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**REPORT TO COMMITTEE ON  
POST OFFICE AND CIVIL SERVICE  
HOUSE OF REPRESENTATIVES**

**Forecast Of Postal Service  
Self-Sufficiency Potential**

United States Postal Service

**BY THE COMPTROLLER GENERAL  
OF THE UNITED STATES**

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

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

Dear Mr. Chairman:

In accordance with discussions with your office, we have developed various estimates of mail volume and Postal Service income and expenses for 1984. The Service views the Postal Reorganization Act as mandating that it become self-sufficient by then.

On September 18, 1974, we briefed staff members of the House Committee on Post Office and Civil Service; the Subcommittee on Postal Service; and the Subcommittee on Postal Facilities, Mail and Labor Management on our estimates. We emphasized that the forecasts were based on assumptions and represent what might happen rather than what will happen. The appendixes contain the charts used in the briefing and details of our forecast.

As requested by your Committee, we did not obtain comments from the Service on this report. We did, however, brief Service officials on our estimates before briefing the Committee staff. Service officials, using our volume and revenue projections, gave us first-class postage rates somewhat different from our projections, which we also present in the appendixes.

The Service has its own projections, which it continually updates, but these are for its internal use only.

We do not plan to distribute this report further unless you agree or its contents are publicly announced.

Sincerely yours,

A handwritten signature in black ink that reads "James B. Stacks".

Comptroller General  
of the United States

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ABBREVIATIONS

BLS Bureau of Labor Statistics  
GAO General Accounting Office  
USPS U. S. Postal Service

DETAILS OF GAO'S FORECAST OF  
POSTAL SERVICE SELF-SUFFICIENCY POTENTIAL

SUMMARY

As requested by the House Committee on Post Office and Civil Service, we have developed estimates of the Postal Service's expenses for 1984. In passing the Postal Reorganization Act (39 U. S. C. 101), the Congress hoped that the newly created Postal Service would, through more businesslike operation, become self-sustaining by that year.

In theory, self-sufficiency could be achieved by setting postal rates at whatever level is necessary to cover expenses. In reality, this could involve postage rates so high as to drive mail users to other means of communication, thereby reducing volume and revenue--maybe completely undermining the Service's financial position.

And even if the raising of rates was economically possible, they could reach a level that would, contrary to the intent of the Postal Reorganization Act, impair the personal, educational, literary, and business correspondence practices of the people.

The future level of postage rates depends directly on mail volume, the Service's expenses, and the amount of any Federal subsidy. The first two determine unit cost. The last determines the portion of this cost that will be borne by the taxpayer, rather than the mail user.

We have forecast 12 different situations for 1984, assuming the same volume but varying rates of productivity and inflation. We have projected the price of a unit of first-class postage for each situation and under various assumptions regarding a Federal subsidy--from none to 20 percent of projected expenses. (See apps. XIII to XVI.) To show the effect of inflation on expenses and stamp prices, the value of these two items is presented in 1973 as well as 1984 dollars. (See apps. XI and XII.)

For example, our forecast of what the postal expenses are most likely to be in 1984--\$18.7 billion--assumes total mail volume of 105.5 billion pieces in that year, a slowly declining inflation rate between 1974 and 1984 (10.4 percent in 1974, decreasing to 4.4 percent in 1984), <sup>1/</sup> and productivity increases of 0.7 percent annually. With no Federal subsidy, these assumptions indicate that a unit of first-class postage in 1984 would cost approximately \$0.18. (See app. XVII.) The effect of inflation can be seen by considering that,

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<sup>1/</sup>Based on a study performed for the Service by Data Resources, Incorporated.

in 1973 dollars, expenses would be \$10.4 billion (rather than \$18.7 billion) and a unit of first-class postage would cost about \$0.10 (rather than about \$0.18). (See apps. XI and XII.)

The appendixes contain copies of the charts we used in briefing the Committee staff. They set forth the possibilities indicated by our analysis and explain our methodology and assumptions.

Forecasting necessitates making assumptions as to conditions during the forecast period and reactions to these conditions. Once the assumptions have been accepted, a technique to develop the forecast can be adopted. The forecasts must be viewed in terms of these assumptions. They do not represent certainties, but possibilities. Consequently, the forecasts set forth what the situation might be, rather than what it will be.

#### ASSUMPTIONS AND METHODOLOGY USED IN PROJECTING POSTAL SERVICE COSTS IN 1984

In forecasting costs for the Postal Service, we assumed that there would be no major breakthrough in mail-processing technology.

##### Forecast methodology

Though the Service has used several types of forecasting methods, including rate-of-change extrapolations, ratio analysis, and regression analysis in its forecasts, we limited our methodology to regression analysis. We chose this method because forecasting done by analysts throughout the world has shown this to be effective for forecasting postal volume. For example, in its report "Postal Market Research," the International Bureau of the Universal Postal Union made the following statement about regression analysis in forecasting postal volume:

"All of these analyses have been able to produce very good fits to historical data of the past two to four decades. While these results do not provide precise guidance as to which basic parameters are the best determinants of mail usage, they do establish quite clearly that mail volume depends principally on the size of the population, its socio-economic characteristics, and its level of economic activity revealed by various indicators."

The report also stated that population and economic indexes can account for as much as 99 percent of the observed variance in mail volume.

Our preliminary work supported the Postal Union's position on the value of regression analysis in forecasting postal volume. Furthermore, our statistical test showed that regression analysis could be used to forecast other postal indicators with about the same degree of accuracy. Thus, we were able to develop forecasting equations (see app. XIX) using economic indicators, such as disposable personal income <sup>1/</sup> and the number of families and individuals, <sup>2/</sup> to forecast mail volume, revenue, and expense.

Regression analysis is a method of determining the influence of independent variables--disposable personal income--on a dependent variable--mail volume. Using the regression technique, the forecaster seeks to discover those variables which have the greatest impact on the dependent variable. Hopefully, the independent variables can be controlled or at least be more easily forecast than the dependent variable. Then, using the known or forecast values of the independent variables, the forecaster uses the equation determined by the regression analysis to forecast the variable of interest. We developed equations to forecast volume and then, using volume along with other independent variables, we forecast cost and revenue. The forecasts for national economic indicators were obtained from published Government sources as noted.

#### Volume-estimating equation

In developing this equation, we considered several measures of population and economic activity. It was finally decided that disposable personal income (to reflect the level of economic activity) and the number of families and individuals (to reflect population) would be satisfactory indicators. Pure population statistics were not used because we believed mail volume relates more directly to households than to total population.

Projections for disposable personal income were obtained for 1980 and 1985 from a published Bureau of Labor Statistics (BLS)

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<sup>1/</sup> Personal income less taxes on individuals, including income and other taxes not deductible as business expenses, and other general government revenues received from individuals as individuals.

<sup>2/</sup> The term "family" refers to a group of two or more persons related by blood, marriage, or adoption and residing together; the term "individuals" refers to persons 14 years old and over, other than inmates of institutions, who are not living with any relatives.

forecast, and projections of numbers of families and individuals were obtained from a Bureau of the Census official. We then extrapolated the data for the interim years and substituted these values in our equation.

Using this approach, we obtained the following projections.

| <u>Year</u> | <u>Pieces of mail</u><br>(billions) |
|-------------|-------------------------------------|
| 1974        | 91.3                                |
| 1975        | 93.1                                |
| 1976        | 94.8                                |
| 1977        | 96.5                                |
| 1978        | 98.2                                |
| 1979        | 99.8                                |
| 1980        | 101.1                               |
| 1981        | 102.1                               |
| 1982        | 103.4                               |
| 1983        | 104.5                               |
| 1984        | 105.5                               |
| 1985        | 106.3                               |

These estimates have prediction intervals of +5 percent at a 95-percent confidence level. For 1984, this would be as follows:

| <u>Lower bound</u> | <u>Estimated value</u> | <u>Upper bound</u> |
|--------------------|------------------------|--------------------|
| 101.0 billion      | 105.5 billion          | 110.0 billion      |

Expense-estimating equation

Operating expenses and past volume and past productivity, as measured in pieces of mail per paid man-year, are closely related. However, because of the many accounting methods used in the past, the Service could not give us reliable expense data for years before 1963. Expenses for these years were converted into constant 1973 dollars, using the General Government (Federal) price deflator, <sup>1/</sup> before using them in developing the expense equation. The General Government deflator was used rather than the Gross National Product deflator, to provide for the rapid increase in prices that had been experienced in Government sector wages and prices during 1963-73. The equation, therefore, does not include the effects of inflation unless otherwise stated.

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<sup>1/</sup> Price deflator is a set of figures which provide for the relative change, if any, of prices, costs, or similar statistical phenomena between one period of time and some other period of time selected as the base period.

Projected expenses were made for increases in productivity levels of 0.7 percent, 2 percent, and 3 percent. The 3-percent level was selected because it is a goal set by postal management, and the 0.7-percent level was selected because it was the average annual historical increase of postal productivity for 1960-70. The 2-percent level is a compromise figure.

Expenses were projected on the basis of inflation rates used by BLS and those computed by Data Resources, Incorporated, for the U. S. Postal Service (USPS). Also expenses were computed for these inflation rates adding 3 percent to these rates to emphasize the importance of keeping postal cost increases in line with those of the rest of the economy. The figure of 3 percent was selected to show the effect of expenses growing at the same rate as Postal Service productivity estimates. (See app. XI.)

#### Income-estimating equation

The overriding consideration in developing this equation was the Committee's request for a forecast of the postal rate in 1984. Therefore, in every equation we developed and tested, the first-class postage rate was included as an independent variable. The equation selected as having the best predictive capability was one which included both the price of a first-class stamp and mail volume.

We presented our forecast to Service officials. Using our volume and expense projections, they forecast stamp prices by assuming that, in 1984, first-class mail volume and revenue would constitute about 56 percent of total mail volume and revenue. By dividing 56 percent of our revenue projection (in effect our expense figure in order to break even) by 56 percent of our volume projection, they forecast the price of a first-class stamp. Stamp prices obtained in this manner differ from those obtained by regression analysis.

Postal Service forecasts are presented together with ours in appendixes XIII to XVI.

# **METHODOLOGY**

**USE OF REGRESSION ANALYSIS TO PROJECT**

**A. VOLUME**

**B. EXPENSES**

**BY MAKING VARIOUS ASSUMPTIONS AS TO**

**A. PRODUCTIVITY**

**B. INFLATION**

# **MAIL VOLUME PROJECTION BASED ON**

- **HISTORICAL DATA**
- **DISPOSABLE PERSONAL INCOME**
- **NUMBER OF FAMILIES AND INDIVIDUALS**

# MAIL VOLUME-1984 (IN BILLIONS)

| <u>LOWER<br/>LIMIT</u> | <u>BEST<br/>ESTIMATE</u> | <u>UPPER<br/>LIMIT</u> |
|------------------------|--------------------------|------------------------|
| 101.0                  | 105.5                    | 110.0                  |

THE STATEMENTS ON PAGE 2 OF THIS REPORT ARE AN INTEGRAL PART OF THIS APPENDIX.

# PROJECTED EXPENSES

- **BASED ON:**

- A. **HISTORICAL DATA**

- B. **PROJECTED VOLUME**

- **MAKING VARIOUS ASSUMPTIONS:**

- A. **PRODUCTIVITY AT 7/10%,  
2% AND 3%**

- B. **INFLATION RATES USED BY  
BLS AND USPS**

# PROJECTED EXPENSES BASED ON BLS INFLATION RATES

(IN BILLIONS)

(4.5%—1974/1979; 3.5%—1980/1984)

## PRODUCTIVITY

7/10%

2%

3%

## EXPENSES

\$16.3

\$13.8

\$12.2

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# PROJECTED EXPENSES BASED ON USPS\* INFLATION RATES

(IN BILLIONS)

(10.4%—1974; 7.4%—1975; 6.0%— 1976; 5.2%—  
1977; 4.6%—1978, 4.5%—1979/1983; 4.4%—1984)

## PRODUCTIVITY

7/10%

2%

3%

## EXPENSES

\$18.7

\$15.9

\$14.0

**\*DATA RESOURCES INCORPORATED**

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**PROJECTED EXPENSES BASED ON BLS  
INFLATION RATES PLUS 3%  
GROWTH IN USPS EXPENSES  
(IN BILLIONS)**

| <b>PRODUCTIVITY</b> | <b>EXPENSES</b> |
|---------------------|-----------------|
| <b>7/10%</b>        | <b>\$22.2</b>   |
| <b>2%</b>           | <b>\$18.9</b>   |
| <b>3%</b>           | <b>\$16.7</b>   |

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**PROJECTED EXPENSES BASED ON USPS\*  
INFLATION RATES PLUS 3%  
GROWTH IN USPS EXPENSES  
(IN BILLIONS)**

| <b>PRODUCTIVITY</b> | <b>EXPENSES</b> |
|---------------------|-----------------|
| <b>7/10%</b>        | <b>\$25.9</b>   |
| <b>2%</b>           | <b>\$22.0</b>   |
| <b>3%</b>           | <b>\$19.4</b>   |

**\*DATA RESOURCES INCORPORATED**

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**GROWTH IN EXPENSES FROM 1974 TO 1984  
(IN BILLIONS)**

|                               | <u>BLS</u>    |               |               | <u>USPS</u>   |               |               | <u>BLS+3%</u> |               |               | <u>USPS+3%</u> |               |               |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|
|                               | 7/10%         | 2%            | 3%            | 7/10%         | 2%            | 3%            | 7/10%         | 2%            | 3%            | 7/10%          | 2%            | 3%            |
| <b>1984<br/>EXPENSES</b>      | \$16.3        | \$13.8        | \$12.2        | \$18.7        | \$15.9        | \$14.0        | \$22.2        | \$18.9        | \$16.7        | \$25.9         | \$22.0        | \$19.4        |
| <b>1974 EST.<br/>EXPENSES</b> | <u>\$11.2</u>  | <u>\$11.2</u> | <u>\$11.2</u> |
| <b>GROWTH IN<br/>EXPENSES</b> | \$5.1         | \$2.6         | \$1.0         | \$7.5         | \$4.7         | \$2.8         | \$11.0        | \$7.7         | \$5.5         | \$14.7         | \$10.8        | \$8.2         |

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**PROJECTED EXPENSES  
1984  
(IN BILLIONS)**

15

|                | <u>BLS</u> |        |        | <u>USPS</u> |        |        | <u>BLS+3%</u> |        |        | <u>USPS+3%</u> |        |        |
|----------------|------------|--------|--------|-------------|--------|--------|---------------|--------|--------|----------------|--------|--------|
|                | 7/10%      | 2%     | 3%     | 7/10%       | 2%     | 3%     | 7/10%         | 2%     | 3%     | 7/10%          | 2%     | 3%     |
| <b>1984</b>    |            |        |        |             |        |        |               |        |        |                |        |        |
| <b>DOLLARS</b> | \$16.3     | \$13.8 | \$12.2 | \$18.7      | \$15.9 | \$14.0 | \$22.2        | \$18.9 | \$16.7 | \$25.9         | \$22.0 | \$19.4 |
| <b>1973</b>    |            |        |        |             |        |        |               |        |        |                |        |        |
| <b>DOLLARS</b> | 10.4       | 8.8    | 7.8    | 10.4        | 8.8    | 7.8    | 14.4          | 12.2   | 10.8   | 14.4           | 12.2   | 10.8   |

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**RANGE OF COST OF FIRST – CLASS  
STAMP – BREAKEVEN LEVEL  
(IN 1984 DOLLARS AND 1973 CONSTANT DOLLARS)**

|              | <u>BLS</u>                  |               |               | <u>USPS</u>   |               |               | <u>BLS+3%</u> |               |               | <u>USPS+3%</u> |               |               |
|--------------|-----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|
|              | 7/10%                       | 2%            | 3%            | 7/10%         | 2%            | 3%            | 7/10%         | 2%            | 3%            | 7/10%          | 2%            | 3%            |
| <b>1984</b>  |                             |               |               |               |               |               |               |               |               |                |               |               |
| <b>CENTS</b> | <b>\$0.16</b>               | <b>\$0.09</b> | <b>\$0.05</b> | <b>\$0.18</b> | <b>\$0.10</b> | <b>\$0.06</b> | <b>\$0.31</b> | <b>\$0.23</b> | <b>\$0.17</b> | <b>\$0.36</b>  | <b>\$0.26</b> | <b>\$0.19</b> |
| <b>1973</b>  |                             |               |               |               |               |               |               |               |               |                |               |               |
| <b>CENTS</b> | <b>\$0.10</b>               | <b>\$0.06</b> | <b>\$0.03</b> | <b>\$0.10</b> | <b>\$0.06</b> | <b>\$0.03</b> | <b>\$0.21</b> | <b>\$0.15</b> | <b>\$0.11</b> | <b>\$0.21</b>  | <b>\$0.15</b> | <b>\$0.11</b> |
| <b>1974</b>  |                             |               |               |               |               |               |               |               |               |                |               |               |
| <b>LEVEL</b> | ←————— <b>\$0.10</b> —————→ |               |               |               |               |               |               |               |               |                |               |               |

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**POSTAGE RATES NEEDED TO BREAKEVEN  
AT PROJECTED EXPENSE LEVELS  
(IN BILLIONS)**

|   | <u>BLS</u> |        |        | <u>USPS</u> |        |        | <u>BLS + 3%</u> |        |        | <u>USPS+ 3%</u> |        |        |
|---|------------|--------|--------|-------------|--------|--------|-----------------|--------|--------|-----------------|--------|--------|
|   | 7/10%      | 2%     | 3%     | 7/10%       | 2%     | 3%     | 7/10%           | 2%     | 3%     | 7/10%           | 2%     | 3%     |
| <b>EXPENSES</b>   | \$16.3     | \$13.8 | \$12.2 | \$18.7      | \$15.9 | \$14.0 | \$22.2          | \$18.9 | \$16.7 | \$25.9          | \$22.0 | \$19.4 |
| <b>COST OF<br/>FIRST-<br/>CLASS STAMP<br/>NEEDED TO<br/>BREAKEVEN</b> |            |        |        |             |        |        |                 |        |        |                 |        |        |
| GAO   | \$0.16     | \$0.09 | \$0.05 | \$0.18      | \$0.10 | \$0.06 | \$0.31          | \$0.23 | \$0.17 | \$0.36          | \$0.26 | \$0.19 |
| USPS  | \$0.14     | \$0.12 | \$0.10 | \$0.16      | \$0.14 | \$0.12 | \$0.19          | \$0.16 | \$0.14 | \$0.22          | \$0.19 | \$0.17 |

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**POSTAGE RATES ASSUMING SUBSIDY  
AS PRESENTLY AUTHORIZED--  
\$460 MILLION IN 1984  
(IN BILLIONS)**

|                              | <u>BLS</u> |           |           | <u>USPS</u> |           |           | <u>BLS + 3%</u> |           |           | <u>USPS + 3%</u> |           |           |
|------------------------------|------------|-----------|-----------|-------------|-----------|-----------|-----------------|-----------|-----------|------------------|-----------|-----------|
|                              | 7/10%      | 2%        | 3%        | 7/10%       | 2%        | 3%        | 7/10%           | 2%        | 3%        | 7/10%            | 2%        | 3%        |
| <b>EXPENSES</b>              | \$16.3     | \$13.8    | \$12.2    | \$18.7      | \$15.9    | \$14.0    | \$22.2          | \$18.9    | \$16.7    | \$25.9           | \$22.0    | \$19.4    |
| <b>SUBSIDY</b>               | <u>.5</u>  | <u>.5</u> | <u>.5</u> | <u>.5</u>   | <u>.5</u> | <u>.5</u> | <u>.5</u>       | <u>.5</u> | <u>.5</u> | <u>.5</u>        | <u>.5</u> | <u>.5</u> |
| <b>OPERATING<br/>REVENUE</b> | 15.8       | 13.3      | 11.7      | 18.2        | 15.4      | 13.5      | 21.7            | 18.4      | 16.2      | 25.4             | 21.5      | 18.9      |
| <b>POSTAGE<br/>RATE GAO</b>  | \$0.14     | \$0.08    | \$0.04    | \$0.16      | \$0.09    | \$0.04    | \$0.29          | \$0.21    | \$0.15    | \$0.35           | \$0.25    | \$0.18    |
| <b>USPS</b>                  | \$0.14     | \$0.11    | \$0.10    | \$0.16      | \$0.13    | \$0.12    | \$0.19          | \$0.16    | \$0.14    | \$0.22           | \$0.18    | \$0.16    |

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**POSTAGE RATES ASSUMING SUBSIDY  
OF 10% OF EXPENSES  
(IN BILLIONS)**

|                              | <u>BLS</u>   |            |            | <u>USPS</u>  |            |            | <u>BLS + 3%</u> |            |            | <u>USPS + 3%</u> |            |            |
|------------------------------|--------------|------------|------------|--------------|------------|------------|-----------------|------------|------------|------------------|------------|------------|
|                              | <u>7/10%</u> | <u>2%</u>  | <u>3%</u>  | <u>7/10%</u> | <u>2%</u>  | <u>3%</u>  | <u>7/10%</u>    | <u>2%</u>  | <u>3%</u>  | <u>7/10%</u>     | <u>2%</u>  | <u>3%</u>  |
| <b>EXPENSES</b>              | \$16.3       | \$13.8     | \$12.2     | \$18.7       | \$15.9     | \$14.0     | \$22.2          | \$18.9     | \$16.7     | \$25.9           | \$22.0     | \$19.4     |
| <b>SUBSIDY</b>               | <u>1.6</u>   | <u>1.4</u> | <u>1.2</u> | <u>1.9</u>   | <u>1.6</u> | <u>1.4</u> | <u>2.2</u>      | <u>1.9</u> | <u>1.7</u> | <u>2.6</u>       | <u>2.2</u> | <u>1.9</u> |
| <b>OPERATING<br/>REVENUE</b> | 14.7         | 12.4       | 11.0       | 16.8         | 14.3       | 12.6       | 20.0            | 17.0       | 15.0       | 23.3             | 19.8       | 17.5       |
| <b>POSTAGE<br/>RATE GAO</b>  | \$0.11       | \$0.05     | *          | \$0.13       | \$0.06     | *          | \$0.26          | \$0.17     | \$0.12     | \$0.29           | \$0.21     | \$0.14     |
| <b>USPS</b>                  | \$0.13       | \$0.11     | \$0.09     | \$0.14       | \$0.12     | \$0.11     | \$0.17          | \$0.15     | \$0.13     | \$0.20           | \$0.17     | \$0.15     |

\* STAMP PRICE PROJECTION OUTSIDE SCOPE OF FORMULA

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**POSTAGE RATES ASSUMING  
SUBSIDY OF 20% OF EXPENSES  
(IN BILLIONS)**

|                              | <u>BLS</u> |            |            | <u>USPS</u> |            |            | <u>BLS + 3%</u> |            |            | <u>USPS + 3%</u> |            |            |
|------------------------------|------------|------------|------------|-------------|------------|------------|-----------------|------------|------------|------------------|------------|------------|
|                              | 7/10%      | 2%         | 3%         | 7/10%       | 2%         | 3%         | 7/10%           | 2%         | 3%         | 7/10%            | 2%         | 3%         |
| <b>EXPENSE</b>               | \$16.3     | \$13.8     | \$12.2     | \$18.7      | \$15.9     | \$14.0     | \$22.2          | \$18.9     | \$16.7     | \$25.9           | \$22.0     | \$19.4     |
| <b>SUBSIDY</b>               | <u>3.3</u> | <u>2.8</u> | <u>2.4</u> | <u>3.7</u>  | <u>3.2</u> | <u>2.8</u> | <u>4.4</u>      | <u>3.8</u> | <u>3.3</u> | <u>5.2</u>       | <u>4.4</u> | <u>3.9</u> |
| <b>OPERATING<br/>REVENUE</b> | 13.0       | 11.0       | 9.8        | 15.0        | 12.7       | 11.2       | 17.8            | 15.1       | 13.4       | 20.7             | 17.6       | 15.5       |
| <b>POSTAGE<br/>RATE GAO</b>  | \$0.07     | *          | *          | \$0.08      | *          | *          | \$0.19          | \$0.12     | \$0.08     | \$0.23           | \$0.14     | \$0.09     |
| <b>USPS</b>                  | \$0.11     | \$0.10     | \$0.08     | \$0.13      | \$0.11     | \$0.10     | \$0.15          | \$0.13     | \$0.11     | \$0.18           | \$0.15     | \$0.13     |

\* STAMP PRICE PROJECTION OUTSIDE SCOPE OF FORMULA

THE STATEMENTS ON PAGE 2 OF THIS REPORT ARE AN INTEGRAL PART OF THIS APPENDIX.

COMMENTS ON APPENDIXES XIV, XV, AND XVI

These subsidies were selected because:

- The \$0.5 billion subsidy is authorized by the Postal Reorganization Act of 1970 and can continue indefinitely.
  
- The 10 and 20 percent of expenses computations are based on legislative proposals.

## THE RANGE OF POSSIBILITIES

|                                  | POSSIBLE SITUATIONS        |                   |                   |
|----------------------------------|----------------------------|-------------------|-------------------|
|                                  | WORST                      | BEST              | MOST LIKELY       |
| <b>INFLATION</b>                 | USPS *RATE+3%              | BLS               | USPS *RATE        |
| <b>PRODUCTIVITY GAINS</b>        | 7/10%                      | 3%                | 7/10%             |
| <b>EXPENSES</b>                  | \$25.9 B                   | \$12.2 B          | \$18.7B           |
| <b>COST OF FIRST-CLASS STAMP</b> | GAO \$0.36<br>USPS \$0.22¢ | \$0.05<br>\$0.10¢ | \$0.18<br>\$0.16¢ |

**\*DATA RESOURCES INCORPORATED**

THE STATEMENTS ON PAGE 2 OF THIS REPORT ARE AN INTEGRAL PART OF THIS APPENDIX.

## COMMENTS ON APPENDIX XVII

We selected the 0.7-percent productivity rate because of the limited opportunities to mechanize postal operations. Almost half the work force has duties that require personal contact with the public--e.g., city and rural letter carriers; special delivery messengers; window clerks; and the postmasters of small, often one-man operations.

## EFFECT OF VARYING SUBSIDIES ON MOST LIKELY SITUATION

|                                     | AMOUNT<br>OF<br>SUBSIDY |             | COST OF<br>FIRST-CLASS<br>STAMP |
|-------------------------------------|-------------------------|-------------|---------------------------------|
| <b>NO SUBSIDY-BREAKEVEN</b>         | <b>NONE</b>             | <b>GAO</b>  | <b>\$0.18</b>                   |
|                                     |                         | <b>USPS</b> | <b>\$0.16</b>                   |
| <b>PRESENTLY AUTHORIZED SUBSIDY</b> | <b>\$0.5 B</b>          | <b>GAO</b>  | <b>\$0.16</b>                   |
|                                     |                         | <b>USPS</b> | <b>\$0.16</b>                   |
| <b>SUBSIDY AT 10% OF EXPENSES</b>   | <b>\$1.9 B</b>          | <b>GAO</b>  | <b>\$0.13</b>                   |
|                                     |                         | <b>USPS</b> | <b>\$0.14</b>                   |
| <b>SUBSIDY AT 20% OF EXPENSES</b>   | <b>\$3.7 B</b>          | <b>GAO</b>  | <b>\$0.08</b>                   |
|                                     |                         | <b>USPS</b> | <b>\$0.13</b>                   |

THE STATEMENTS ON PAGE 2 OF THIS REPORT ARE AN INTEGRAL PART OF THIS APPENDIX.

## EQUATIONS FOR ESTIMATING POSTAL INDICATORS

(Computed T-Value in Parentheses)

## 1. Postal volume (note a)

$$V = -150349 + 34.3546 \text{ DPI} + 5441.82 \text{ FAMIND} - 35.0893 \text{ FAMIND}^2$$

$$\begin{array}{ccc} (4.70100) & (13.4447) & (-11.3582) \end{array}$$

$$R = .99783$$

## 2. Postal expenses (note b)

$$\text{Log Exp} = 7.27660 + \text{Log V} - 1.15680 \text{ Log Prod}$$

$$\begin{array}{cc} (6.0649) & (-5.61259) \end{array}$$

$$R = 0.84079$$

## 3. Postal revenues (note c)

$$\text{INC} = -3129.33 + 0.09227 \text{ V(L)} + 0.37390 \text{ P}$$

$$\begin{array}{cc} (22.8077) & (7.15430) \end{array}$$

$$R = 0.99044$$

Where V = Number of pieces of mail, all classes.

DPI = Disposable personal income in 1973 constant dollars using the GNP price deflator.

FAMIND = Number of families and unrelated individuals.

EXP = Postal Service expenses in 1973 constant dollars using General Government (Federal) price deflator.

Prod = Pieces of mail per paid man-year.

INC = Postal Service operating income in 1973 constant dollars using GNP price deflator.

V(L) = Volume lagged 1 year.

P = Cost of first-class stamp in 1973 constant dollars using GNP price deflator.

a/ The original estimating equation using disposable personal income and families and individuals was rejected when the residuals indicated non-linearity in the data. After evaluating several types of data transformations, acceptable results were obtained by adding the term "families and individuals" squared to the equation.

b/ As in the case of volume, a simple linear relationship did not exist; therefore, a data transformation--this time a logarithmic form--was used to correct for nonlinearity.

c/ Because it takes a certain amount of time for business and individuals to respond to changes in postal rates, volume in this equation is represented as a lagged variable. The effect is that the equation is based on the relationship between 1 year's price and the following year's volume.

**END**