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

POSTAL RATE AND FEE CHANGES, 2006

Docket No. R2006-1

DIRECT TESTIMONY OF
MARTIN CZIGLER
ON BEHALF OF
UNITED STATES POSTAL SERVICE

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Associated Category 1 Library References

USPS-LR-L-9/R2006-1 IOCS Statistical and Computer Documentation
(source code and data on CD-ROM)

USPS-LR-L-10/R2006-1 IOCS-CODES Computer System Documentation and
Source Code (on CD-ROM)

USPS-LR-L-21/R2006-1 Handbook F-45, In-Office Cost System Field Operating
Instructions, October 2004 (CD-ROM)

USPS-LR-L-23/R2006-1 Supplemental Statistical Programs Policies & Data
Collection Instructions

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Downstream Users

- 2 USPS-T-9 Base Year Costs – Witness Milanovic
- 3 USPS-T-11 Mail Processing Costs – Witness Van-Ty-Smith
- 4 USPS-T-13 Mail Processing Costs, Facility Study – Witness Smith
- 5 USPS-T-23 Special Studies – Witness Page
- 6 USPS-T-30 Delivery Costs by Shape – Witness Kelley
- 7 USPS-T-46 IOCS Survey Instrument Redesign – Witness Bozzo

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DIRECT TESTIMONY
OF
MARTIN CZIGLER.

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AUTOBIOGRAPHICAL SKETCH

6 My name is Martin Czigler. I have been employed by the Postal Service since
7 December of 2002 as a Mathematical Statistician in the Revenue and Cost Systems
8 group in Statistical Programs. In my present position, I am the program manager for
9 the In-Office Cost System (IOCS). I provided technical support for witness Shaw in
10 Docket No. R2005-1.

11 My education includes a B.Sc.(Honours, Mathematics) from Queen's University,
12 Kingston, Canada, and a Ph.D. in operations research from the Department of
13 Industrial Engineering at Northwestern University, Evanston, Illinois. Prior to my
14 employment with the Postal Service, I worked in private industry for fourteen years as
15 a statistician, operations research analyst, and software and data systems developer.

1 *I. PURPOSE AND SCOPE OF TESTIMONY*

2 The Postal Service relies on various statistical systems and special studies to
3 supplement accounting systems and thereby estimate costs for certain postal
4 operating functions and revenues, volumes and attributable costs for the various
5 categories of mail. The In-Office Cost System (IOCS) is a work sampling system
6 designed to produce cost estimates for various employee activities in the office.

7 The purpose of this testimony is to describe the IOCS. I describe the sample design,
8 the data collection methodology, the editing and processing of IOCS sample data, the
9 types of estimates produced from the IOCS, and the reliability of major estimates. I
10 also discuss changes in the IOCS data collection instrument implemented at the
11 beginning of FY2005. Dr. Bozzo's testimony, USPS-T-46, addresses the process
12 through which the revised IOCS data collection instrument was developed, and
13 impacts on the BY 2005 CRA.

14 *II. SAMPLE DESIGN*

15 The IOCS uses a probability sample of employee activity to develop estimates of
16 proportions of employee work time spent on various office functions, and for certain
17 functions, the proportions of time spent handling and/or processing mail in their
18 respective mail categories.

1 The IOCS is an ongoing system with a sample selected for each pay period.
2 Approximately 4-5 weeks prior to each sample pay period, sample employees are
3 selected from the most current payroll files for the IOCS sample offices. Employees
4 are sampled independently within Cost Ascertainment Group (CAG) for each of four
5 employee crafts: (1) Clerks, (2) Mail Handlers, (3) City Carriers, and (4) Supervisors.
6 Selected employees are then randomly assigned an instant in time during the sample
7 week for observation.

8 The IOCS sample design documentation and sample selection programs appear in
9 the IOCS Statistical and Computer System Documentation, USPS-LR-L-9/R2006-1.
10 The IOCS sample design is described in Section II. The sample selection programs
11 are described in Section IV, and are included in the IOCS CD-ROM described in
12 Appendix H.¹

13 *III. DATA COLLECTION*

14 The IOCS data collection instrument consists of a data entry program that resides on
15 a laptop computer. This hardware and software are referred to as the IOCS
16 Computerized On-Site Data Entry System (IOCS-CODES). At the scheduled sample
17 time, the data collector locates the sample employee and enters data describing the
18 employee's observed activity directly into IOCS-CODES. The data entry software
19 guides the data collector through the appropriate questions and performs basic

¹ Appendices A-I refer to the appendices of the IOCS Statistical and Computer Documentation, USPS-LR-L-9.

1 consistency checks on the entered data. Sample data from various laptops at one
2 site are transferred to a central server, the Web Base Unit. Then, five times a month,
3 the data are transmitted from the Web Base Unit to a mainframe computer for further
4 editing and processing.

5 An overview of field IOCS test administration appears in section V of the IOCS
6 Documentation (USPS-LR-L-9). Detailed descriptions of IOCS data collection
7 procedures appear in the IOCS Field Operating Instructions, Handbook F-45
8 (USPS-LR-L-21/R2006-1). Updates to the Handbook F-45 appear in Supplemental
9 Statistical Programs Policies & Data Collection Instructions (USPS-LR-L-23/R2006-
10 1). IOCS-CODES computer system documentation and source code appear in
11 USPS-LR-L-10/R2006-1.

12 The IOCS survey instrument was redesigned in FY2005, a subject discussed below
13 in sections VI and VII.

14 *IV. DATA VALIDATION AND EDITING*

15 After the IOCS data are transmitted to the mainframe computer, a series of SAS
16 programs performs data validation, editing, and automated error correction. Included
17 in this process is the assignment of activity codes used in subsequent costing
18 programs.

1 Data validation and editing procedures (and the programs associated with these
2 procedures) appear in Section VI and several appendices of the IOCS Statistical and
3 Computer Documentation, USPS-LR-L-9. Specifically, Section VI of USPS-LR-L-9
4 describes the validation and editing programs; Appendix B contains a flowchart that
5 documents the assignment of activity codes; Appendix C describes detailed edit
6 rules; Appendix D documents the Within County periodicals edits; and Appendix E
7 contains a flowchart documenting the encirclement rules used to assign special
8 service activity codes. All validation and editing programs appear on the CD-ROM
9 described in Appendix H.

10 V. *ESTIMATION*

11 The IOCS sample data are used to produce estimates of costs by function for each
12 craft group. Cost weight factors are assigned to each sample observation, reflecting
13 both the sample design and accrued costs for CAG and craft group. Hence, a dollar
14 amount can be associated with each record in the IOCS data file. The cost weighted
15 IOCS data file is then converted into a final SAS data set that is used for producing
16 cost estimates.

17 Several craft level reports are produced from the final IOCS data file for use as CRA
18 spreadsheet inputs. One such report is the Carrier Mixed Mail (CARMM) report.

19 Section VII (Estimation), Part F (City Carrier Mixed Mail Cost Distribution Extract and

1 Report) of the IOCS Statistical and Computer Documentation (USPS-LR-L-9)
2 describes the production process for these reports.

3 As with any sample based estimate, selection of a different sample (according to the
4 same sample design), could result in slightly different estimates. The amount of
5 variation one could expect due to sampling alone is quantified by the coefficient of
6 variation (CV). CVs can be used to produce confidence intervals for estimates.
7 Table 1 presents cost estimates, their estimated CVs, and 95 percent confidence
8 intervals for Cost Segment 3.1, Mail Processing. Tables 2 and 3 provide similar
9 estimates for City Carriers and Supervisors. Appendix I, USPS-LR-L-9, describes the
10 methodology used to calculate CVs.

11 The development of cost weighting factors, production of final SAS data files, CV
12 estimation, and descriptions of various craft level reports are provided in Section VII
13 of USPS-LR-L-9. The source code for weighting, production of final data files, CV
14 estimation, and craft reports appears on the CD-ROM, described in Appendix H
15 (IOCS CD-ROM Contents, USPS-LR-L-9).

16 *VI. REDESIGN OF IOCS SURVEY INSTRUMENT*

17 The IOCS-CODES survey instrument used by data collectors is new for FY2005. A
18 detailed flowchart of the new data entry software appears in Appendix H of the
19 CD-ROM for the IOCS System Documentation, USPS-LR-L-9, which shows each

1 question, its possible responses and the logic that controls the flow of the program.
2 A data dictionary for the IOCS survey instrument fields together with the IOCS record
3 format information appear in Appendix A, Part 2 of USPS-LR-L-9. Detailed IOCS
4 data collection procedures, including instructions for each survey question, appear in
5 Handbook F-45, "IOCS Field Operating Instructions," provided in USPS-LR-L-21; a
6 "Summary of Changes" appears on pages iii-xiv. Supplemental instructions to
7 Handbook F-45 are contained in USPS-LR-L-23. Additional IOCS-CODES system
8 documentation appears in Section 1 of USPS-LR-L-10. Dr. Bozzo's testimony
9 (USPS-T-46) discusses the reasons for, and validation of, the changes to the survey
10 instrument.

11 VI.A. GENERAL IMPROVEMENTS

12 Several general improvements were made to the data entry software. The new
13 software uses the principle of "telescoping", first identifying a domain of interest, then
14 asking follow-up questions that are focused within that domain (see USPS-T-46,
15 p. 12). Each question has relatively few options, so that the data collector sees fewer
16 options that are irrelevant or inconsistent given previous responses. Several
17 questions are now designed so that the user selects the first applicable option rather
18 than the best option from the entire list. Another improvement is that instructions are
19 displayed on-screen and the specific instructions shown depend on responses to
20 previous questions.

1 Recognizing that some IOCS readings are performed remotely, questions and
2 instructions are now scripted so they can be read over the telephone to a respondent
3 in a consistent manner (see USPS-T-46, section II.E). Phone readings are also
4 facilitated by questions now designed to select the first applicable option, as well as
5 by the reduced length of option lists. For carrier readings, phone respondents now
6 need visit the employee's work area only once, and they also benefit from rules for
7 selecting mailpieces that are now greatly simplified (see section VI.D).

8 Additional information is provided on question screens to help clarify the options and
9 the subsequent program flow. Context sensitive help screens provide further detailed
10 information on a variety of topics.² A review screen summarizes all responses to the
11 reading, allowing quick review of all questions and answers.

12 VI.B. MAILPIECE INFORMATION

13 With the previous survey instrument, the data collector determined and recorded the
14 subclass of the mailpiece. In the new software, the data collector records only
15 observable mailpiece characteristics using the principle of "key what you see" (see
16 USPS-T-46, section II.D). These characteristics, such as indicia, markings, shape
17 and weight, now determine the mail-related activity code. The questions "telescope"
18 options by eliminating those that are inconsistent with previous responses; for
19 example, the question about the specific type of ECR marking (Q23J2) is asked only
20 if it has already been determined that the mailpiece has an ECR marking.

² Examples include Manifest Marking System (MMS) markings, detailed shape definitions, international markings, acronyms, sort plans, and many more.

1 New questions have been introduced that capture Manifest Marking System
2 (MMS) markings. Barcode questions have been redesigned; rather than requiring
3 the data collector to identify 9- or 11-digit POSTNET barcodes, the software records
4 observable characteristics that determine the rate category.³ Mailpiece weight is no
5 longer recorded in weight intervals such as “greater than 4 ounces,” but is now
6 entered to the tenth of an ounce.⁴ Data on both Detached Address Label (DAL) mail
7 and its parent piece are now recorded when both are available. Inbound and
8 outbound international mail have separate question sequences. Additional shape
9 information is collected that identifies oversized “flats” thicker than 0.75 inches. The
10 laptop software has many new validation checks that warn the data collector
11 immediately of apparent inconsistencies among recorded mailpiece characteristics.⁵

12 In general, the new questionnaire ends once sufficient information has been recorded
13 to determine the correct rate category, thus improving the efficiency of readings. For
14 example, no further questions are asked on markings or special services once USPS
15 Mail has been identified.

16 VI.C. EMPLOYEE ACTIVITIES

17 Questions related to clerk and mail handler activities are reorganized (see
18 USPS-T-46, section II.C). IOCS-CODES displays a separate set of questions for

³ Barcode characteristics include: barcode location (in a window, in an address block, etc.), whether preceded by a mailer-applied MLOCR marking, and the number of high bars.

⁴ New portable scales were provided to each data collector that can measure up to ten pounds in one-tenth ounce increments.

⁵ Examples include weight or postage incompatible with markings, and markings or lack of markings incompatible with the indicium.

1 BMC facilities. Post offices, stations, and branches also have certain questions that
2 are distinct from those for plants. The survey instrument now identifies the
3 employee's assigned operational area at the time of the reading before recording her
4 specific activity.⁶ The assigned operational area is usually, but not necessarily,
5 consistent with the MODS code to which the employee is clocked. The telescoping
6 principle is used with these questions so that, for example, the activity questions
7 depend on and are consistent with the employee's assignment. These include
8 "allied" activities, which no longer constitute a separate category. New activities have
9 also been added, such as "Waiting for Mail/Machine Restart" and "Setting Up,
10 Scheme Change, or Taking Down" for automation equipment. Several administrative
11 activities are now combined together.

12 Questions on carrier activities have also been modified. Carrier route data from the
13 Address Management System (AMS) are integrated directly into the laptop software,
14 so the data collector need only enter the ZIP Code and route number rather than
15 determine the route type. Different activity questions are asked depending on
16 whether the employee is at a carrier case or not. The survey instrument no longer
17 asks about non-carrier activities.

18 Supervisor questions on the assignments and activities of supervised employees
19 have been modified for consistency with the corresponding new options for clerks,
20 mail handlers and carriers. In addition, when the activity of the sampled supervisor

⁶ While the old question Q19 has been eliminated, its options are incorporated in the new assignment questions.

1 involves a subordinate supervisor, the questions now explicitly ask for the craft of the
2 employees for which the subordinate supervisor is responsible, thus clarifying
3 existing policy.

4 VI.D. HANDLING

5 The new software incorporates more descriptive terminology for mail container
6 categories (USPS-T-46, section II.B.2). Most former “containers” such as BMCs,
7 APCs, hampers, etc., are now collectively called “wheeled containers.” Most former
8 “items” such as trays, tubs, sacks, etc., are now referred to as “non-wheeled
9 containers”. “Bundles” now refer specifically to mail bundles that have been
10 strapped, banded or shrink-wrapped, analogous to their normal meaning in
11 operations. Former IOCS “bundles” that are not strapped are now referred to as
12 “loose mailpieces.”⁷

13 The new software now displays specific instructions for isolating and selecting
14 mailpieces or containers that conform to previous responses for activity and handling
15 questions.⁸ These isolation and selection rules are equivalent to but provide more
16 precise guidance than the “top piece rule.” For carriers, these rules are greatly
17 simplified so that one mailpiece is retrieved when available, either the top piece or

⁷ See section 7.2.2 of the F-45 Handbook, “Handling Mail, Equipment, or Forms (Q20)” (USPS-LR-L-21) for detailed descriptions of all container types, and examples.

⁸ For example, when the employee is not handling mail but works at certain automated equipment, rule I-9 is displayed on-screen:

Rule I-9: Select the first available piece from the source of supply. If no mail is available from the source of supply, select the piece closest to the employee's right hand.

1 the piece closest to the right hand.⁹ The assignment of activity codes consistent with
2 the “top piece rule” is carried out in the mainframe data processing steps.

3 There have been some changes in the data collected from mail containers. Short
4 pallet boxes now have their contents counted by mail subclass and shape, like
5 pallets. For pallets and short pallet boxes that cannot be counted, contents are
6 identified by shapes of loose mail, bundles, and non-wheeled containers. Data are
7 not captured for tall pallet boxes, including Postal Paks.

8 VI.E. TRAINING

9 Training workshops were conducted during August 2004 for all Managers of
10 Statistical Programs (MSP), Statistical Program Specialists (SPS) and lead Data
11 Collector Technicians (DCT) nationwide. Preceding the workshops, a training
12 package was provided to familiarize the participants with the new software. At the
13 workshop, training modules included presentations describing the changes, followed
14 by hands-on exercises using the new software with simulated scenarios and
15 mailpieces. Also furnished were the new F-45 Handbook and revised instructions for
16 the ongoing training of data collectors, including new lesson plans and aids to
17 learning. In small group workshops, effective training techniques were modeled
18 using the instructional materials. Districts then trained their data collectors in the
19 weeks immediately preceding the release of the new software.

⁹ For additional detail on isolation and selection rules for clerks and mail handlers, see section 7.2.1 of Handbook F-45, “Isolating and Selecting the Appropriate Mail or Container”, USPS-LR-L-21. For carriers, see section 5.5, “Script for Obtaining Additional Information Needed to Complete Reading”.

1 *VII. IMPACT OF IOCS SURVEY INSTRUMENT REDESIGN ON CITY CARRIERS AND*
2 *SUPERVISORS*

3 The survey instrument redesign had an impact on some aspects of the data collected
4 in FY2005. Separating and quantifying the impact from other causative factors, such
5 as changes in operations, mail mix and characteristics, etc., is a formidable task.

6 Notwithstanding, the Postal Service has attained some understanding of where the
7 new IOCS instrument and focused training have improved data quality. Dr. Bozzo's
8 testimony (USPS-T-46, Section IV) discusses impacts on the BY 2005 CRA. This
9 section discusses impacts on IOCS reporting for City Carriers and Supervisors.

10 Strong evidence of data quality improvement for IOCS comes from decreases in the
11 coefficients of variation (CV) that measure the precision of the estimates. In City
12 Carrier, the median CV decreased from 10.7 percent to 9.6 percent. For
13 Supervisors, the median CV decreased from 4.8 percent to 3.0 percent.

14 The redesign of the questions to focus on mailpiece characteristics contributed to
15 shifts from common, general subclasses to rarer, more specific ones. For example,
16 there were shifts from First-Class Mail Single Piece Letters to First-Class Mail Presort
17 Letters, from First-Class Mail Cards to First-Class Mail Presort Cards and from
18 Standard Regular to Standard ECR. The improved recording of mailpiece markings
19 led to better identification of, and consequent cost increases for, Free Mail. The
20 restructuring of questions regarding mailpieces with no indicium was a factor in the
21 increased costs for Within-County Periodicals (USPS-T-46, Section IV.C.1).

1 A decrease in the percentage of tallies recording city carriers as off-premises
2 contributed to increases in in-office costs for carriers. This shift was due partly to the
3 emphasis from the national training on the importance of obtaining full and complete
4 data, and partly to the increased use of Time and Attendance System (TACS) data to
5 validate respondents' responses regarding employee status.

6 For supervisors, there was a shift from "Other" and from "Higher Level Supervisors"
7 into more specific craft-related categories due to the more explicit survey questions
8 regarding employees of subordinate supervisors. The realignment of administrative
9 activities, consistent with changes for clerks and mail handlers, led to a shift from
10 "Other" to "Administrative and Support."

Table 1. CVs for Mail Processing Costs**BY2005 MODS-Based Estimated Mean Distributed Costs and CVs¹⁰
Cost Segment 3.1 Mail Processing - Clerks and Mail Handlers**

| Subclass | Cost Est. ¹¹ | Std. Deviation | 95% Lower Limit | 95% Upper Limit | CV |
|-----------------------------|-------------------------|----------------|-----------------|-----------------|--------|
| <u>First Class Mail</u> | | | | | |
| Letters and Parcels | 4,268,603 | 27,375 | 4,213,111 | 4,320,423 | 0.64% |
| Presort Letters and Parcels | 1,542,586 | 26,449 | 1,479,969 | 1,583,648 | 1.71% |
| Private Mailing Cards | 166,519 | 5,687 | 155,199 | 177,494 | 3.42% |
| Presort Cards | 60,836 | 3,676 | 53,733 | 68,142 | 6.04% |
| Priority Mail | 925,495 | 12,841 | 900,884 | 951,221 | 1.39% |
| Express Mail | 193,175 | 5,222 | 183,088 | 203,559 | 2.70% |
| Mailgrams | 1,226 | 481 | 306 | 2,190 | 39.19% |
| <u>Periodicals</u> | | | | | |
| Within County | 19,806 | 2,294 | 15,429 | 24,422 | 11.58% |
| Outside County | 869,487 | 13,521 | 843,394 | 896,396 | 1.56% |
| <u>Standard Mail</u> | | | | | |
| Enhanced Carrier Route | 472,074 | 11,447 | 450,220 | 495,093 | 2.42% |
| Regular | 2,953,882 | 26,243 | 2,908,642 | 3,011,514 | 0.89% |
| <u>Package Services</u> | | | | | |
| Parcel Post | 314,476 | 8,755 | 297,677 | 331,996 | 2.78% |
| Bound Printed Matter | 154,759 | 6,115 | 142,884 | 166,854 | 3.95% |
| Media Mail | 124,460 | 5,492 | 113,977 | 135,506 | 4.41% |
| USPS | 171,404 | 6,726 | 158,512 | 184,879 | 3.92% |
| Free for Blind/Handicapped | 23,636 | 2,332 | 18,972 | 28,113 | 9.87% |
| International | 273,686 | 5,631 | 261,790 | 283,863 | 2.06% |
| Registry | 44,451 | 2,534 | 39,584 | 49,517 | 5.70% |
| Certified | 37,792 | 2,868 | 32,129 | 43,373 | 7.59% |
| Insurance | 1,593 | 760 | 126 | 3,106 | 47.74% |
| COD | 1,046 | 447 | 192 | 1,943 | 42.70% |
| Money Orders | 0 | 0 | 0 | 0 | 0.00% |
| Stamped Envelopes | 0 | 0 | 0 | 0 | 0.00% |
| Special Handling | 6,956 | 1,525 | 4,032 | 10,009 | 21.92% |
| P.O. Box | 1,200 | 472 | 251 | 2,100 | 39.32% |
| Other Special Services | 74,728 | 3,886 | 67,145 | 82,376 | 5.20% |
| Total | 12,703,874 | | | | |

¹⁰ Costs are in (\$1,000's). Standard deviations are estimated from a bootstrapped FORTRAN approximation to mail processing cost estimates. See USPS-LR-L-9, Appendix I (Coefficients of Variation for IOCS-Based Cost Estimates) for the programs used.

¹¹ Source for cost estimates: USPS-LR-L-55.

Table 2. CVs for City Carrier In-Office Costs**BY2005 CARMM Estimated Mean Distributed Costs and CVs¹²
Cost Segment 6.1 - City Carriers In-Office Direct Labor Inputs**

| Subclass | Cost Est. | Std. Deviation | 95% Lower Limit | 95% Upper Limit | CV |
|-----------------------------|-----------|----------------|-----------------|-----------------|--------|
| <u>First Class Mail</u> | | | | | |
| Letters and Parcels | 950,717 | 18,847 | 915,925 | 989,806 | 1.98% |
| Presort Letters and Parcels | 488,635 | 9,712 | 469,263 | 507,333 | 1.99% |
| Private Mailing Cards | 66,601 | 3,089 | 60,512 | 72,621 | 4.64% |
| Presort Cards | 23,351 | 1,689 | 19,920 | 26,542 | 7.23% |
| | | | | | |
| Priority Mail | 43,158 | 2,313 | 38,681 | 47,747 | 5.36% |
| Express Mail | 9,609 | 1,160 | 7,279 | 11,826 | 12.07% |
| Mailgrams | 76 | 74 | -69 | 221 | 97.19% |
| | | | | | |
| <u>Periodicals</u> | | | | | |
| Within County | 9,682 | 1,129 | 7,480 | 11,905 | 11.66% |
| Outside County | 249,938 | 6,619 | 237,109 | 263,054 | 2.65% |
| | | | | | |
| <u>Standard Mail</u> | | | | | |
| Enhanced Carrier Route | 386,015 | 10,820 | 365,484 | 407,898 | 2.80% |
| Regular | 824,513 | 12,002 | 800,410 | 847,459 | 1.46% |
| | | | | | |
| <u>Package Services</u> | | | | | |
| Parcel Post | 14,025 | 1,342 | 11,405 | 16,665 | 9.57% |
| Bound Printed Matter | 13,319 | 1,279 | 10,852 | 15,865 | 9.60% |
| Media Mail | 8,038 | 1,003 | 6,069 | 10,001 | 12.48% |
| | | | | | |
| USPS | 51,132 | 3,101 | 45,044 | 57,200 | 6.06% |
| Free for Blind/Handicapped | 2,494 | 496 | 1,531 | 3,477 | 19.90% |
| International | 11,614 | 1,425 | 8,822 | 14,408 | 12.27% |
| | | | | | |
| Registry | 834 | 278 | 288 | 1,379 | 33.35% |
| Certified | 29,413 | 1,824 | 25,837 | 32,988 | 6.20% |
| Insurance | 2,828 | 576 | 1,687 | 3,946 | 20.38% |
| COD | 154 | 110 | -62 | 371 | 71.74% |
| Money Orders | 0 | 0 | 0 | 0 | 0.00% |
| Stamped Envelopes | 0 | 0 | 0 | 0 | 0.00% |
| Special Handling | 0 | 0 | 0 | 0 | 0.00% |
| P.O. Box | 0 | 0 | 0 | 0 | 0.00% |
| Other Special Services | 11,927 | 1,172 | 9,660 | 14,254 | 9.83% |
| | | | | | |
| Total | 3,198,073 | | | | |

¹² Costs are in (\$1,000's). Standard deviations are estimated from a bootstrapped FORTRAN approximation to CARMM cost estimates. See USPS-LR-L-9, Appendix I (Coefficients of Variation for IOCS-Based Cost Estimates) for the programs used.

Table 3. CVs for Supervisor Costs**BY2005 Estimated Mean Distributed Costs and CVs¹³
Supervisors**

| Subclass | Cost Est. | Std. Deviation | 95% Lower Limit | 95% Upper Limit | CV |
|-------------------------------------|-----------|----------------|-----------------|-----------------|--------|
| Mail Processing | 930,068 | 8,629 | 912,968 | 946,795 | 0.93% |
| Central Mail Mark-up | 44,104 | 2,441 | 39,266 | 48,834 | 5.53% |
| Window Service | 166,260 | 5,176 | 156,266 | 176,555 | 3.11% |
| Administrative and Support | 85,522 | 7,421 | 71,142 | 100,233 | 8.68% |
| City Delivery Carriers | 607,566 | 11,140 | 585,631 | 629,299 | 1.83% |
| Clerk Messengers | 0 | 0 | 0 | 0 | 0.00% |
| Rural Delivery Carriers | 58,288 | 11,472 | 27,638 | 72,609 | 19.68% |
| Vehicle Service | 38,428 | 1,725 | 35,019 | 41,782 | 4.49% |
| Employees/Labor | 0 | 0 | 0 | 0 | 0.00% |
| Higher Level Supervisors | 242,062 | 6,889 | 228,625 | 255,631 | 2.85% |
| Gen Supv.: Mail Processing | 0 | 0 | 0 | 0 | 0.00% |
| Gen Supv.: Collection/Delivery | 0 | 0 | 0 | 0 | 0.00% |
| Supervisor Training | 45,371 | 2,392 | 40,619 | 49,995 | 5.27% |
| Quality Control/Revenue Prot. | 47,659 | 2,275 | 43,165 | 52,081 | 4.77% |
| Supv. Of Mixed Clk/Mhldr Activities | 133,693 | 5,070 | 123,942 | 143,817 | 3.79% |
| Supv. Of One or More Crafts | 1,085,290 | 19,880 | 1,031,547 | 1,109,476 | 1.83% |
| Other | 622,846 | 11,034 | 599,821 | 643,075 | 1.77% |
| Total | 4,107,156 | | | | |

¹³ Costs are in (\$1,000's). Standard deviations are estimated from a bootstrapped FORTRAN approximation to supervisor cost estimates. See USPS-LR-L-9, Appendix I (Coefficients of Variation for IOCS-Based Cost Estimates) for the programs used.