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COMMUNITY AND ECONOMIC
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RELEASED

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The Honorable Mark Andrews
Chairman, Subcommittee on
Transportation and Related Agencies
Committee on Appropriations
United States Senate

Dear Mr. Chairman:

Subject: Analysis of Amtrak's Acquisition of Office Copying Equipment (GAO/CED-82-111)

Your letter dated January 29, 1982, asked us to review the overall cost effectiveness of the purchase by the National Railroad Passenger Corporation (Amtrak) of office copying machines. These copiers were purchased from Xerox and Eastman Kodak. You requested that we determine (1) whether copying machines offered by another contractor--Copylease Corporation of America--would have been suitable for Amtrak's needs and (2) whether Amtrak's position that it is not subject to Federal Procurement Regulations (FPR) is correct.

We also looked into Copylease's contention that Amtrak should have used another method of financial analysis in justifying the purchase of the copiers, other than the two analysis methods Amtrak used, and examined the use of all three methods.

We found that when compared with the office copiers that Amtrak had been leasing, the machines that were purchased are cost effective in that annual costs to provide copying services have been substantially reduced. We also found that:

--Within certain limits, the copiers that Copylease offered would have provided Amtrak with the basic copying services needed. The machines offered for lease by Copylease would have been a more cost-effective acquisition than those offered by Xerox only if the special features which Amtrak considered essential to the success of its total copying equipment operation were disregarded.

--As a mixed-ownership Government corporation, Amtrak is not required to conform to the FPR although it can avail itself of General Services Administration (GSA) Federal

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Supply Schedule prices at its own discretion. However, Amtrak did not follow its own purchase requirements and obtain bids on the copiers needed.

OBJECTIVES, SCOPE, AND METHODOLOGY

The overall objective of our review was to assess the cost effectiveness of Amtrak's purchase of office copiers to replace leased copiers. Additionally, our objectives were to determine

--if copiers offered by Copylease would have been a more cost-effective acquisition and equally suitable for Amtrak's needs as compared with the copying machines purchased and

--whether Amtrak is required to conform in its acquisition practices to Federal procurement regulations and requirements, including the use of the Federal Supply Schedule.

We met with Amtrak headquarters and Philadelphia procurement office officials and with Copylease representatives and discussed the manner in which Amtrak assessed its office copier needs and acquired the copying equipment. We obtained and reviewed the procurement file, the purchase order, supporting documentation provided by Amtrak, and data provided by Copylease to support its position in order to assess the propriety of the actions taken.

We discussed with Xerox Corporation, Datapro Research Corporation--a company providing information services on office machine characteristics for business decisionmaking purposes--and Copylease representatives copier features, characteristics, and costs and the alternative ways in which Amtrak's copying needs could have been satisfied. We discussed Amtrak's procurement practices with GSA officials to determine whether Amtrak is required to comply with Federal procurement requirements.

We reviewed the applicable legislation to determine the validity of Amtrak's position that as a mixed-ownership Government corporation it is not subject to FPR or required to use the GSA Federal Supply Schedule.

We analyzed the financial analysis methods used by Amtrak and suggested by Copylease in support of its position--payback period, internal rate of return on investment, and present value or discounted cash flow methods--and assessed their application to Amtrak's acquisition practices. Our review was performed in accordance with our current "Standards for Audit of Governmental Organizations, Programs, Activities, and Functions."

THE DECISION TO
PURCHASE COPIERS

Amtrak leased and operated 16 copying machines for its corporate headquarters in Washington, D.C., to supplement the printing and duplicating capabilities available at its headquarters reproduction center. In early 1980, Amtrak initiated an in-house assessment of how best to provide the copying services needed at headquarters and yet encourage maximum utilization of its reproduction center. Subsequent to this assessment, Amtrak management decided that a significant part of the printing and duplicating services then being provided by leased copiers could be provided by its reproduction center, at a significantly lower cost.

Amtrak then contacted various equipment suppliers to discuss the purchase of copiers. Discussions were held with various manufacturers, including International Business Machines, Saxon Business Products, Eastman Kodak, Xerox Corporation, and Copylease. After discussions with the suppliers, Amtrak decided to purchase 11 copiers to replace the 16 leased machines being used at headquarters.

Amtrak negotiated directly with Xerox Corporation and Eastman Kodak. However, at the same time, Amtrak was also considering leasing copiers from Copylease, a third-party leasing company. In September and October of 1981, Amtrak purchased 11 machines--9 from Xerox and 2 from Eastman Kodak--at a total cost of $258,495 and terminated its negotiations with Copylease.

COST EFFECTIVENESS
OF COPIER PURCHASES

When compared with the costs of the 16 leased machines, Amtrak's purchase of the 11 copiers was cost effective. The leased machines cost about $260,400 annually, including maintenance. The 11 copiers purchased cost $258,495. (See enc. I.) Amtrak has estimated that purchasing the 11 machines has reduced its future annual costs for copiers by about $210,000. However, in computing the estimated savings, Amtrak did not allocate the cost of acquiring the 11 machines over their estimated 5-year economic life. We recomputed the estimated savings, including allocating the purchase cost over the estimated 5-year economic life, and arrived at a first year savings of $160,317--previous annual leasing costs of $260,400 for 16 copiers less annual allocated purchase costs of $51,699 and annual maintenance costs of $48,384, totaling $100,083 for the 11 machines purchased. 1/ In addition, Amtrak estimated paper cost savings of $13,500 annually. The annual savings for each of the subsequent 4 years of the economic life period will probably be less than the first year's savings due to possible increases in maintenance and repair costs in future years.

Using either Amtrak's or our computations, purchasing the copiers was cost effective. The new machines cost less per year than Amtrak had been spending for the leased machines. Following are the 11 copiers purchased and their costs for the first year of operations.

Number of machines	Model	Purchase cost allocated over 5 years (note a)	Annual cost to maintain first year	Total annual cost first year
5	Xerox 5600	$28,585	$26,460	$ 55,045
1	Xerox 7000	4,796	2,592	7,388
1	Xerox 3450	3,291	1,944	5,235
1	Xerox 3109	1,347	1,152	2,499
1	Xerox 3100	741	972	1,713
1	Kodak 150AF	6,794	7,632	14,426
1	Kodak 150F	6,145	7,632	13,777
11		$51,699	$48,384	$100,083

a/At the conclusion of the 5-year economic life period, Amtrak estimated that the 11 copiers would have a total salvage value of $49,500, which we did not consider in the allocation.

THE COPYLEASE ALTERNATIVE

Amtrak initially considered leasing Xerox 4500 copiers from Copylease instead of purchasing Xerox 5600 copiers directly from Xerox. The copiers offered for lease by Copylease would have been suitable for Amtrak's needs with certain limitations which are discussed on the following page.

1/The allocated costs do not represent actual cash outlays that will be incurred each year. We calculated them to restate the purchase costs on an annual basis over the estimated 5-year economic life. The total purchase cost outlay was made in the first year.

We found that the Xerox 4500 copier differed significantly from the Xerox 5600 copier. In addition, the Xerox 4500 was last manufactured in 1977, so that the Xerox 4500 machines offered by Copylease--which Copylease said would have been reconditioned--would have been several years old if Amtrak had purchased them. The Xerox 5600 machines that Amtrak purchased, however, were new machines, having first been introduced on the market in October 1979.

Xerox has rated both the Xerox 4500 and the Xerox 5600 at about the same monthly copying capacity. A Xerox representative explained that the rated capacity is the number of copies a machine can be expected to produce with only a minimum possibility of mechanical failure. Xerox has rated the Xerox 4500 as reliable at a range of 20,000 to 50,000 copies a month, and the Xerox 5600 at a range of 15,000 to 50,000 copies a month. Xerox also rated both copiers as capable of operating at a higher monthly capacity level at about the same reliability level or chance of mechanical failure.

Xerox confirmed that the Xerox 5600 copier also offered certain additional features not available on the Xerox 4500 machines. Amtrak officials said that these additional features were necessary for the success of their plan to consolidate copying services. The Xerox 4500 copier lacks an automatic feed mechanism, a standard feature on the Xerox 5600. With the Xerox 4500 each sheet to be copied must be hand-fed into the machine. The Xerox 5600 provides not only the automatic feed feature but also an automatic two-sided copying feature not available on the Xerox 4500. Two-sided copying on the Xerox 4500, in addition to the need to hand-feed each sheet, requires that each side be first copied and then the reverse side fed separately in sequence into the machine. In addition, one of two holding trays in the Xerox 4500 copier requires an adjustment to enable the machine to receive and hold sheets on which one side had been copied prior to copying the other.

Finally, the Xerox 5600 has a diagnostic system that indicates what the problem is when the machine malfunctions. According to Xerox representatives, this feature enables the operator to correct certain malfunctions, which reduces the number of service visits necessary to keep the machine in operating order. This feature would tend to reduce the machine's downtime.

AMTRAK PROCUREMENT REQUIREMENTS

Amtrak's position that it is not required to follow FPR or to use the Federal Supply Schedule is correct. Amtrak is not an executive department of the Federal Government nor is it an independent establishment of the executive branch. It is a mixed-ownership Government corporation incorporated under the laws of the District of Columbia. We recognize that it was the Congress' intent that such corporations have a considerable amount of autonomy in conducting their business affairs. 1/

Section 301 of the Rail Passenger Service Act of 1970, as amended (45 U.S.C. §541), expressly provides that Amtrak "will not be an agency or establishment of the United States Government." The Congress did, however, amend the Government Corporation Control Act in 1970 (31 U.S.C. §856) to make Amtrak a "mixed-ownership Government corporation." Neither the Rail Passenger Service Act, as amended, nor the Government Corporation Control Act, as amended, expressly provides, however, that Amtrak is bound to follow the FPR.

The FPR (41 CFR §1-1.000 et seq.) is applicable to "all Federal agencies to the extent specified in the Federal Property and Administrative Services Act of 1949 (40 U.S.C. §471 et seq.) or in other law" (41 CFR §1-1.004). The FPR defines Federal agency to mean any "executive agency" or any establishment in the legislative or judicial branch of Government (except the Senate, the House of Representatives, and the Architect of the Capitol and any activities under his direction (41 CFR §1-1.203)). The Federal Property and Administrative Services Act of 1949, as amended, defines in section 3 the term executive agency to mean any "executive department or independent establishment in the executive branch of Government, including any wholly owned Government Corporation" (40 U.S.C. §472(a)).

Since Amtrak is not considered a Federal agency, it is not an executive department of the United States Government, an independent establishment of the executive branch, or a wholly owned Government corporation. Thus, it does not fall within the requirements of the FPR. Accordingly, Amtrak is not required to conduct its procurements in conformance with the FPR.

1/See Charles Neason, B-195723, Sept. 10, 1979, 79-2 CPD 184, and cases cited.

Amtrak's status as a mixed-ownership Government corporation also exempts it from the mandatory procurement provisions of the Federal Supply Schedule. The purchase of property from GSA supply sources is governed by Part 101.26 of the Federal Property Management Regulations (FPMR). These regulations, implementing section 201(a) of the Federal Property and Administrative Services Act of 1949, as amended (40 U.S.C. §481(a)), apply to procurements by "Federal agencies." 1/ More specifically, "all executive agencies" must purchase property in accordance with the provisions of the appropriate Federal Supply Schedule. 2/ Since Amtrak is neither a Federal nor an executive agency of the United States Government, it would not be required to use the Federal Supply Schedule when conducting its procurements. As a mixed-ownership Government corporation, however, Amtrak could request authorization from GSA to use the Federal Supply Schedule on a nonmandatory basis. 3/

Since Amtrak is not required to follow Federal procurement regulations and requirements in its acquisition process, it did not consider these requirements in obtaining the copiers. Contrary to its own procurement requirements, however, Amtrak did not formally solicit proposals from other manufacturers before negotiating with Xerox and Eastman Kodak to purchase the machines. Nor did Amtrak prepare any written comparative analysis, including costs, of alternative machines that might have been obtained.

Amtrak's procurement instructions (dated July 15, 1981) on when a request for quotation (RFQ) should be used, establish procedures for obtaining proposals from a bidder(s) in sufficient detail to permit the most favorable purchase for Amtrak. A formal RFQ is required when it is anticipated that the resulting award will be over $5,000. In situations where a formal RFQ is not used, a written waiver from the manager-purchasing official must be adequately documented in the purchase order file. Also, where the resulting award is expected to be $25,000 or more, a controlled bid procedure is to be followed for obtaining, controlling, and documenting controlled bids from suppliers on specific procurements. We found no documentation that the necessary RFQ procedures were followed, or a written waiver obtained from the

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1/FPMR §101-26.000 (Amendment E-179, Feb. 1976).

2/FPMR §101-26.401 (Amendment E-239, Apr. 1980).

3/See 40 U.S.C. §481(b); FPMR §§101-26.102-1(c) (Amendment E-242, Aug. 1980) and 101-26.401-5 (Amendment E-245, Feb. 1981).

manager-purchasing official who would have approved purchasing copiers without the use of the RFQ. Amtrak officials acknowledged that they could be criticized for failure to follow their own RFQ requirements. The Assistant Director, Facilities and Administration, also stated that by not issuing an RFQ Amtrak may have precluded the acquisition of even more cost-effective copying machines.

Nonetheless, Amtrak purchased the 11 machines from Xerox Corporation and Eastman Kodak at Federal Supply Schedule prices or lower. Although Amtrak obtained prices for the machines by reference to the Federal Supply Schedule, the acquisitions were not made by using supply schedule procedures. Six of the machines had been previously operated by Amtrak under leasing arrangement with a purchase option. Their acquisition price was lower than the price available from the supply schedule because of rental credits received.

COMPARISON OF ACQUISITION OPTIONS USING VARIOUS FINANCIAL ANALYSIS METHODS

In making its decision to purchase the 11 copiers, Amtrak used two methods of financial analysis that showed the purchase to be cost effective when compared with the previous leasing arrangement. One, called the payback period method, showed that Amtrak's initial investment would be recovered through savings realized from the investment in about 1.3 years. With the other method, the internal rate of return on investment method, a 74-percent rate of return was computed--in that in the first year of operations, savings would cover 74 percent of the investment in the new machines.

Copylease, on the other hand, contended that had it been asked officially by Amtrak to bid on the purchase of the machines, it would have offered them at a significantly lower cost. Copylease also contended that under either a lease or purchase option, the present value or discounted cash flow method of financial analysis--which it said is the accepted method rather than the methods used by Amtrak and would therefore be more appropriate--would show Copylease's offer to be more cost effective. We found that each of the methods used by Amtrak, as well as the method advocated by Copylease, had merit.

Amtrak's analysis of the purchase decision

Amtrak computed the payback period--the time it will take to recover its investment from the savings obtained--on the 11 copiers purchased to be 1.3 years. This was calculated by dividing the estimated total cost to purchase the 11 copiers by the estimated savings in annual operating cost of the copiers. When Amtrak first considered purchasing the 11 copiers, it estimated their cost at $284,000--the actual purchase price was $258,495. At that time, it estimated the annual cost of operating the 11 machines and the reproduction center at $135,000, as compared with the $345,000 annual cost to operate the 16 leased copiers and the reproduction center. Based on these estimates, Amtrak projected an annual savings of about $210,000 in operating costs as a result of purchasing the 11 copiers. In computing the payback period, Amtrak also considered the annual paper cost savings of about $13,500. (See p. 4.) The payback period for the purchase of the 11 copiers was thereby computed by Amtrak as follows.

Amtrak Estimate--Purchase Versus Previous Leasing Arrangement

Payback period of 1.3 years	=	$284,000	Estimated total investment to purchase 11 copiers
		$223,500	Estimated annual savings (note a)

a/The $223,500 estimated annual savings consists of the annual savings of $210,000 in operating costs and $13,500 in paper cost savings.

Amtrak also used the internal rate of return on investment method--also referred to as the adjusted rate of return method--in evaluating its purchase of the 11 copiers. Amtrak calculated a 74-percent rate of return on investment for the 11 copiers. Under this method a mathematical formula is used which acknowledges various elements of the investment in arriving at the rate of return, including the cost of capital, the cash flow, and the useful life of the investment, as well as the investment amount. In conjunction with Amtrak officials, we also calculated a 74-percent return by using this method.

Analysis of Copylease purchase option using Amtrak's methods of analysis

Copylease contended that, had it been asked to formally bid on copying machines for Amtrak, in addition to its offer to lease Xerox 4500 copiers, it would have offered machines for purchase by Amtrak at a significantly lower cost. Copylease stated that it made an offer to sell machines to Amtrak and quoted an $8,000 sales price for the Xerox 4500 machines in lieu of the Xerox 5600 machines Amtrak purchased from Xerox. Amtrak stated that no such offer was made. Copylease could not provide any documentation.

Had Amtrak purchased 11 Xerox 4500 copiers from Copylease at $8,000 per machine in lieu of the 11 copiers it purchased, the estimated annual savings in operating costs would be reduced from $210,000 (see p. 9) to $199,000 due to differences in maintenance costs. Under the payback period method of financial analysis, we estimated the Xerox 4500 copiers would have a 5-month payback period computed as follows.

<u>GAO Estimate--Purchase from Copylease</u>
<u>Versus Previous Leasing Arrangement</u>

		$ 88,000	Total investment in 11 Xerox 4500 copiers
Payback period of 5 months	=	———	
		$199,000	Estimated annual savings (note a)

a/The $199,000 estimated annual savings was based on the initial savings estimate of $210,000 made by Amtrak and projected variances in maintenance costs for the Xerox 4500 and the reproduction center. Possible paper savings were not considered since they had not been estimated by Copylease.

Under the internal rate of return on investment method, had Amtrak purchased 11 Xerox 4500 copiers at the Copylease quoted price of $8,000 each, we estimated a 224-percent return on investment would have resulted, as compared with a 74-percent return on investment based on the actual purchases of the Xerox and Eastman Kodak copiers.

<u>Copylease suggested method of financial analysis</u>

Copylease has suggested that Amtrak should have used the present value, or discounted cash flow, method of financial analysis in making cost comparisons on copying equipment alternatives and that its Xerox 4500 copier would have been a suitable alternative to the Xerox 5600 copier purchased by Amtrak. Assuming that the Xerox 4500 copier offered for lease by Copylease would have been a suitable substitute for the Xerox 5600 and using the present value, or discounted cash flow, analysis method, we compared the total cost--including maintenance--to purchase a Xerox 5600 copier with the total cost to lease from Copylease a Xerox 4500 copier over the 5-year period that Amtrak estimated to be the economic life of the Xerox 5600 copier.

Cost data on leasing the Xerox 4500 was obtained from Copylease, while data on purchasing the Xerox 5600 was based on Federal Supply Schedule prices. Our comparison showed that when the annual cash flows for the two alternatives are discounted back to their present value, the present value cost of the Copylease lease alternative for a Xerox 4500 copier is $23,833 less than the present value cost of Amtrak's purchase alternative of a Xerox 5600 copier. (See enc. II.)

If an economic life beyond the 5-year estimated period had been considered, the excess cost of purchasing a Xerox 5600 over the lease cost of a Xerox 4500 would decrease. For example, if an economic life of 7 years had been assumed, which Copylease stated would be the minimum life for both copiers, the excess cost of a Xerox 5600 would have been reduced to $22,551.

CONCLUSIONS

Amtrak's acquisition of the 11 office copiers was cost effective in that it reduced the number of copiers from 16 to 11 machines and significantly reduced Amtrak's copying costs. However, in acquiring these machines, Amtrak did not issue a request for quotations on its copier needs. Amtrak procurement officials stated this may have precluded the purchase of even more cost-effective copying machines.

Amtrak as a mixed-ownership Government corporation is not subject to FPR. It can if it chooses, on an individual acquisition basis, avail itself of Federal Supply Schedule pricing in its acquisitions.

Copylease's offer of Xerox 4500 copiers, in lieu of the Xerox 5600 copiers purchased by Amtrak, cannot be considered an equal substitution of like equipment at a substantially reduced cost. The Xerox 4500 copiers offered by Copylease were used, substantially older machines as contrasted with the new Xerox 5600 machines purchased by Amtrak. In addition, the Xerox 4500 machines lacked certain features that Amtrak considered essential to the success of its efforts in consolidating its copying services.

Under each of the three types of financial analysis methods we examined, the Xerox 4500 copiers offered for lease by Copylease would have been a more cost-effective acquisition than the Xerox 5600 copiers purchased by Amtrak. This would be true _only if_ the special features on the Xerox 5600 (see p. 5), which were considered by Amtrak as essential to the success of its total copying equipment operation, are regarded as unnecessary features.

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Three vice presidents and other Amtrak officials reviewed the draft of our report. Their comments were considered in preparing the final report. Amtrak has concurred with our conclusions.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 10 days from the date of the report. At that time, we will send copies to Amtrak and to other interested parties upon request.

Sincerely yours,

Henry Eschwege

Henry Eschwege
Director

COPYING MACHINES USED AT AMTRAK HEADQUARTERS

Machines previously leased

Number of machines	Model	Annual cost
5	Kodak 150F	$115,080
1	Kodak 150AF	24,900
1	Kodak 100F	23,340
3	Kodak 5400	54,000
2	Kodak 3400	15,720
1	Xerox 7000	12,780
1	Xerox 3109	2,940
1	Xerox 3100	2,940
1	Xerox 3450	8,700
16		$260,400

Replacement machines purchased

Number of machines	Model	Purchase cost
1	Kodak 150AF	$ 33,972
1	Kodak 150F	30,723
5	a/Xerox 5600	142,927
1	Xerox 7000	23,982
1	Xerox 3450	16,454
1	Xerox 3109	6,733
1	Xerox 3100	3,704
11		$258,495

a/Two of the machines are equipped with finishers.

COST COMPARISON BY PRESENT VALUE (DISCOUNTED CASH FLOW) FINANCIAL ANALYSIS METHOD AT 14 PERCENT (note a) FOR PURCHASE OF A XEROX 5600 COPIER VERSUS THE LEASE OF A XEROX 4500 COPIER

		Year 1	Year 2	Year 3	Year 4	Year 5	Total cost	
Purchase of Xerox 5600 copier (note b)								
Purchase price	$28,975						$28,975	
Maintenance cost		$8,772	$8,772	$8,772	$8,772	$8,772	43,860	
Total cash flow	28,975	8,772	8,772	8,772	8,772	8,772	$72,835	
Discounted cash flow	28,975	8,070	7,080	6,210	5,447	4,779		$60,561
Lease of Xerox 4500 copier								
Total cash flow (lease cost)		10,200	10,200	10,200	10,200	10,200	$51,000	
Discounted cash flow		9,384	8,232	7,221	6,334	5,557		36,728
Excess present value (discounted cash flow) cost of the purchase of a Xerox 5600 copier over the lease of a Xerox 4500 copier								$23,833

a/Copylease suggested interest rate.

b/Federal Supply Schedule purchase price and maintenance cost based on 50,000 copies per month volume.