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        The Postal Service faces advancements in communications
technologies which are expected to eliminate mail. It is
estimated that electronic systems may eventually divert 20% to
50% of first-class mail. However, the remaining mail, whatever
the volume, will need to be handled in the most economical
manner. Since electronic technology has the potential for
reducing mail handling costs and offering better service, the
Postal Service has little choice but to continue efforts to use
this technology. The greatest impact cf electronic technology
will involve transaction mail such as orders, invoices, bills,
and payments which account for about 70% of all first class
mail. Electronic funds transfer is expected to reduce the use of
the mails for financial transactions. Since the late 1960s, the
Service has been conducting feasibility studies which have
concluded that electronic message system could be both
technically and economically feasible. Currently, there are two
basic efforts directed toward using electronic message systems
-- research and development of an electronic message system and
evaluation and testing of existing electronic equipment for
postal application. Prospects for widespread use of electronic
message systems are unknown but involve several factors: the
volume of mail that could be diverted to electronic funds
transfer, the amount of competition that can be expected from
the private sector, and the economic benefits to the Service.
(RRS)

United States General Accounting Office
Washington, D.C. 20548

STATEMENT OF
WILLIAM J. ANDERSON, DEPUTY DIRECTOR
GENERAL GOVERNMENT DIVISION
BEFORE THE
SUBCOMMITTEE ON POSTAL PERSONNEL AND MODERNIZATION
OF THE
COMMITTEE ON POST OFFICE AND CIVIL SERVICE
HOUSE OF REPRESENTATIVES
ON THE
UNITED STATES POSTAL SERVICE

Mr. Chairman and Members of the Committee:

I appreciate your invitation to present our views on

the potential Postal Service application of electronic systems

for transmitting mail.

Today, the Service faces advancements in communications

technologies which are expected to eliminate mail. Studies

have been made predicting that electronic systems may eventually

divert some 20 to 50 percent of first-class mail. Should these

forecasts prove correct, the Service's goal of financial self-

sufficiency at reasonable rates would be more difficult than

ever. Despite losses in volume, the Service's role of providing

a nationwide physical delivery network will still be needed.

But, the residual volumes would be more costly per piece to

handle, and in all likelihood the Service would require larger

subsidies and/or higher postage rates.

The Service recognizes that some mail will be lost. However, it also believes it may be able to use electronic technology in connection with its inherent strength of a nationwide delivery system. The Service for years has been studying the potential of electronic technology for reducing mail processing/transportation costs (40 percent of postal expenses) and for offering better service. Whether or not this potential can be realized is not presently known.

We believe that private sector use of electronic technology will cause mail volumes to decline although to what extent is uncertain. Nevertheless, the remaining mail, whatever the volume, will need to be handled in the most economical manner. Since electronic technology has the potential for reducing mail handling costs and offering better service, we believe the Service has little choice but to continue its efforts to use this technology. Further, a more efficient Service would have the added benefit of minimizing the volume of mail that would be diverted.

Today, I would like to summarize the electronic communications challenge facing the Service, the efforts it has been making to adopt emerging technologies, and why we believe these efforts should be continued.

THE THREAT FACING THE SERVICE

Historically, use of the mails has been the primary method for physical exchange of information. Today, we are on the threshold of what has been termed the "communications revolution." New systems are increasing the ways information

can be exchanged by offering transmission of data without physical handling or delivery. As a result, these systems are being viewed as a substitute for the mails.

A number of studies have been made on the impact electronic transmissions will have on mail volumes. These studies all conclude that major diversions of first-class mail will occur, and differ only as to the timing and extent of the diversion. By all accounts, the biggest impact would involve transaction mail (i.e., orders, invoices, bills and payments), which accounts for roughly 70 percent of first-class mail.

The Commission on Postal Service estimated a 1985 first-class mail volume of 56 billion pieces, roughly that of today (54 billion pieces), but 23 percent less than it would be in the absence of electronic systems. A Service-funded National Research Council study predicted that electronic systems offer the potential of eventually replacing as much as 50 percent of all first-class mail.

Electronic funds transfer is expected to reduce the use of the mails for financial transactions. For example, banks are beginning to offer automatic telephone payment systems for utility and credit card bills. The Department of Treasury is already using electronic technology to transfer funds directly to receipients' bank accounts instead of mailing the checks. In March 1978 over 7 million payments were made in this manner. We may also see the use of point-

of-sale devices by retail stores which would eliminate
the need for bills and bill payments for purchases made.

Another result of the emerging technology is electronic
message systems for sending and receiving correspondence.
Electronic message systems permit correspondence from
sender to receiver without physical handling. A good
example of this is facsimile transmission. Presently, there
are about 100,000 facsimile terminals processing 120 million
messages annually with volume increasing 35 percent yearly.
Federal agencies, including the Postal Service and GAO,
are also using facsimile equipment to transmit messages.

One private firm recently began offering what is
purported to be the first "electronic mail" service with
facsimile and expects to have about 400 electronically-linked
outlets nationwide by the end of 1978. You may have also
heard recent advertisements for a facsimile device called
QWIP with a slogan to the effect that QWIP is faster than ZIP.

THE SERVICE VIEW OF ELECTRONIC TRANSMISSION

The Service has realized for several years that elec-
tronic transmission will impact on mail volumes. Its
response has been to keep abreast of the technology develop-
ments and attempt to use these developments where possible.

The Service recognizes the inroads already being made
in its first-class mail volume by existing electronic communi-
cation systems, particularly electronic funds transfer.
Though the ultimate effect electronic funds transfer systems

will have on mail volumes is uncertain, the Service does not believe any action on its part would substantially change the outlook.

With respect to electronic message systems, however, the Service believes it may be possible to use these systems for reducing physical transportation and processing costs for messages and correspondence. From a legal standpoint, the Service believes that as long as an electronic message system has physical delivery as the final step, data put through the system would meet the definition of a "letter" under the Private Express Statutes. However, electronic systems offering point-to-point transmission of messages would be the purview of the private sector.

The Service has forecast that 6.2 billion pieces of first-class mail will be diverted to electronic funds transfer systems by 1985, but does not feel there is sufficient information to make a comparable projection as to the impact message systems may have on mail volumes.

SERVICE INVESTIGATIONS INTO USING
ELECTRONIC MESSAGE SYSTEMS

In the late 1960's, the Service began contracting for feasibility studies. Over the years, a number of studies were performed which concluded electronic message systems could be both technically and economically feasible. These studies represented building blocks for the Service efforts that were to come later.

The Service has also conducted three tests of electronic message transmission. Two of these involving facsimile transmission were unsuccessful. The third test was of Mailgram--proposed by Western Union in 1968. Today, approximately 100,000 Mailgrams are transmitted daily to terminals located in 140 post offices.

Currently, the Service has two basic efforts directed toward using electronic message systems--(1) research and development of an electronic message system, and (2) evaluation and/or testing of existing electronic equipment for postal application.

Electronic message system

The Service has established a group for the purpose of developing and testing an electronic message service system. Internally, the Service has a staff of 25 devoted to the project and receives technical and market research support from other postal units. Technical support is also received from several Federal agencies.

In May 1976, the Service awarded a $2.3 million contract to RCA Corporation to define what an electronic message service system should consist of and what it should be used for. Initially, 52 potential alternatives were identified and evaluated in terms of investment cost, manpower requirements, operating cost, technical risk and cost per message. The Service and RCA have narrowed the alternatives to three possible candidates, any of which would involve capital costs of over $1 billion to construct.

Available details on these candidates have been previously supplied to the Subcommittee staff and are also attached to my statement.

Concurrent with the RCA study effort, the Service has spent over $4 million on two equipment development contracts. Earlier technical studies had noted that major technical limitations to an electronic message service system existed in the areas of speed and reliability for electronic scanners and printer/paper handling equipment. At present, the scanner equipment is being fabricated and the printed/paper handling equipment is being tested.

Several other efforts have been proposed for this project. These include a $450,000 study contract to determine how mail preparation systems of major mailers could be linked to an electronic message service system, a $3 million effort to build a proto-type system to test service features and performance characteristics, and a $250,000 planning contract for live testing of mail.

At this time, no decisions have been made to implement any of these plans.

Service efforts toward using existing electronic equipment

The Service has also been exploring the use of existing electronic equipment to offer new services. Braniff Airlines and the Service conducted an experiment called "Electronic Ticketing" for customer convenience by having tickets transmitted to a post office terminal for next-day delivery. Although

the test proved to be successful from the Service's viewpoint, it was recently terminated because of opposition from travel agencies.

Presently, the Service is considering the development of an "Urgent Message Service" using facsimile. It differs from Mailgram in that an exact duplicate would be received instead of a message with the Mailgram format. As now planned, the service will be established with 6 message-sending and 31 message-receiving cities across the Nation. A marketing study is being conducted to determine its feasibility. The results should be known by May 1978, and a decision as to whether to pursue the project will be made then.

The Service is also considering an extension of Mailgram. It would be aimed at major mailers with 10,000 or more messages a month which are computer originated, but not as time critical as Mailgram messages. This extension would provide for nationwide second-day delivery and be less expensive than current Mailgram service. A decision, though, on whether to test this concept may be several months away.

The Service has also just entered into a joint venture with Communications Satellite Corporation (COMSAT) to test an international message service using satellites for transmitting messages. A field test will begin in about one year to determine whether it should become a permanent service. The Service also expects this test to provide useful information on the practicality of a domestic electronic system.

OUTLOOK FOR ELECTRONIC MESSAGE SYSTEM UNCERTAIN

Although the Service has made limited use of existing electronic systems, such as Mailgram, and is continuing to test others on a cooperative venture basis, it must be remembered that these are specialty services at premium prices. The real economic potential of electronic technology to the Postal Service lies in the use of systems that would be less expensive than the physical processing and transportation of mail. To date, the Service does not believe it is in a position to implement an electronic message system that would drastically alter the mail handling system and won't be for at least several years.

On the technical side, the major hurdle yet to be overcome is in the development of equipment which will operate at high speeds with low error rates. Service officials have pointed out that they believe it is just a question of time before solving these technical matters.

The major unanswered question at this time is market potential--would such a system be used by the public and would the level of acceptance make it cost beneficial to the Service? Though some market research has been performed, the Service believes it has not been sufficient in its depth or scope to make a case for or against electronic systems. Further, the Service does not believe additional market analysis at this time would provide the answer.

However, who would use an electronic system, what service offerings should be included, and what volumes

would be achievable would be critical both to the investment analysis and to the ultimate success of any system adopted by the Service.

Frankly Mr. Chairman, the Service's prospects for widespread use of electronic message systems are unknown. However, we do know that several interrelated factors will come into play. These are:

--the volume of mail that could be diverted to electronic funds transfer,

--the amount of competition that can be expected from the private sector for electronic message transmission, and

--the economic benefits to the Service of an electronic message system.

It is clear to us that the mail ultimately diverted to electronic funds transfer will represent lost volumes to the Service because the postal function will not be needed. Further, private sector services offering point-to-point electronic transfer of messages would potentially divert mail from a Service-operated electronic message system.

Should the Service ultimately retain sufficient volumes of mail amenable to electronic handling, it should be noted that not all first-class mail could be handled this way. Some mail such as greeting cards or personal letters would most likely still be physically handled. Additionally, some patrons may desire physical processing of their mail even though it could be electronically transmitted. Thus, a Service electronic system would result in two mail processing systems bringing us to the crux of the matter.

Any electronic message system would have to be financially attractive through additional revenues and savings generated by reducing costs and/or increasing productivity. At this time, there are no estimates of potential revenue or savings. In the absence of hard data on (1) diversion of mail volumes to electronic funds transfer and private sector message transmission services, and .(2) market potential of a Service electronic message system, it would be impossible to develop reliable revenue and cost/benefit estimates on which to base a decision.

THE SERVICE SHOULD CONTINUE ITS ATTEMPTS TO USE ELECTRONIC TECHNOLOGY

The issue before us today is whether the Service should attempt to use electronic technology. We believe, the Service has little choice but to proceed in this direction.

We recognize that some unknown part of first-class mail volume will be diverted by electronic systems. Since the remaining volume would mean increased handling costs per piece, the current financial problems of the Service would be aggravated necessitating increased postage rates and/or higher subsidies.

Regardless of what the future first-class volume will be, the Service will still need to handle it in the most economical manner. The more efficient the Postal Service can be, the more likely it would be able to avoid mail volume losses. Thus, it appears to us that the potential advantages of electronic systems in terms of speed, reliability and productivity are worth pursuing.

If relatively small volumes of first-class mail are
ultimately diverted, electronic systems may result in
cheaper mail service. If relatively large volumes are
lost, electronic systems still may be more cost beneficial
than a complete physical processing system and minimize
the need for higher subsidies or rates. Further, it is
possible that electronic systems could be used for more
than just first-class mail. For example, second and
third-class mailers sending advertisements or solicita-
tion material destined for residences may be amenable to
electronic handling.

For these reasons, we believe the Service should continue
its efforts to test the practicality of adapting existing
electronic systems for postal use and to study the potential
development of an electronic message service system to
reduce present mail processing and transportation costs.

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Mr. Chairman, this concludes my prepared statement and
we will be happy to answer any questions you may have.

ELECTRONIC MESSAGE SERVICE SYSTEM CANDIDATES

	Candidate		
	A	B	C
Processing Stations	150	360	87
Public Terminals	1,986	6,225	7,100
Messages Annually (billions)	19.8	22	24.1
Investment Cost (billions)	$1.4	$1.9	$1.6
Annual Operating Cost (millions)	$381	$442	$285
Staff	9,177	9,506	3,949
Per Message Cost (cents)	2.6	2.9	1.8
Delivery Cost (cents)	4	4	4