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BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268–0001

POSTAL RATE AND FEE CHANGES, 2001	Docket No. R2001–1

RESPONSE OF UNITED STATES POSTAL SERVICE TO INTERROGATORIES OF OFFICE OF THE CONSUMER ADVOCATE (OCA/USPS–172-176)

The United States Postal Service hereby provides its responses to the following interrogatories of Office of the Consumer Advocate: OCA/USPS–172-176, filed on November 2, 2001. Interrogatory OCA/USPS-172 has been redirected to USPS Witness Bozzo (USPS-T-14).

Each interrogatory is stated verbatim and is followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

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November 16, 2001

RESPONSE OF THE UNITED STATES POSTAL SERVICE TO
INTERROGATORY OF THE OFFICE OF THE CONSUMER ADVOCATE

OCA/USPS-173. Please refer to the response to interrogatory OCA/USPS-95. Please provide a response that normalizes for

a. PQ4 (*e.g.*, multiply by 0.75) to take account of the fact that PQ4 has 4 APs and the other PQs have 3 APs;
b. Census 2000 mailings;
c. Other adjustments performed by Postal Service cost, volume, and revenue witnesses, including data systems witnesses and forecasting witnesses, to account for nonrecurring events.

RESPONSE:

The data below provide a response to OCA/USPS-95, after deflating values for PQ4 by multiplying them by a factor of 0.75. Information or analysis necessary to implement the other types of normalization suggested by the question do not exist.

a. cards and letter-shaped pieces

HIGH VOLUMES

1999 PQ 2	32,970M
2000 PQ 3	34,783M
2001 PQ 1	35,129M

LOW VOLUMES

1999 PQ 4	30,723M
2000 PQ 4	31,519M
2001 PQ 4	32,883M

b. flat shaped pieces

HIGH VOLUMES

1999 PQ 1	11,032M
2000 PQ 1	11,645M
2001 PQ 1	12,634M

LOW VOLUMES

1999 PQ 2	9,178M
2000 PQ 2	9,831M

2001 PQ 4 10,063M

c. nonletter/nonflat-shaped pieces.fd

HIGH VOLUMES

1999 PQ 1 786M
2000 PQ 2 791M
2001 PQ 2 794M

LOW VOLUMES

1999 PQ 4 751M
2000 PQ 4 684M
2001 PQ 4 676M

RESPONSE OF UNITED STATES POSTAL SERVICE
TO INTERROGATORIES OF OFFICE OF CONSUMER ADVOCATE

OCA/USPS-174 In the letter-shaped mailstream, is there a correlation between

a. weight and thickness of mail pieces?

b. thickness of mail pieces and the rate at which stackers fill?

c. thickness of mail pieces and mail processing labor costs?

d. other mail piece characteristics (not weight or thickness) and mail processing labor costs?

e. Please provide copies of any documents that support the responses to Parts a. through d., above. If no documents are available, please provide an explanation of the responses.

RESPONSE:

(a) The Postal Service does not have a study that specifically analyzes this correlation. However, this does seem intuitive.

(b) Yes. Piece thickness correlates with the number of pieces that will fit in each stacker, the frequency that stackers must be swept, and the frequency of removing full trays and replacing them with empty trays.

(c) There are no studies that analyze this specific correlation. However, with the impact that piece thickness has on the rate at which trays are fed, stackers filled, trays filled and replaced it would be expected that thickness would have some impact on throughput/productivity and, consequently, labor costs.

(d) Yes. Address and barcode quality also impact labor costs. If the address or barcode cannot be resolved by the OCR/BCR, and the piece must be processed offline via RCR or RBCS (see USPS-T-39, pages 4 -6) or manually; this will impact labor costs. Also, mail piece characteristics other than weight and thickness that force letters to be processed manually also impact labor costs. Examples of such characteristics can be found at USPS-T-39, pages 9 and 10.

(e) No supporting documentation is available. Explanations are provided in subparts (a – d) above.

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OCA/USPS-175 Please refer to the response to interrogatory OCA/USPS-44 and to the attachment thereto.

a. For each piece of equipment tested (i.e., ECA optical character reader (OCR), Pitney Bowes OCR, Burroughs OCR, ECA bar code sorter (BCS), Bell & Howell BCS), please provide the number currently in normal service in mail processing facilities.

b. Please confirm that mail piece characteristics other than weight (i.e., thickness, length, height, and aspect ratio) were varied simultaneously with weight during data collection. If you do not confirm, please explain.

c. Please provide copies of any documents relating to the correlation between letter-shaped mail piece weight and mail processing equipment performance.

d. The following statement appears at page three of the Attachment (emphasis added):

> Tests were conducted both with pure runs as well as intermixed with ***the existing mail base***, and the same conclusion was reached- throughput decreased as the heavier mail is fed. Has this statement been corroborated since February 15. 1994? If so, please provide copies of any documents related to such corroboration.

e. Please reconcile the statement quoted in Part d., above, with the response to Part b. of interrogatory OCA/USPS-44.

f. Please provide copies of any Engineering Center documents dated after February 15, 1994, relating to the affect on mail processing equipment of mail piece characteristics.

RESPONSE:

(a) See response to OCA/USPS-172, subpart (a).

(b) Confirmed for thickness, which varied simultaneously with weight. Not confirmed for other variables.

(c – d) See *3.5 ounce Heavy Letter Mail Field Evaluation Report* attached.

(e) OCA/USPS-44, subpart (b), asks that it be confirmed that the data provided in OCA/USPS-44, subpart (a) would be the same for barcoded First-Class letter-shaped pieces and barcoded Standard Mail letter-shaped pieces of a given

weight. The response to OCA/USPS-44, subpart (a), pointed to the study, which contained the statement included in subpart (d) of this interrogatory. This statement and the response to OCA/USPS-44, subpart (b) are recognizing the fact that the decreases in throughput realized in the test were due to heavy *test* mail pieces ("standard #10 envelopes stuffed with inserts") intermixed with the existing mail base. Actual heavy First-Class and Standard Mail letters were not tested. Consequently, the results of this test cannot be used to confirm that actual heavy First-Class Mail versus Standard Mail letters, which have different characteristics, would yield similar results.

(f) See subparts (c) and (d).

Attachment to OCA/USPS-T7S 1 of 4

UNITED STATES
POSTAL SERVICE

3.5 ounce Heavy Letter Mail Field Evaluation Report

April 6, 2001
Technology Development and Applications
Engineering

Attachment to OCA/USPS-T75 2014

Introduction and Background Information

Since 1994 the U.S. Postal Service has accepted and discounted automation compatible mail that weighed as much as 3.3 ounces. Following a request from mailing industry representatives, the U. S. Postal Service agreed to conduct a test to determine the feasibility of raising the weight limit for automation compatible mail from 3.3 to 3.5 ounces. To make this determination test decks were obtained from a commercial mailing house. Mail pieces within the test deck were designed around a strict criterion, written by U.S.P.S. Engineering. This was done to eliminate those aspects, of currently accepted heavy mail pieces, that have proven to be problematic. The test was conducted at two geographic locations, Fort Myers Fl. and the suburbs of Philadelphia, Pennsylvania. At each location, two field sites participated in the test, a P&DC and a local Delivery Unit. In each P&DC mail was run on the MPBCS and the DBCS. In the Delivery Units, mail was run on the CSBCS. The test was conducted between 4/20/99 and 5/13/99. The goals and objectives of the test were as follows:

- To assess the impact of the 3.5 ounce mail on the automation equipment's ability to sort mail.
- To determine the degree to which the heavier mail affects the ergonomics of mail handling.
- To study the influence of the heavier mail upon the overall operational environment.
- To ascertain the extent to which the heavier mail will increase equipment maintenance costs.
- To provide data to be used in the processing cost comparison of the 3.5 oz. versus the 3.3 oz. mail.
- To do preemptive testing on 3.7 ounce mail for future reference.

Test Plan

Six types of test decks were prepared for the test. Their contents were as follows:

- Test Deck 1 – 1 ounce letters with a 2% mix of 3.3 ounce letters.
- Test Deck 2 – 1 ounce letters with a 2% mix of 3.5 ounce letters.
- Test Deck 3 – all 3.3 ounce letters.
- Test Deck 4 – all 3.5 ounce letters.
- Test Deck 5 – all 3.7 ounce letters
- Test Deck 6 – 1 ounce letters with a 2% mix of 3.7 ounce letters.

The test consisted of daily test deck volume runs on the aforementioned equipment. Throughput, accept, reject, error, flyout, damage and jam rates were recorded. All mail pieces were manually examined for sort accuracy, stacker count and mail damage. The effect of the heavy mail on equipment maintenance was also evaluated. An Ergonomic evaluation was conducted as part of the test. Hour long volume runs were conducted to simulate the handling and fatigue conditions operators will experience during continuous processing of heavy mail.

Observations and Test Results

The following are observations made during the test and summarized results based on the reduction of the raw data taken:

- As was expected, the 2% seeded decks of 3.3, 3.5 and 3.7 ounce mail processed extremely well and were no cause for concern.

- Test decks of 100% 3.7 ounce mail caused excessive amounts of damage to the equipment. Because of this, processing of the 3.7 ounce test decks was discontinued. Because of this, it is recommended that any future request to raise the weight limit above 3.5 ounces should be rejected as impractical given the current configurations of USPS mail processing equipment.

- CSBCS runs of 100% 3.3 and 3.5 ounce mail placed an enormous burden on the operators because of excessive overflow conditions. If volumes of pure heavy mail trays that reach delivery units grow to a level comparable to that processed during this test, sites may find their operations debilitated, given their current sweeping practices.

- Given that 3.3 ounce mail pieces are currently being accepted, the "worst case" comparison that this test examined was that of the performance of 100% 3.3 ounce mail versus 100% 3.5 ounce mail. The table below summarizes the results of this "worst case" condition.

	100% 3.3 OZ	100% 3.5 OZ	DELTA
→CSBCS←			
FORT MYERS D.U.			
THROUGHPUT	2,682 PIECES	2,474 PIECES	
ACCEPT RATE	96.90%	97.70%	0.80% INCREASE
ERROR RATE	1.02%	0.06%	0.96% DECREASE
JAM RATE	0.34%	0.55%	0.21% INCREASE
BLUE BELL D.U.			
THROUGHPUT	2,671 PIECES	2,726 PIECES	
ACCEPT RATE	97.80%	98.60%	0.80% INCREASE
ERROR RATE	0.02%	0.00%	0.02% DECREASE
JAM RATE	0.22%	0.82%	0.6% INCREASE
→DBCS←			
FORT MYERS P&DC			
THROUGHPUT	13,738 PIECES	11,269 PIECES	
ACCEPT RATE	97.70%	96.90%	0.80% DECREASE
ERROR RATE	0.00%	0.06%	0.06% INCREASE
JAM RATE	0.20%	0.24%	0.04% INCREASE
SEPA P&DC			
THROUGHPUT	14,075 PIECES	15,347 PIECES	
ACCEPT RATE	98.50%	98.80%	0.30% INCREASE
ERROR RATE	0.00%	0.00%	NO DELTA
JAM RATE	0.10%	0.11%	0.01% INCREASE
→MPBCS←			
FORT MYERS P&DC			
THROUGHPUT	14,293 PIECES	9,906 PIECES	
ACCEPT RATE	98.30%	98.60%	0.30% INCREASE
ERROR RATE	0.00%	0.00%	NO DELTA
JAM RATE	1.47%	0.92%	0.55% DECREASE
SEPA P&DC			
THROUGHPUT	11,977 PIECES	13,184 PIECES	
ACCEPT RATE	96.70%	98.70%	2.00% INCREASE
ERROR RATE	0.01%	0.00%	0.01% DECREASE
JAM RATE	0.92%	0.43%	0.49% DECREASE
Spreadsheets containing all test run data are available from Terry Gingell or Thomas Potter at Engineering.			

- As can be seen from the table, the performance differences between 3.3 ounce and 3.5 ounce mail pieces were marginal.

- The test revealed no increase in maintenance requirements due to the running of 3.5 oz. versus 3.3 oz. mail. However, it should be noted that the relatively short duration of the test could not reveal the long-term effects that the equipment may experience.

- The difference in throughput rates, error rates, and jam rates for the 3.5 oz. test decks and the 3.3 oz. test decks were negligible. However, it should be noted that throughput rates for both the 3.3 oz. and 3.5 oz. test decks were significantly lower than the typical throughput rates for 1 oz. letter mail.

Recommendations

The U. S. Postal Service should consider increasing, with conditions, the weight limit for automation compatible letter mail from 3.3 ounces to 3.5 ounces. The conditions for this increase are as follows:

- The DMM should be amended to restrict the design of 3.5 oz. mail pieces. The purpose of these restrictions is to eliminate mail piece design that renders mail essentially nonmachinable in spite of the fact that it has been given an automation compatible discount The following mail piece restrictions should be codified for inclusion in the DMM at the time of the next rate case:

1) Maximum mail piece thickness should not exceed 0.255 inches. Mail piece thickness should not vary more than 15% over the surface of the mail piece.

2) Size A8 envelops (8.12 x 5.5) should be prohibited.

3) The use of envelope windows, particularly open windows, should be prohibited.

4) Envelope material should be no less than 28 lb. basis weight paper.

5) Envelopes should be trayed using USPS white/red plastic corrugated EMM trays.

6) Insert shift in the lengthwise direction should not exceed a maximum of .562 inches.

- Ergonomic concerns may be minimized by a directive to the field requiring that incoming trays of heavy mail be mixed with trays of lighter mail. Such a procedure will limit the risks, faced by the equipment operators, of lifting and repetitive motion injuries inherent in the continuous handling of heavy mail.

- Consideration should be given to the potential that heavy mail volume that reaches the CSBCS machines in Delivery Units might rise to an unmanageable level. Before this occurs the current methods of operation should be reevaluated.

RESPONSE OF UNITED STATES POSTAL SERVICE
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OCA/USPS-176 Please refer to the response to OCA/USPS44(b). Assume two groups of 10,000 letter-shaped pieces are identical in every respect but one. More specifically, each letter-shaped piece in each group is automation compatible, barcoded, and weighs one ounce. However, the pieces in one group are twice as thick as the pieces in the other group.

a. Assume further that the two groups of letter-shaped pieces are processed in one pass on the same Delivery Bar Code Sorter (DBCS). Please confirm that the throughputs and velocities for that pass would be the same for each group. If you do not confirm, please identify and describe all factors that would cause the throughputs and velocities for each group to differ.

b. Assume the same facts above and in part a. Please confirm that the productivities for each group would be the same. If you do not confirm, please identify and describe all factors that would cause the productivities for each group to differ.

c. Assume the same facts above and in part a. Please confirm that the wage rates for each group would be the same. If you do not confirm, please identify and describe all factors that would cause the wage rates for each group to differ.

d. Assume the same facts above and in part a. Please confirm that the total cost and the unit cost for processing each group on the DBCS would be the same. If you do not do not confirm, please identify and describe all factors that would cause the total and unit costs for each group to differ.

e. Assume the same facts above and in part a., except that each letter-shaped piece in each group weighed 2 ounces. Please answer parts a., b., c., and d. assuming that each letter-shaped piece in each group weighed 2 ounces.

f. Assume the same facts above and in part a., except that each letter-shaped piece in each group weighed 3 ounces. Please answer parts a., b., c., and d. assuming that each letter-shaped piece in each group weighed 3 ounces.

g. Assume the same facts above and in part a. Please confirm that the thicker pieces would fill twice as many trays per hour.

h. Please confirm that the responses to Parts a. through g. would be the same where the two groups were processed on a Mail Processing Bar Code Sorter (MPBCS) and a Carrier Sequencing Bar Code Sorter (CSBCS). If you do not confirm, please explain.

i. Please confirm that the responses to Parts a. through h. would be the same where the two groups consisted of 100,000, 1 million, and 10 million letter-shaped pieces, respectively. If you do not confirm, please explain.

RESPONSE:

(a) Not confirmed. See responses to OCA/USPS-174, subparts (b and c). Also, while unaware of testing specific to piece thickness, experience has shown that thicker pieces tend to jam more frequently. Jams negatively impact throughput and productivity.

(b) Not confirmed. See response to subpart (a) above. Based on the impact each group would have on the increased rate at which trays need to be fed, stackers filled, full trays swept and replaced with empty trays, as well as, the number of jams, it would be expected that the productivities would differ.

(c) Confirmed if the two groups are of the same class.

(d) Not confirmed. See response to subparts (a) and (b) above. If the productivities differ for the two groups, the total and unit costs would differ.

(e and f) Responses provided in parts (a), (b), (c), and (d) above also apply if each group weighed 2 ounces or 3 ounces.

(g) Not confirmed. If the jam rate increases with piece thickness, it would be expected that pieces twice as thick would fill more trays per hour, but something short of twice as many per hour.

(h) Confirmed.

(i) Not confirmed. See the responses to OCA/USPS-161, subpart (h) and OCA/USPS-170, subpart (h). Assuming the thicker pieces have a lower throughput, the issues spelled out in these responses would also apply in this example.

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.

Joseph K. Moore

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November 16, 2001