Chapter 6

Implications for Postal Rates, Service Levels, and Labor Requirements

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Introduction

Postal rates, service levels, and labor requirements are integrally related. By law, the U.S. Postal Service (USPS) is required to achieve break-even operations; that is, revenues should equal costs as nearly as possible. Thus, postal rates are established at the levels needed to generate revenues sufficient to cover projected costs over a given period of time (2 to 3 years in a typical ratesetting cycle). The projected costs are based on assumptions about USPS mail volumes and service levels. The major cost component is labor, which in fiscal year 1980 accounted for about 85 percent of total USPS costs.[1] For the current level of service, about 60 percent of labor costs are fixed; that is, are required to maintain the service level regardless of variations in mail volume.[2]

[1] *Annual Report of the Postmaster General,* fiscal 1980, p. 24.
[2] USPS fiscal year 1980 Revenue and Cost Analysis; also see Robert W. Anthony, et al., *Strategy for Decisions: American Postal Workers Union and the Electronic Information Revolution,* The George Washington University Program of Policy Science and Technology, Washington, D. C., Mar. 1, 1980, pp. 55-56.

Postal Rates

While OTA was not able to do a revenue/cost analysis for all classes of mail, the results of the analysis for first-class mail suggest that under the baseline high but plausible Generation II electronic mail and message system (EMS) growth alternative, postal rates would have to increase in constant dollars (net of inflation) after 1995, assuming service levels were not reduced. As shown earlier in figure 4 (based on the market penetration analysis), the breakdown of mail by class for the high but plausible Generation II EMS growth alternative indicates that through the early 1990's the split between first-class mail and other classes would be roughly the same as in 1980. Reductions in conventional first-class mail would be largely offset by increases in Generation II EMS hardcopy output delivered by USPS.

However, by 1995 the net reduction in total USPS-delivered first-class mail would, for the baseline high growth alternative, require a small rate increase to maintain the first-class mail contribution to USPS fixed costs, based on the chapter 5 revenue/cost analysis (see figs. 9 and 10). By 2000, the required rate increase could be more substantial, on the order of 18 percent. If the underlying mainstream growth turned out to be 1 percent rather than 2 percent, a rate increase of more than 30 percent might become necessary. On the other hand, for a 3-percent underlying mainstream growth, the required rate increase in 2000 would be about 7 percent. For illustrative purposes, an 18-percent *increase in* first-class mail rates would translate roughly into an increase of 3.5¢/piece in the conventional first-class mail rate and a 1.5¢/piece increase in the rate for delivery of Generation II EMS first class. These rate increases would recover the projected $1.5 billion shortfall in first-class mail contribution to fixed costs in 2000 for the baseline high growth alternative.

Projected rate increases (or decreases) under various assumptions are summarized in table 10. As shown, using the alternative/revenue cost assumption (where revenue/piece is the same for conventional and Generation II hardcopy fist-class delivery, as would be the case under current USPS pricing policies), a small rate decrease is projected for 1995. If the 100-percent EMS stimulation assumption also applied, for the high Generation II growth alternative, rate decreases of about 16 and 9 percent are projected for 1995 and 2000, respectively. Under these assumptions, the projected rate decreases are even larger for the alternative representing very high Generation II EMS growth. Even the slow growth alternative would not require a rate increase in 2000.

Table 10.—Projected First-Class Mail Rate Increases or Decreases, Years 1995 and 2000

	1995	2000
High but plausible Generation II *EMS* growth alternative		
Underlying mainstream growth rate 1 percent	+ 10.50/₀	+ 31.40/₀
Underlying mainstream growth rate 2 percent	+ 3.2	+ 18.1
Underlying mainstream growth rate 3 percent	– 2.5	+ 7.4
Assume alternative revenue/cost figures	– 6.1	+ 4.9
Assume alternative revenue/cost figures and 100 percent EMS stimulation	– 15.9	- 9.2
Very high Generation ii EMS growth alternative		
Underlying mainstream growth rate 2 percent	+ 6.2	+ 20.4
Assume alternative revenue/cost figures	– 9.9	+ 2.6
Assume alternative revenue/cost figures and 100 percent EMS stimulation	– 23.7	– 14.3
Moderate Generation ii *EMS* growth alternative		
Underlying mainstream growth rate 2 percent	+ 2.0	+ 18.1
Assume alternative revenue/cost figures	– 4.4	+ 5.0
Assume alternative revenue/cost figures and 100 percent EMS stimulation	—1 1.8	– 9.1
Slow Generation ii EMS growth alternative		
Underlying mainstream growth rate 2 percent	+ 0.3	+ 14.6
Assume alternative revenue/cost figures	– 1.6	+ 8.4
Assume alternative revenue/cost figures and 100 percent EMS stimulation	– 4.3	+ 0.1

(+) = projected first-class mail rate increase
(-) = projected first-class mail rate decrease
Unless otherwise indicated, 2-percent underlying mainstream growth rate is assumed.

SOURCE: Office of Technology Assessment; based on data from figs. 9 and 10.

In comments to OTA, the Department of Justice (DOJ) has expressed the view that USPS could not successfully charge a different rate for delivery of Generation II as compared to conventional first-class mail, either legally under the Postal Reorganization Act's ratesetting requirements or as a practical operational matter. Both the Postal Rate Commission and DOJ reviewers believe that OTA's alternative revenue/cost assumption is the most likely rate basis, absent a change in USPS pricing policies.

All of the foregoing projections assume other variables are held constant, including volume. If first-class volume was sensitive to rate increases, a volume reduction could result which might in turn necessitate further rate increases, and so on. A 20- to 30-percent increase (net of inflation) in first-class rates could be enough to adversely affect the competitive position of first-class mail. If second- and third-class volumes declined significantly, perhaps due to competition from alternative delivery services, additional pressure on rates would be generated. Also, all of the rate projections are in constant 1980 dollars and do not reflect increases due to inflation. And the revenue/cost analysis in chapter 5 assumed that productivity improvements with respect to conventional mail would offset increases in the cost of capital and real wages. Should the real cost of capital or labor or both exceed the inflation rate, further upward pressure on postal rates would be experienced. In addition, the revenue/cost analysis assumed significant cost displacement for USPS delivery of Generation II EMS hardcopy output. If the cost displacement turned out to be less, or if other kinds of USPS EMS services resulted in a net real cost increase, the rate projections could be substantially different. Finally, the revenue/cost analysis assumed that current USPS service levels would be maintained.

However, USPS could choose to reduce service levels and labor requirements rather than increase rates in the face of declining USPS-delivered mail volume.

Service Levels

Based on projected mail volumes for the baseline high Generation II growth alternative, it appears that USPS might have to reduce current service levels significantly after 1995 in order to avoid real rate increases. After that time, the shortfall in the first-class mail contribution to USPS fixed costs could become large enough to warrant consideration of service cutbacks rather than rate increases, particularly if rate increases would further reduce USPS mail volume. On the other hand, if the alternative revenue/cost assumption held up, and if Generation II EMS could contribute significantly more per piece to USPS fixed costs than could conventional mail, then major real rate increases (net of inflation) or service cutbacks could be forestalled until past 2000. This would also be the case if the underlying mainstream growth was 3 percent rather than 2 percent.

Present USPS service levels are summarized in table 11. Since the USPS commenced operations on July 1, 1971, the number of days of delivery per week has remained the same. The number of post offices, branches, and stations has declined at a very slow rate. For example, over the last 5 years, the number of post offices declined at a rate of 1.4 percent per year.[3] In contrast, the number of city delivery points has increased by about 21 percent since 1971, and the number of rural delivery points by about 50 percent.[4] Since USPS is obligated by law to provide mail service to all business and residential addresses in the United States, the number of delivery points has expanded along with growth in population and in populated areas. USPS has instituted some measures, such as the use of cluster mailboxes, to limit the increase of delivery points in newly populated areas such as suburban or exurban residential developments.

Table 11.—USPS Service Levels, Fiscal Year 1980

Service criteria	Level of service
Days of delivery per week	6
Number of post offices	30,326
Number of branches and stations	9,160
Number of city delivery points	68.5 million
Number of rural delivery points	14.7 million
Overnight delivery of local area mail	95 percent on time
2-day delivery of 600-mile radius mail	86 percent on time
3-day delivery of cross-country mail	87 percent on time

SOURCE: *Annual Report of the Postmaster Genera/, F/sea/ 1980,* pp. 10, 11, 31.

While OTA did not study USPS service levels in detail, there is some evidence to suggest that the mail system is nearing capacity. In other words, there may be limits to the volume of conventional mail that can be handled without sacrificing quality of service. For example, a USPS task force concluded that 5-day delivery "would have a negative impact on service, including overtime, inconsistent delivery, delayed deliveries, equipment shortages, inadequate space to store accumulated mail, and inadequate vehicle capacity."[5] Also, since 1977 when total mail volume reached about 92 billion pieces, first-class mail delivery performance has declined for all but local area mail. Ontime (overnight) delivery for local area mail has remained quite stable at about 95 percent, but ontime delivery (2-day) for 600 mile radius mail has decreased from 90 to 86 percent since 1977. Ontime (3-day) delivery for cross-country mail has dropped from about 91 to 87 percent.[6] The long-term performance trends since 1973, the year when comparable

[3] *Annual Report of the Postmaster General,* fiscal 1980, p. 31 and *Annual Report of the Postmaster General, fiscal* 1979, p. 31.

[4] *Annual Report of the Postmaster General* fiscal 1980, p, 10.

[5] U.S. General Accounting Office, *Implications of Electronic Mail for the Postal Service's Work Force,* Feb. 6, 1981, pp. 34-35.

[6] *Annual Report of the Postmaster General* fiscal 1980, p. 11.

delivery data first were collected, indicate that possibly USPS has reached its peak in terms of improvement in national delivery performance with the current mail system.[7] While performance is dropping off (for other than local area first-class mail), delivery work hours are creeping up again after declining for many years. More specifically, delivery work hours decreased by about 8 percent from 1970 to 1978 while total USPS delivery points increased by 20 percent during that period. But since 1978, delivery work hours have increased by about 4 percent while delivery points rose by 6 or 7 percent.[8]

- EMS have several implications for USPS service levels. On the one hand, the projected reductions in USPS-delivered first-class mail for the baseline high Generation II EMS growth alternative would reduce the year 2000 first-class contribution to USPS fixed costs by about $1.5 billion and, in turn, could translate into $1.5 billion worth of service reductions in order to avoid rate increases. OTA did not analyze in detail what kinds of service cuts would save $1.5 billion. However, USPS officials have estimated that delivery 5 days a week would save about $650 million (1980 dollars). A 1975 General Accounting Office study estimated that closing 12,000 small and rural post offices would save $100 million (1975 dollars),[9] and a 1976 congressional study projected a saving of $1.1 billion (1977 dollars) for delivery 3 days a week.[10] Any of these service changes undoubtedly would be controversial.

On the other hand, Generation II EMS service could help to improve USPS performance. To the extent that excessive mail delays now occur in processing and sorting the large volumes of conventional mail, Generation II EMS could help to relieve these strains since Generation II would bypass many of the processing and sorting steps now required. Presumably, Generation II EMS would also speed up delivery of mail sent outside the local area since electronic transmission would be much faster than physical transport. A fully deployed nationwide Generation II EMS service could reasonably be expected to provide l-day delivery nationwide 95 percent of the time. Cost savings associated with the reduced sorting, processing, and transportation requirements of Generation II EMS were reflected in the 5¢/piece cost displacement (compared to conventional mail) assumed in the revenue/cost analysis (ch. 5).

Finally, if Generation II EMS volume was higher than the baseline and/or if Generation II EMS made a greater per piece contribution to USPS fixed costs than conventional mail, then Generation II EMS could generate enough revenue to offset the need for service cutbacks and would contribute to improved USPS performance at current service levels.

Even if service cutbacks became necessary, Generation II EMS could help USPS maintain service to particular geographic areas or types of customers where full service conventional mail might be considered too expensive or no longer cost effective. For example, location of Generation II EMS terminals in smaller or more remote post offices could reduce or eliminate long distance transportation costs that might become prohibitively high, forcing the closure of such offices.

[7] Ibid.
[8] Ibid., p. 12.
[9] Comptroller General of the United States, *$100 Million Could Be Saved Annually in Postal Operations in Rural America,* Washington, D. C., U.S. General Accounting Office, 1975.
[10] U. S., Congress, House Committee on Post Office and Civil Service, *The Necessity for Change,* 94th Cong., 2d sess., Dec. 10, 1976, p. 40.

Labor Requirements

USPS is a labor-intensive organization. As noted earlier, labor represents about 85 percent of total USPS costs. Labor requirements are primarily determined by three factors—USPS service levels, labor productivity, and mail volumes. By making assumptions about

service levels and labor productivity, it is possible to estimate the labor requirements for projected future mail volumes.

As a first step in the analysis, OTA estimated variable and fixed percentages for each major group of USPS employees. The results are summarized in table 12, along with the total number of employees in each group as of fiscal year 1980. The variable percentage is the labor component that varies directly with mail volume. The fixed percentage is the labor component that is necessary to maintain the current service levels. The variable and fixed percentages in table 12 were derived by OTA directly from the USPS fiscal year 1980 Revenue and Cost Analysis. The variable labor percentage is based on the direct and indirect variable attributable cost from the USPS analysis, expressed as a percentage of total accrued costs. The fixed labor percentage is the sum of specific fixed attributable costs plus all other institutional costs for each employee group. The variable and fixed labor percentages were reviewed with USPS and found to be reasonable.

Table 12.—Structure of the USPS Labor Force, Fiscal Year 1980

Employee group[a]	Number of employees	Variable percentage	Fixed percentage
Headquarters employees	2,798	0	1000/0
Regional and other field units	6,228	0	100
Inspection service	5,242	0	100
Postmasters	28,967	190/o	81
Post office supervisors and technical personnel	36,481	52	48
Subtotal	79,716		
Post office clerks and mail handlers	303,560	86	14
City delivery carriers and vehicle drivers	193,730	50	50
Rural delivery carriers	53,069	27	73
Special delivery messengers	2,502	39	61
Building and equipment maintenance personnel	29,409	45	55
Vehicle maintenance facility personnel	4,837	29	71
Total	666,823	61%	39%

[a]Includes full- and part-time employees.
[b]Based on *Annual Report of the Postmaster General, Fiscal 1980,* P. 31, and data supplied by F. L. Ben Kinney, USPS Manager of Financial Planning.
[c]Based on USPS, *FY80 Revenue and Cost Analysis, Cost Segments and Components Workpaper,* pp. 7-62.

SOURCE: Office of Technology Assessment.

The overall cost split for the entire USPS labor force was calculated to be 61 percent variable and 39 percent fixed. This fixed percentage is somewhat higher than the 36 percent fixed for total USPS costs used in the OTA revenue/cost analysis (ch. 5). The 36 percent reflects the lower fixed percentages of the cost components for transportation (primarily air, rail, and highway) and building occupancy (rents, fuel, and utilities). The 61/39 split for labor is reasonably consistent with actual data on the relationship between USPS labor work hours and mail volume changes collected during 1979 and 1980.[11]

As a next step, OTA calculated labor productivity index values at 5-year intervals from 1980 to 2000. An average productivity improvement of 1.5 percent per year was assumed as the baseline. USPS labor productivity improved by roughly 3 percent annually during the 1970's, and a goal of 3 percent improvement per year has been announced. But this does not appear to be realistic in view of the fact that most productivity improvement from automation and mechanization has already been realized. Even the expanded ZIP code program, known as ZIP + 4, would realize a cumulative labor productivity improvement of only 2.3 percent, according to USPS estimates.[12] For comparison purposes, labor force requirements were also calculated for 3.0- and O. O-percent productivity improvement per year.

Employee groups with 100 percent fixed costs would not vary with mail volume. A total of only 14,268 employees, or about 2.1 percent of the total USPS labor force, fall into this category. Included here would be headquarters, regional, and inspection service employees. This assumes that current service levels are maintained. If, for example, a significant number of major post offices were closed, then some portion of the costs for these employee groups would become variable. In this

[11]Robert W. Anthony, et al., op. cit., pp. 55-56.
[12]See ch. 2, footnote 4.

case, the fixed percentage for postmasters would be lower than the 81 percent shown in table 12.

Costs for the 303,560 clerks and mail handlers (full- and part-time) would vary significantly with conventional mail volume. The clerks and mail handlers represent the one employee group with very limited participation in a Generation II EMS service. Generation II would bypass many of the traditional mail sorting and processing functions performed by clerks and handlers, but would still require physical delivery (whether by city or rural carriers). The cost split for the clerks and mail handlers is 86 percent variable/14 percent fixed. Most other employee groups would vary significantly with total USPS-delivered mail volume (conventional plus Generation II EMS). This would include supervisory, maintenance, and technical personnel plus the city, rural, and special delivery employees. A total of 320,028 employees, or about 48 percent of the total USPS labor force, are in this category. This includes part-time and casual employees who function in part to help the USPS accommodate to fluctuations in mail volume, for example, at peak holiday mailing periods.

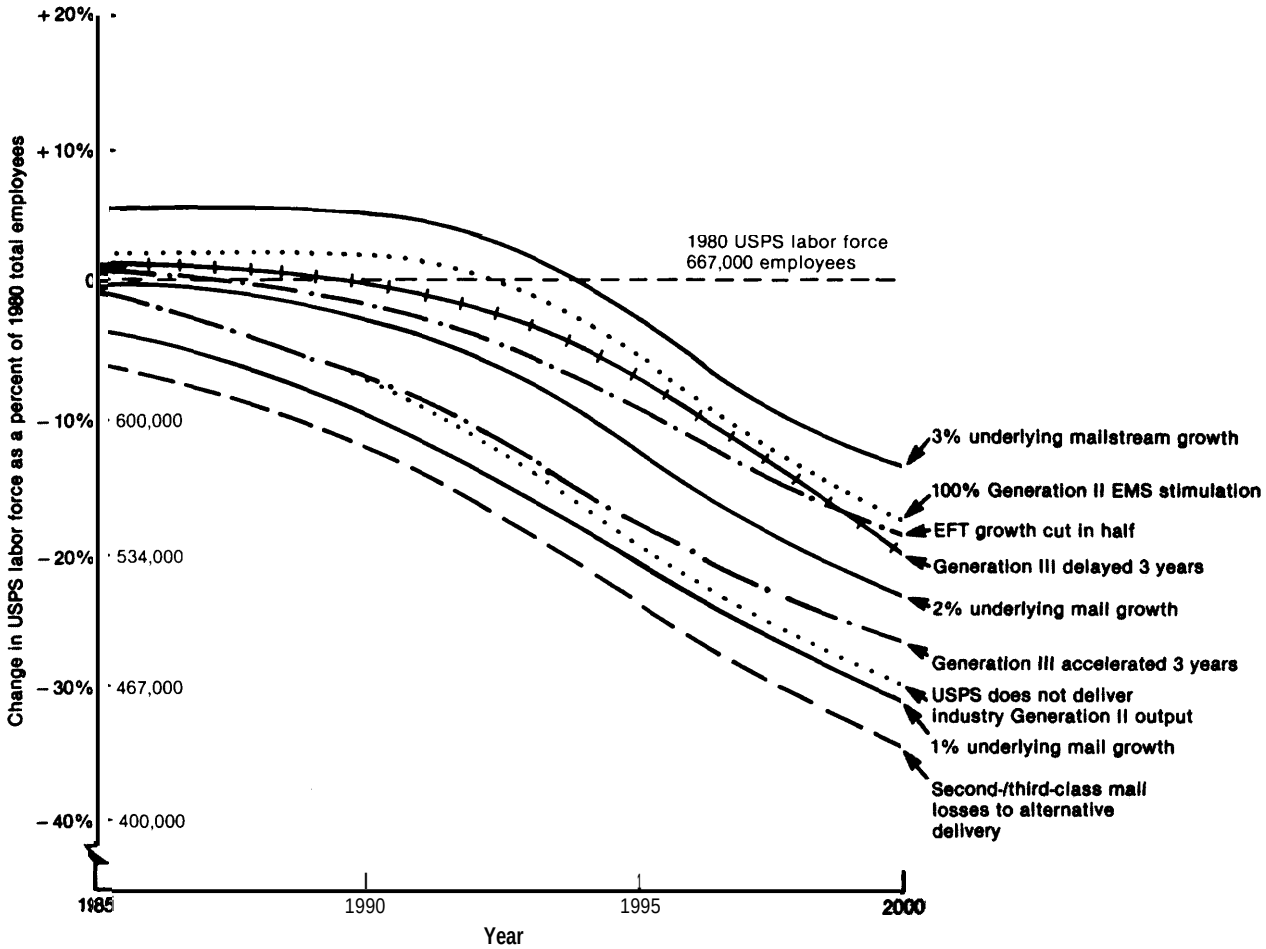
The equation used by OTA to calculate labor requirements, given the variable labor cost, labor productivity, and projected mail volume, is provided in appendix C. In order to simplify this analysis, clerks and mail handlers were assumed to vary with total USPS-delivered mail volume, not just with conventional mail. This will tend to understate the projected change in requirements for clerks and mail handlers and in the total USPS labor force.

Figure 11 presents the projected overall USPS labor force changes for the years 1985, 1990, 1995, and 2000 under the baseline high but plausible Generation II EMS growth alternative, and assuming 1.5-percent annual labor productivity improvement. The projected increase or decrease, expressed as a percentage change in the total USPS labor force, is shown for each of the various sensitivity assumptions used in chapter 4 to develop the USPS-delivered mail volumes on which the labor requirement calculations are based. (See fig. 7 for the corresponding mail volume projections.) The projected labor force reduction ranges from 2.7 to 22.8 percent in 1995, and from 13.8 to 34.3 percent in 2000. The base case (assuming 2-percent underlying mailstream growth) falls roughly in the middle of the range, with a 12.2-percent labor force reduction projected for 1995 and a 23.3-percent reduction projected for 2000.

For the base case, this translates into a reduction of 81,352 employees by 1995 and 155,370 employees by 2000. By comparison, between 1971 and 1980 the USPS labor force declined by roughly 65,000 employees. Thus, the projected rate of reduction under the base case (high but plausible Generation II EMS growth, 2-percent underlying mailstream growth, 1.5 percent per year labor productivity improvement) over the next two decades would be higher than the rate of reduction experienced during the last decade. However, as shown in figure 11, if the underlying mailstream growth is 3 percent rather than 2 percent, the labor force reduction in 2000 would be 13.8 percent or 92,022–significantly less than the rate of reduction experienced in the 1970's. On the other hand, if the underlying mainstream growth rate turned out to be 1 percent or if USPS did not deliver industry Generation II hardcopy output, the labor force reduction would be about 30 percent, which translates into 200,000 employees.

Of course, if 3-percent-per-year labor productivity improvement is assumed, the projected labor force reductions would be even higher or, if zero labor productivity improvement is assumed, labor force reductions would be lower. The sensitivity of labor force requirements to both labor productivity improvement and underlying mainstream growth rate is illustrated in table 13 for the high Generation II growth alternative. As shown, with 3-percent annual growth in the underlying mainstream and a zero-percent annual labor productivity improvement, no reduction-and indeed a small increase—in the labor force requirement is projected for 2000. At the other extreme, with l-percent underlying mail-

Figure II.–Sensitivity Analyses of Projected Changes in USPS Labor Force Requirements for 1995 and 2000 Assuming High But Plausible Generation II EMS Growth and 1.5-Percent Annual Labor Productivity Improvement



Sensitivity assumptions (assume 20/. underlying mainstream growth unless otherwise indicated)	Change in USPS labor force (percent of 1980 total employees)			
	1985	1990	1995	2000
3% growth in underlying mainstream	+ 5.7	+ 5.6	– 2.7	– 13.8
100°/0 stimulation of additional Generation II EMS	+ 2.0	+ 2.1	– 5.0	– 17.7
EFT growth rates cut in half	+ 0.7	– 1.5	– 9.4	– 18.3
Generation III EMS delayed by 3 years	+ 1.4	+ 0.1	– 6.6	-18.9
2°/0 growth in underlying mainstream	+ 0.6	– 2.4	– 12.2	-23.3
Generation III EMS accelerated by 3 years	– 0.8	– 6.8	– 17.6	-26.7
USPS does not deliver industry Generation II	– 0.7	–6.8	– 19.2	– 29.0
10/0 growth in underlying mainstream	– 3.7	– 9.4	– 20.1	– 30.9
Second-/third-class mail diversion to alternative delivery	– 6.0	-12.2	– 22.8	– 34.3

SOURCE Off Ice of Technology Assessment

Table 13.—Changes in USPS Labor Force Requirements for High But Plausible Generation II EMS Growth Alternative, Year 2000, As a Function of Underlying Mainstream Growth Rate and Labor Productivity Improvement per Year

Underlying mainstream growth rate per year	Labor productivity improvement per year		
	0%	1 .5%	3.0%
3%	+ 2.7%	– 13.8%	– 25.6%
2%	–10,1	– 23.3	– 32.9
1 %	**20.4**	**– 30.9**	**– 38.6**

NOTE. Changes in labor force requirement expressed as percentage increase (+) or decrease (–) from 1980 USPS labor force

SOURCE: Office of Technology Assessment

stream growth and 3-percent productivity improvement, a very substantial 38.6-percent reduction in labor force is projected in 2000. However, only about half of this reduction would be due to declining mainstream volume, with the other half due to labor productivity improvement.

Labor requirements could be calculated for every separate employee group under various assumptions in any future year specified. OTA estimated detailed labor force requirements in 2000 for the base case (high but plausible Generation II EMS growth alternative, 2-percent underlying mainstream growth, 1.5-percent labor productivity growth) and for the base case modified to assume a 3-percent annual labor productivity improvement. Actually, as indicated in table 13, in terms of overall projected labor force changes, the base case is roughly the same as the 1-percent mailstream/O-percent labor productivity and 3-percent mainstream/3-percent labor combinations. The 2-percent mainstream/3-percent labor productivity is about the same as the 1-percent mailstream/1.5-percent labor productivity combination.

As summarized in tables 14 and 15, the projected net reduction in the total USPS labor force for these two cases is about 158,000 and 223,000 employees, respectively, with a remaining labor force in 2000 of roughly 506,568 and 452,813 employees.

The projected labor force reductions are not spread evenly among all employee groups. Almost two-thirds of the reductions would be from the post office clerks and mail handlers group--99,900 and 141,000, respectively, for the two cases shown in tables 14 and 15. This is because the work of clerks and mail handlers is more directly related to mail volume than any other employee group. In addition, USPS delivery of Generation II EMS probably would not require many of the sorting and

Table 14.—Projected USPS Year 2000 Labor Force Requirements by Employee Group, Assuming High But Plausible Generation II EMS Growth, 2-Percent Underlying Mainstream Growth, and 1.5-Percent Labor Productivity Improvement[a]

Employee group	Percentage change year 2000[b]	Number of reduction from fiscal year 1980	Employees year 2000 total
Headquarters	0	0	2,800
Regional and other field units	0	0	6,220
Inspection service	0	0	**5,240**
Postmasters	–7.3"!0	–2,120	26,900
Post office supervisors and technical personnel	– 19.9	–7,260	29,220
Post office clerks and mail handlers	--32.9	–99,900	204,000
City delivery carriers and vehicle drivers	– 19.1	–37,000	157,000
Rural delivery carriers	– 10.3	–5,470	47,600
Special delivery messengers	-- 14.9	–373	2,130
Building and equipment maintenance personnel	-- 17.2	–5,060	24,400
Vehicle maintenance facility personnel	– 11.1	–537	4,300
Totals		– 158,000	510,000

[a] Roughly equivalent to 3-percent mailstream growth/3-percent productivity improvement and l-percent mainstream growth/0-percent productivity improvement.
[b] Based on total year 2000 USPS-delivered mail volume of 88.5 billion.

NOTE: All numbers rounded to three significant figures.

SOURCE: Off Ice of Technology Assessment.

Table 15.—Projected USPS Year 2000 Labor Force Requirements by Employee Group, Assuming High But Plausible Generation II EMS Growth, 2-Percent Underlying Mainstream Growth, and 3-Percent Labor Productivity Improvement[a]

Employee group	Percentage change year 2000[b]	Number of reduction from fiscal year 1980	Employees year 2000 total
Headquarters employees	0	0	2,800
Regional and other field units	0	0	6,220
Inspection service	0	0	5,240
Postmasters	– 10.20/0	–2,960	26,000
Post office supervisors and technical personnel	– 28.0	– 10,200	26,300
Post office clerks and mail handlers	–46.4	– 141,000	163,000
City delivery carriers and vehicle drivers	– 27.0	–52,300	141,000
Rural delivery carriers	– 14.6	– 7,750	45,300
Special delivery messengers	– 21.0	–525	1,980
Building and equipment maintenance personnel	– 24.3	– 7,150	22,300
Vehicle maintenance facility personnel	– 15.6	–755	4,080
Totals		– 223,000	444,000

[a]Roughly equivalent to 1-percent mainstream growth/1 .5-percent productivity improvement.
[b]Based on total year 2000 USPS-delivered mail volume of 88.5 billion.

NOTE: All numbers rounded to three significant figures.

SOURCE Office of Technology Assessment

processing functions now performed by clerks and mail handlers. A lesser but still significant percentage (almost one-quarter) of the total employee reductions would be in the city delivery carrier group.

Overall, the clerks and mail handlers could be reduced by about 33 to 46 percent of their 1980 complement, respectively, for the two cases in tables 14 and 15. Post office supervisors could be reduced by about 20 to 28 percent, and city delivery carriers by 19 to 27 percent.

The projections in tables 14 and 15 do not reflect any addition of employees for operation of USPS Generation II EMS facilities. RCA estimated that 5,000 new USPS jobs would be created if a USPS Generation II EMS service were fully deployed.[13] OTA did not independently verify this estimate. However, it seems clear that, qualitatively, any increase in USPS employees for Generation II operations would be very small compared to the projected employee reductions.

Up to this point, all the discussion and analysis of projected labor force requirements has been in terms of the high but plausible Generation II EMS growth alternative. OTA conducted additional sensitivity runs to determine if the labor force changes would be significantly different under very high, moderate, and slow growth alternatives. The results are summarized in table 16. Basically, the net reduction in the overall USPS labor force would not change unless the 100-percent EMS stimulation factor applies. That is, if each Generation II EMS message stimulates a new Generation II message, then the overall labor force reduction would be somewhat less for all alternatives. The labor force reduction would then be smallest (–15.3 percent) for the very high Generation II growth alternative and largest (– 20.4 percent) for the slow growth alternative.

Whether or not these labor force reductions could be handled through attrition depends largely on future USPS retirement, quit, and new hire rates. In recent years, retirements have averaged about 4 percent of the full-time labor force and about two-thirds of all separations." However, over the last 10 years, net

[13]The RCA study conducted for USPS estimated that 5,000 new USPS jobs would be created through full deployment of the EMSS. See RCA, *Electronic Message Service System: Growth and Economic Analyses, 1977.*

[14]U.S. Department of Labor, "The Labor Impact of Instituting Electronic Mail Systems in the United States Postal Service" pp. 9-10, paper prepared for the 1979 *Presidential) Review Memo* on USPS electronic mail policy.

Table 16.—Projected Year 2000 USPS Labor Force Reductions Assuming 2-Percent Underlying Mainstream Growth and 1.5. Percent Productivity Improvement

EMS alternative	USPS mail volume in billions of pieces: Conventional mail	Generation II mail	Total	Labor force reduction
High but plausible growth	75.1	13.4	88.5	– 23.3 %
Very high growth	69.9	18.6	88.5	– 23.3
Moderate growth	75.2	13.3	88.5	– 23.3
Slow growth	81.8	6.7	88.5	– 23.3
High but plausible growth[b]	75.1	26.9	102.0	– 17.5
Very high growth[b],	69.9	37.2	107.1	– 15.3
Moderate growth[b]	75.2	26.7	101.9	– 17.5
Slow growth[b]	81.8	13.4	95.2	– 20.4

[a]Expressed as a percentage of 1980 employee levels
[b]Assumes 100-percent EMS stimulation.

SOURCE: Off Ice of Technology Assessment.

separations (retirements plus quits minus new hires) have averaged slightly under 1 percent. This would be adequate to absorb the projected labor reductions for the baseline alternative (assuming 2-percent mainstream growth and 1.5-percent productivity improvement). But any significant drop in the retirement and/or quit rates would mean fewer new hires, restricted promotion opportunities, and limited upward mobility. If the labor force reduction was higher than the baseline, a further cutback in new hires would be necessary. The adjustment could be quite difficult for groups that would be affected most, such as clerks and mail handlers. All of these conditions could adversely affect employee morale and complicate future contract negotiations, and deserve serious attention by USPS management and labor unions.

There is some evidence to suggest that retirement rates may decline in future years. As of 1980, the age distribution of the USPS workforce shows a bimodal distribution with peaks at about age 58 and age 33. This means that a peak has been passed in terms of the numbers of employees reaching retirement eligibility (age 55). Of course, many employees wait until age 62 or 65 to retire. The age distribution suggests that, for the next 17 years or so, decreasing although still significant numbers of USPS employees will be reaching retirement eligibility each year.[15] In addition, the removal of mandatory age 70 retirement restrictions may encourage some employees to work longer, and the poor state of the economy could discourage retirements and quits. Whether or not this poses a problem would depend on the actual retirement and quit rates in the late 1980's and early 1990's, the time when the need for significant labor force reductions (due to declining USPS-delivered mail volume) is first likely to be felt.

Finally, as noted earlier, the impact of labor force reductions would fall unevenly on the various employee groups. For example, the mail handlers would be hit especially hard, since to a substantial extent their current skills would not be needed in processing electronic mail. This might be one employee group where retraining opportunities for possible EMS jobs might be emphasized. Another related concern is that, as of late 1978, the mail handlers as a group had one of the highest percentages of black employment, more than double the USPS-wide average.[16] Thus, the possibility exists that labor reductions might fall disproportionately on black and perhaps other minority employment. This possibility warrants further study.

[15]Ibid., p. 8.
[16]Ibid., p. 11.