REPORT OF THE COMPTROLLER GENERAL OF THE UNITED STATES

Efforts To Develop Improved Mail Processing Equipment Have Not Succeeded To Date

U.S. Postal Service

The Postal Service is trying to deliver letters promptly and at acceptable cost through attempts to improve mechanization. Three new types of equipment have been unsuccessful to date in providing any substantial improvements over existing equipment in terms of cost or processing ability.

The Postal Service is taking corrective action on recommendations to improve some procurement and operational practices.

GGD-75-96

SEPT. 19, 1975

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

B-114874

The Honorable David N. Henderson
Chairman, Committee on Post
Office and Civil Service
House of Representatives

Dear Mr. Chairman:

This report responds to your request that we review the air culler, advanced facer/canceller, and advanced optical character reader, which represent efforts by the U.S. Postal Service to improve mail processing equipment.

Agency comments have been obtained and are included as appendix II.

Sincerely yours,

Comptroller General
of the United States

Contents

ABBREVIATIONS

AFC	advanced facer/canceller
AOCR	advanced optical character reader
GAO	General Accounting Office
MPLSM	multiple position letter sorting machine

GLOSSARY

Advanced development model	The first functional model built to prove a new concept. The tests of functional performance are conducted under simulated conditions during inplant tests and should be successfully completed before proceeding to the next development stage.
Service test model	The first operationally complete unit built. The test of operational performance is conducted in a live mail environment and should be successfully completed before proceeding to the next development stage.
Preproduction model	The first totally complete unit built in the development cycle, which should meet all performance requirements. All units built subsequently--production-engineered models--conform to the specifications of the PPM.
Production-engineered models	Units deployed in post offices for mail processing.
Electronic enrichers	This unit separates primarily machine readable portions of transit and collection mail for subsequent processing by an optical character reader.

COMPTROLLER GENERAL'S REPORT TO THE COMMITTEE ON POST OFFICE AND CIVIL SERVICE HOUSE OF REPRESENTATIVES

EFFORTS TO DEVELOP IMPROVED MAIL PROCESSING EQUIPMENT HAVE NOT SUCCEEDED TO DATE
U.S. Postal Service

D I G E S T

Mechanization advancements must be made for the U.S. Postal Service to deliver letters promptly and at acceptable cost to the citizen.

Attempts to improve letter service through development of three types of machines--the air culler, advanced facer/canceller, and advanced optical character reader--have not been successful. These machines offer no apparent advantages over existing equipment. (See chs. 2 to 4.)

GAO sees need for improved procurement and operational practices. The Service has had no formal policy regarding "overlapping contracting"--proceeding to the next phase of development before completing the current phase.

Likewise, the Service has had no formal policy for "parallel contracting"--awarding contracts simultaneously to two or more firms for development of machinery to perform an identical function. "Overlapping" and "parallel contracting," although sometimes justified, generally result in increased procurement costs. (See p. 14.)

Performance testing and evaluation of equipment being developed were largely under the control of project management. The precise procedures for testing were established after contract award.

The contractor and Service engineers technically responsible for the various projects were also responsible for their evaluation. This dual role of evaluating their own efforts could result in loss of objectivity and continued development of an item when

mounting evidence indicates that success is unlikely. (See p. 14.)

Cost-benefit analyses should be performed periodically to provide top postal management with a continuing overview of technical progress, evaluated in terms of costs to be incurred and benefits to be realized, if the development work continues and the new equipment is deployed in the postal system. Such analyses did not take place in the contracts GAO examined. (See p. 15.)

RECOMMENDATIONS

The Service should justify overlapping contracting in advance. Performance testing of developmental equipment should be controlled by a group other than project management. Periodic cost-benefit analyses, using actual performance experience, should be made during development to reassess desirability of continued effort.

AGENCY ACTIONS

The Service says it has been:

--Requiring more careful, formal justification of procurement actions, particularly overlapping or parallel contracting.

--Separating development function from test and evaluation.

--Making cost-benefit analyses conducted at the conclusion of the testing phase the basis for recommending deployment.

In addition, the Service commented on problems experienced during development, current status, and future development plans for the equipment. (See pp. 5, 9, and 13.)

CHAPTER 1

INTRODUCTION

On April 25, 1974, the Chairman, House Committee on Post Office and Civil Service, requested that we review the process the U.S. Postal Service used to develop certain mail processing equipment. The Committee was specifically interested in acquisition cost, performance characteristics, manpower and other cost savings, and investment alternatives for the air culler, the advanced facer/canceller (AFC), and the advanced optical character reader (AOCR).

Salaries account for most past and projected Service cost increases. Although Service productivity has been increasing, these increases have not offset the growth in postal workers' earnings. Given the increasing mail volume and the labor-intensive nature of the Service's operations, mechanization is necessary for the Service to achieve its mandate of self-sufficiency and to provide higher quality mail service.

Since the late 1950s, much Service effort to mechanize letter mail processing has been based on the Mark II facer/canceller and the multiple position letter sorting machine (MPLSM). To increase efficiency and improve service, the Service is engaged in research, development, and engineering programs for greater use of electro-mechanical and electronic mail-handling systems. The air culler, AFC, and AOCR are part of this effort.

The air culler system was intended to be a "rough culling" device for separating collection mail (picked up at collection boxes and brought to postal facilities for processing) into machinable and nonmachinable mail. This mail includes letter mail--mail that can be processed by machine--small parcels, rolls, hotel keys, and other bulk items that must be processed manually.

The Service intended to feed collection mail directly into the air culler. The mail would pass into a chamber where air pressure would force lightweight mail out the top of the chamber onto a mail belt which would carry the mail to additional mechanical processing. Heavier pieces of mail would fall to the bottom to be processed manually. Under the present system, all rough culling of collection mail is performed manually.

The AFC is a machine for facing--finding the front of envelopes--and canceling stamps on letter mail. The AFC was intended to be faster, be less error-prone, require less maintenance, cause less damage, and be more able to separate mail requiring special processing than the Mark II facer/canceller which has been in use since the late 1950s. Operating principles of the AFC and Mark II are similar. Both sense the phosphorescent or fluorescent-tagged stamp or indicia to position the mail for facing and canceling.

The AOCR is the most sophisticated and complex optical character reader under development by the Service. This machine is a computer-controlled device that translates alphanumeric characters into computer-usable signals. The mail transport units of the machine feed letters to scanner assemblies which function like eyes. The address is read, and the mail is then either mechanically carried to one of several hundred bins or rejected if unreadable.

CHAPTER 2

AIR CULLER

Our review of the air culler showed:

--It had not achieved the performance level intended by the Service.

--It did not appear to be an economical alternative to the present manual culling operation.

COST AND CONTRACTING

The Service has spent about $2 million on the air culler. The initial development contract was awarded on a sole-source basis on June 22, 1968. This contract provided for development of one advanced development model 1/ and two service test models 1/ at an estimated cost of $281,000 with a June 30, 1969, completion date. Contract modification resulted in a final contract price of $624,678 and extended the completion date to February 23, 1972.

Although the service test models obtained on the above contract had not been field tested, the Service, on June 23, 1972, entered into a follow-on, sole-source contract for the design, fabrication, and testing of 1 preproduction 1/ and 13 production-engineered 1/ air cullers, as well as manuals and a maintenance training course. There were 14 amendments to this contract, which raised original contract costs from $1,043,250 to $1,445,268 and extended the completion date about 1 year.

PERFORMANCE

Personnel of the Research and Engineering Department conducted field tests of the advanced development model of the air culler between April 12, 1971, and June 30, 1971. They reported to the Director, Research and Development, that use of the air culler had markedly increased productivity.

Further development efforts, however, have not produced an air culler capable of meeting performance specifications. The performance specifications contained in the air culler contract, for production-engineered models, provide, in part, that:

1/See glossary.

--Collection mail be processed at a rate of 100,000 pieces an hour with an average error rate of about 1 percent. (Error rate is the ratio of the number of machinable mail pieces sorted to the nonmachinable mail belt to the number of collection mail pieces processed.)

--The maximum operating staff is one feed operator.

--Machinable mail that is damaged to the extent that it cannot be further machine processed is not to exceed 1 in 50,000 pieces.

Tests performed by the Service and us showed that the air culler was not capable of operating in accordance with the above specifications. On at least three occasions, tests were run to determine whether the air culler was able to process unculled collection mail. Two of the tests were initiated by the Service and the third was performed at our request. The tests were run at three different postal facilities.

In each case, the air culler failed to perform in accordance with specifications. The two tests performed by Service personnel were terminated after a short time because of inadequate culling of the mail and damage to letters and bundles. The test we requested, involving 22 bags of collection mail, showed that about 50 percent of the flats--oversized envelopes--ended up on the machinable mail belt and a large quantity of machinable mail ended up on the nonmachinable mail belt.

To compensate for the inability of the air culler to process unculled collection mail, mail was being manually preculled and postculled. This practice is contrary to the requirement that a maximum of one feed operator operate the air culler. We noted as many as five mail handlers providing manual support to this operation.

Had the Service performed adequate field testing of service test models before contracting for production-engineered models, the air culler's inability to meet performance specifications would have been established and follow-on procurement might have been avoided.

Because of limited operating capability of the air cullers, few have been deployed. Of the 17 air cullers procured by the Service, 5 are in operation, 8 are in storage, and 4 are being used for experimentation and parts.

ALTERNATIVES

Because of performance deficiencies, it is questionable whether the air culler is more economical than the current manual culling operation. In 1969 the Service analyzed the cost of four different methods of culling collection mail, including the air culler and manual culling method. Analysis showed that the air culler was far more economical than alternative methods of culling mail.

Because the study was performed before development of the air culler, costs of the air culler were calculated from design criteria and performance expectations. The study report recommended that development be continued, subject to substantiation of the data used and availability of new data affecting the analysis.

As mentioned previously, the air culler has not performed in accordance with design specifications and, therefore, it is necessary to provide greater manual support than originally planned. We requested an updated economic analysis taking these factors into consideration, but Service officials were unable to locate one and did not know whether one was performed before contracting for 13 production-engineered models. Service officials had no plans to purchase additional air cullers.

AGENCY COMMENT

The Service agrees the air culler has not been successful as a stand-alone machine. Tests and evaluations indicated that its performance was unfavorable from an economic standpoint. Unfortunately, several machines were purchased before the tests and evaluations were completed. However, since the air culler has proven effective in controlling the flow of mail, the Service is currently testing it in connection with the development of a new automated mail preparation system. (See app. II.)

CHAPTER 3

ADVANCED FACER/CANCELLER

Our review of the AFC showed that:

--Estimated production costs are twice the cost of existing alternative equipment.

--The contractor, to date, has been unable to develop a machine capable of meeting performance objectives.

--Performance would have to improve and cost would have to be reduced before the AFC would be an attractive alternative to the present equipment.

COST AND CONTRACTING

Since June 1968 the Service spent or contracted to spend about $9.4 million to develop an improved facer/canceller. In addition to 4 advanced development models of the AFC, the Service has also received 12 service test models and has contracted for 14 production-engineered models. 1/ However, because of technical difficulties, the contractor has not delivered any production-engineered models.

Three contracts have been awarded thus far for AFC development. As shown on the following table, contracts for various stages of development have overlapped.

Contract Award and Completion Dates

Model	Award date	Contract completion date	
		Original	Revised
Advanced development	6-21-68	6- 9-69	5- 4-73
Service test	3-10-72	5-23-73	8-31-74
Production-engineered	6-28-72	6-15-73	11/75

The contract for the service test model was awarded about 14 months before completion of the advanced development model. The contract for production-engineered models overlapped the completion dates for the advanced development and service test models by about 10 and 26 months, respectively.

1/See glossary.

The difficulties experienced, and still being experienced, by the Service in bringing this piece of equipment on line are best illustrated by the increasing unit cost of the AFC as it progressed through the various stages of development.

	Contract quantity	Contract value Start	Contract value End	Unit cost
Advanced development	3	$ 98,753	$1,977,811	$ 494,452
Service test	12	1,350,600	2,901,493	241,791
Production-engineered (note a)	14	2,723,795	-	-
Production-engineered (note a)	2	1,594,941	4,546,941	2,273,470
Total contract value			$9,426,245	

a/The original contract provided for delivery of 14 units. All funds were expended and no units were delivered. The contract was modified to provide additional funds and reduced the number of units to be delivered to two.

The facer/cancellers currently being used by the Service were purchased in December 1973 at a unit cost of approximately $25,000, while the latest estimate for production quantities of the newest AFC exceeds $55,000 a unit.

PERFORMANCE

Project management in the Research and Engineering Department devised, monitored, and reviewed the field tests the contractor conducted of the advanced development models and service test models of the AFC. These tests took place as the units were delivered to various post offices. The reported results helped determine that the program would be continued to the service test and production engineered stages.

Most field tests for the service test models took place, however, after the production engineered contract was awarded. The AFC was to be faster, make fewer errors, require less maintenance, and damage less mail than the canceling machine currently in operation. Development efforts, though, have not yet succeeded in producing an AFC capable of meeting performance specifications. Moreover, at the time of our fieldwork, technical problems had prevented the contractor from producing a machine which outperformed alternative equipment.

In 1973 the Service studied the performance of the advanced development model of the AFC and the facer/canceller currently in use. The study concluded that there was very little difference in the performance of the two machines and that there was no evidence of man-hour savings from using the AFC.

Some of the technical problems experienced by the contractor in developing production models have been inability to achieve processing speed, mechanical parts failures, jam problems, and cancellation problems. In a proposal dated June 4, 1974, the AFC contractor proposed 48 pages of corrections or improvements.

An advantage of the AFC was to have been a reduction in maintenance time and costs. We attempted to evaluate its success in this area at two post offices using the AFC. Although detailed records were not maintained, those available indicated maintenance time for the AFC was greater than for existing alternative equipment. Service personnel informed us that extensive maintenance work had been performed on the AFC. However, Service engineering personnel believe technical problems can be overcome.

ALTERNATIVES

While the Service prepared an economic evaluation, it did not compare the AFC to the facer/canceller presently in use.

In February 1973 an economic evaluation was prepared and submitted to the Service's Capital Investment Committee to justify purchase of 150 AFCs. The evaluation concluded that the AFC was economically feasible. However, it did not consider alternative methods, and there was no detailed information supporting the study. In April 1973 the Capital Investment Committee approved purchase of 150 AFCs. This approval was subsequently withdrawn when the contractor failed to furnish an acceptable proposal guaranteeing satisfactory performance.

Even if the technical problems with the AFC are resolved, it still might not be an economical alternative to the existing equipment, considering the relative costs and merits. Therefore, before a decision is made to acquire production quantities of new equipment, a study should be made comparing the costs of operating the equipment with equipment currently available.

AGENCY COMMENT

The Service acknowledges that the AFC has encountered numerous development problems. However, the Service believes that the AFC can become a viable machine with certain improvements. Recently, field tests were completed comparing a redesigned AFC to existing equipment. Preliminary data indicated that the AFC can operate faster as well as reduce mail damage. A decision on producing these machines will be made within the next few months. (See app. II.)

CHAPTER 4

ADVANCED OPTICAL CHARACTER READER

The AOCR:

--Performed well when processing a specialized mail stream. 1/

--Did not appear to offer either service or economic benefits over existing mechanical sorting methods.

COST AND CONTRACTING

In 1970 parallel development contracts were awarded to two firms for design work and hardware models of the AOCR. The initial value of these contracts was about $13.6 million. One contract was terminated in September 1973 after costs totaling about $13.4 million had been incurred. The other contract resulted in the production of one AOCR, located at the General Post Office, New York City, at a cost of about $14.2 million.

Contract files contained no formal justification for using parallel development contracts. However, Service officials believed it was justified because of the technical nature of the equipment. They stated that no formal policy existed regarding use of parallel contracting.

Service records show that the one contract was terminated for the convenience of the Government. Service officials stated that, because of the state of development and the cost incurred, they felt that further development was no longer justified or feasible.

There is no current estimate of the cost of mass-producing the AOCR; however, in March 1973 the contractor wanted $6 million to produce an additional AOCR. According to a Service official this is the best estimate available. In addition to the AOCR's acquisition cost, the Service estimated that it would spend an additional $5 million in maintenance and support over a 5-year period. These estimates appear to be in line with actual experience.

1/Specialized mail stream means machine-imprinted mail conforming to particular formats, fonts, and sizes.

These estimates did not include the cost of electronic enrichers, 1/ used when the AOCR is used to sort incoming mail. The last contract awarded by the Service was for designing and constructing eight enrichers at a total price of $1,452,750. Seven of these machines are currently being used with the AOCR at the General Post Office.

About 18 people are required to operate the AOCR when working on outgoing mail; about 4 more are needed when working on incoming mail because of the need to operate enrichers.

PERFORMANCE

Research personnel, supported by New York mail handlers, conducted field tests of the AOCR in November and December 1972. Because the machine did not meet the contract's performance specifications during these tests, the Research and Engineering Department spent more money to improve the machine's performance. At the time of our fieldwork, performance of the machine was approaching, but had not yet met, its contract specifications.

The AOCR was operated about 20 hours a day at the time of our review and performed satisfactorily when processing a specialized mail stream. The primary type of mail processed on the AOCR is first-class metered mail. The machine is required to read only imprinted addresses and can process over 60,000 letters an hour. Its output is equivalent to that of two letter sorting machines.

The AOCR is used about 16 hours a day for outgoing mail and 4 hours a day for incoming mail. When operating on incoming mail, it is necessary to use electronic enrichers to segregate electronically readable mail from that which is handwritten or otherwise illegible. Although the enrichers enable the AOCR to operate more efficiently, the cost of the enrichers and their support personnel increased the costs of sorting this type of mail.

An unusual aspect of AOCR operations is the amount of time it is operated each day. As in other cities, New York's mail volume occurs in peaks of several hours duration. A General Post Office official said about 75 percent of the workload was received or dispatched in a 7 to 8 hour period. In spite of this peaking, high utilization--about 20 hours daily--is achieved on the AOCR. This utilization differs markedly from that of other letter sorting equipment at the General Post Office. We observed the AOCR in operation at times when only 1 or 2 of the 13 MPLSMs were in use.

1/See glossary.

When there is a choice between using MPLSMs or the AOCR, mail is directed to the latter. A Service document stated that the AOCR and MPLSM were fighting for the same limited amount of mail during certain hours of the day. Although the General Post Office has considerable mail volume, much of it is handwritten or otherwise illegible to the AOCR. The major source of mail, outside the General Post Office, which is suitable for the AOCR appears to be Church Street Station. Much of this mail comes from large business firms and is delivered in excellent condition in trays.

We found that mail which used to be processed by Church Street Station on OCR I units was being sent to General Post Office for processing on the AOCR. This routing of mail to the AOCR has resulted in a declining use of the Church Street equipment and permitted increased use of the AOCR at the General Post Office.

ALTERNATIVES

The principal alternative to the AOCR is the MPLSM. Service documents and our review indicated that the volume of outgoing mail processed on two MPLSMs was about the same as on one AOCR. Both types of machines can sort incoming mail. Available information indicates that the error rate of AOCR equipment is lower than that of the MPLSM. However, because of the limited and conflicting performance data, an overall performance comparison cannot be made.

If the performance of two MPLSMs is about equivalent to that of an AOCR, then the costs associated with acquiring, maintaining, and operating the equipment would be the controlling factor in determining which machine is the best investment. An AOCR enjoys a substantial advantage over MPLSMs in the area of operating personnel--approximately 18 employees compared with about 34 employees used to operate 2 MPLSMs. However, the high acquisition and maintenance cost associated with an AOCR appears to offset the personnel advantage.

At $6.3 million AOCR would cost about $6 million more than two MPLSMs costing about $150,000 each. Based on a 10-year life this would represent an annual cost difference of $600,000. Maintenance costs for the AOCR would be about $1 million more annually than for the MPLSMs. Thus, the annual cost advantage of the MPLSMs is about $1.6 million, before considering operating personnel costs. At current wage levels, and assuming a two-shift operation, the AOCR's personnel cost advantage would be about $450,000 annually--not enough to offset its other comparatively high costs.

AGENCY COMMENT

The concept that led to developing the AOCR was based on capitalizing on the technologies of large scale integrated computers. Service analyses, however, determined that this approach is not the most economical. Thus, there are no plans for deploying the AOCR. (See app. II.)

CHAPTER 5

CONCLUSIONS, RECOMMENDATIONS, AND AGENCY ACTIONS

Mechanization advancements must be made for the Service to deliver letters promptly and at reasonable cost. The Service is trying to achieve this objective.

Attempts to improve mechanization through development of the air culler, AFC, and AOCR have not been successful. The equipment developed to date does not appear to offer substantial improvements over existing equipment in terms of cost or processing ability. Work under existing contracts is continuing; however, the Service said it had no current plans to procure additional quantities of this equipment.

We noted some procurement and operational practices which should be improved.

OVERLAPPING CONTRACTING

The Service had no formal policy regarding overlapping contracting--proceeding to the next development phase before completing the current development phase--or for parallel contracting--simultaneously awarding contracts to two or more firms for developing an item to perform an identical function.

The Service used overlapping contracting in the case of the air culler and AFC. Overlapping and parallel contracting, although justified under certain circumstances, generally result in increased procurement costs. The Service should establish a policy setting forth the circumstances under which these practices can be used.

PERFORMANCE TESTING AND COST-BENEFIT ANALYSIS

Performance testing and evaluation of equipment being developed were largely controlled by project management. The precise procedures for testing were established after contract award. The contractor and Service engineers technically responsible for the various projects were also responsible for their evaluation. This dual role of determining the success or failure of their own efforts could result in loss of objectivity and continued development of an item when mounting evidence indicates that success is unlikely.

If top Service management is to be adequately informed of progress and problems encountered in meeting performance requirements, test and evaluation activities should be controlled by persons or units independent of project management.

Cost-benefit analyses should be periodically performed to provide top management with a continuing overview of technical progress, evaluated in terms of costs to be incurred and benefits to be realized, if the development work continues and the items are deployed in the postal system. Such analyses did not take place in the contracts we examined.

In the cost-benefit analyses that were conducted by the Service, there was a reliance on "estimates of savings" based upon the anticipated performance of the machine. Updated analyses should be made on the basis of actual performance data.

RECOMMENDATIONS TO THE POSTMASTER GENERAL

We recommend that the Service require that overlapping contracting and parallel contracting be justified before being implemented.

We also recommend that (1) performance testing of developmental equipment be placed under the control of a group other than project management and (2) updated cost-benefit analyses be made during development using actual performance experience to reassess desirability of continued effort.

AGENCY ACTIONS

The Service has advised us that it has been:

--requiring more careful, formal justification regarding procurement actions, particularly where overlapping or parallel contracting is involved;

--separating the development function from test and evaluation; and

--making cost-benefit analyses, conducted at the conclusion of the testing phase, the basis for recommending deployment.

U.S. House of Representatives
COMMITTEE ON POST OFFICE AND CIVIL SERVICE
207 CANNON HOUSE OFFICE BUILDING
Washington, D.C. 20515

B-114874 April 26, 1974

Honorable Elmer B. Staats
United States General
Accounting Office
441 G Street, N. W.
Washington, D. C. 20548

Dear Mr. Staats:

As you know, our Committee is interested in how well the Postal Service is managing and contracting for mechanization. As a result of recent newspaper articles criticizing Postal Service mechanization, we are interested in having your office review specific pieces of equipment, namely the air culler, advanced facer-canceller and advanced optical character reader, being developed or deployed by the Service.

Our interests include, but are not limited to, equipment acquisition cost, performance characteristics, manpower savings and cost reduction, if any, investment alternatives and the general effectiveness of Postal Service's transactions related to these projects.

A report, as soon as possible, will be appreciated.

Sincerely yours,

T. J. Dulski

Thaddeus J. Dulski
CHAIRMAN

APPENDIX II

THE POSTMASTER GENERAL
Washington, DC 20260

July 9, 1975

Mr. Victor Lowe
Director General Government Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Lowe:

Thank you for the opportunity to comment on the draft report entitled "Review of Selected Mail Processing Equipment."

Most of the events and decisions discussed in the report took place during the period 1968-73 when the Postal Service was trying to accelerate the development of a number of potentially promising mail processing equipment concepts. Parallel and overlapping contracts were at times used as part of this acceleration effort, even though it was recognized that such measures do entail some risks and added expense.

Three specific items of equipment development are discussed in the report and I will comment on each in turn.

1. The Air Culler was not a successful development product as a stand-alone machine. Our tests and evaluations in 1973 indicated that its performance was unfavorable from the standpoint of measurable economic benefits. Regrettably, several machines were purchased before tests were completed so, rather than abandoning an investment, we subsequently deployed them to offices having unique circumstances permitting their beneficial use. In addition, since the air culler did prove to be an effective mail pacing device, we are currently testing it along with other alternatives in the development of a new automated mail prep system.

APPENDIX II

2. The Advanced Optical Character Reader is presently operating in New York, sorting one million pieces of mail daily over a period of approximately 20 hours a day, 6 days a week. Training of postal maintenance employees who will assume complete AOCR maintenance responsibility by January 1976 is now underway. The concept that led to the development of the AOCR was based on capitalizing on the technologies of large scale integrated computers. Our analyses, however, determined that this approach is not the most beneficial from a return on investment standpoint. Thus, we have no plans for deployment of this system. Nevertheless, recognizing that the development cost has been largely expended, we intend to continue to use the system in New York where it is operating satisfactorily and will contribute to the operations there. An alternative OCR design now in use in our Boston installation does appear at this point to be economically and operationally beneficial. We expect to make a decision in respect to any future application of this equipment early this fall.

3. The M-36 Facer Canceler encountered numerous development problems leading to a suspension of the program a little more than a year ago. In an extensive review of the project it was concluded that the M-36 could be a viable machine with certain improvements and a target for completed development by November, 1975 was established. We have just completed side-by-side field tests of the first model of the redesigned M-36 equipment and an existing Mark II facer-canceler in Miami. Our preliminary data indicates an average throughput substantially greater than the Mark II as well as significant reduction in mail damage. Additionally the M-36 has the capability of separating a special class of mail from the mail stream providing an operational benefit not available with the Mark II. A decision on production of these machines will be made within the next few months.

Although mistakes were made in the course of our 1968-73 acceleration effort, we have also learned from our experience and have taken action to improve developmental work for the future, including the specific actions which the report recommends:

1. We are requiring more careful, formal justification regarding procurement actions, particularly where overlapping or parallel contracting is involved.

2. In September 1973 we separated organizationally the function of testing and evaluating new equipment from the function of developing it, and periodic cost-benefit analyses are being made during development, using actual performance experience to reassess the desirability of continued effort. In addition, at the conclusion of the testing phase, cost-benefit analysis as the basis for recommendation for deployment is also verified by a special Review and Analysis Division in our Finance Department.

In effecting improvements in our procedures governing developmental work, we have benefitted from our discussions with your staff and are grateful for the suggestions received from them.

Sincerely,

Benjamin F. Bailar