight tests on the program.

Thus, the problem of the Government's rights in software developed by the contractor through overhead charges borne by the Government is not confined to Telescope.

RECOMMENDATIONS

We recommend that you:

--Determine the extent to which the Navy and Air Force may have acquired unlimited rights to Telescope software developed under the contracts.

--Determine whether any equitable adjustments may be due in license fees or in restrictions on using Telescope software.

--Coordinate with the Administrator of NASA to seek and obtain any appropriate adjustments for the license fee and restrictions on using TeleDynamic software.

--Alert the procuring activities of the possibility that similar situations may exist with other contractors who are doing substantial amounts of Government work and who are supplying special-purpose software packages.

--Consider the need to modify the Defense Acquisition Regulation to provide clear guidance as to the Department's policy in obtaining rights in, and paying license fees for, software developed by contractor's through overhead costs charged to Government work.

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As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and

the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of this report.

We would appreciate being informed of actions taken or planned on our recommendations. We would be pleased to discuss these matters with you or your representatives.

Copies of this report are being sent to the Director, Office of Management and Budget; the Administrator of General Services; the Administrator for Federal Procurement Policy, Office of Management and Budget; the Secretaries of the Air Force and the Navy; and the Administrator, National Aeronautics and Space Administration.

Sincerely yours,

J. H. Stolarow

J. H. Stolarow
Director