



UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

CIVIL DIVISION

OCT 29 1971



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Dear Mr. Spence:

During a meeting with representatives of your staff on August 12, 1971, we discussed an inventory management technique that can be used by the Government Printing Office to reduce its levels of stored paper stock. We are bringing this matter to your attention because you expressed to us that you would welcome suggestions for increasing the efficiency of Printing Office operations and because you may wish to give this matter your personal attention.

We recently inquired into the basis used by the Printing Office to determine levels for paper stockage. The Printing Office has an established reorder point for each item in its paper stock. The reorder point is calculated by multiplying the average monthly usage by a month factor that varies for each item and ranges from 2 to 6. This means that on-hand and on-order levels are not intended to fall below the equivalent of 2 months' usage for some items and 6 months' for others. A major weakness in the method used to determine the month factor is the heavy reliance on personal judgment and the little use of readily available historical data.

To test our observations, we selected three frequently used items: offset book paper (property number 10087), white writing paper (property number 205), and United States postal card paper (property number 1139).

We introduced historical data covering a 2-1/2 year period into a computer simulation of Printing Office operations. The data included factors such as purchase order dates, quantities ordered and received, receiving dates, and daily usage. We projected the simulation forward 5 years. Our analysis of simulated inventory activity showed that the Printing Office could substantially reduce its reorder points without running short of paper. Our study indicated that existing inventory practices may be resulting in unnecessarily large "cushions" of stock on-hand or on-order.

The inventory model which we developed provides a method for determining reorder points and quantities of paper to be purchased that is more efficient than one relying heavily on personal judgment. The model used for each of the three items we selected is adaptable for use for all paper items purchased by the Printing Office.

Based on our review of these three items, we estimate that the Printing Office may be able to reduce its total investment in paper inventory by about \$2 million, or 23 percent of the Printing Office's paper inventory investment, by using the model to calculate reorder points and purchase quantities. We have not attempted to estimate the amount of savings that may accrue from reductions in storage and related costs.

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During our meeting with your staff on August 12, 1971, we agreed to work with them in refining and testing the model. The objectives of our cooperative effort are to make certain that no important aspect of your operations has been overlooked and to verify the results of the model by operating it simultaneously with the existing system.

We have loaned our analytic workpapers to the Printing Office's Deputy Director, Data Systems Service, for review before the model is converted to use on your in-house computer. We were advised by your staff that the testing and verification of the model will be completed within 6 months.

We hope this modeling technique stimulates interest in further improvements in inventory management. If we can be of further assistance to you on this matter, please let us know.

A copy of this letter is being sent to the Staff Director of the Joint Committee on Printing.

Sincerely yours,

E. C. Messinger

Edward C. Messinger
Assistant Director

The Honorable A. N. Spence
Public Printer
U.S. Government Printing Office