Multiline Accuracy Support System

MULTILINE ACCURACY SUPPORT SYSTEM
USPS CERTIFIED
UNITED STATES POSTAL SERVICE

MLOCR
RVE/LVE
Encoding Station

Technical Guide

2005-2006
cycle

Address Management
NATIONAL CUSTOMER SUPPORT CENTER
6060 Primacy Pkwy Ste 201
Memphis, TN 38188-0001

Table of Contents

Purpose **1**

Overview **1**

Cycle Changeover Policy 2

Certification Requirements **2**

Change of Ownership: End User 3
Change of Ownership: Manufacturer 3
Annual Certification Fees 3
Fee Policy for Upgraded and Transfered Machines (After July 31st) 4
Fee Policy for Upgraded and Transfered Machines (Prior to July 31st) 4

Hardware and Software Revisions, Upgrades, and Patches **4**

The MASS Process **4**

Software Manufacturer Certification 4
Hardware Manufacturer Certification 5
RVE/LVE Manufacturer Certification 5
User Certification 5
RVE/LVE User Certification 6
Mailpiece Design Analyst 6

MASS Grading Changes **6**

Grading for Standardization 6
Penalty for Misread/Miscodes 6
Penalty for Default Matches in Keying Environments 7
Unreadable Barcode Allowance 7
Delivery Point Error Allowance 7
Automated Barcode Evaluator (ABE) System 7
Fatal Add-On Error 7

MASS Certification Processes **8**

Software Vendor Certification 8
Manufacturer Certification 8
User Certification 8

Test Deck Specifications **9**

Test Deck Processing Procedures **10**

MLOCR Setup 10
MLOCR Test Deck Processing 11
Encoding Station Setup 11
Encoding Station Test Deck Processing 12

Shipping Instructions **12**

Evaluation and Grading 12

Ordering a MASS Test Deck 14

MASS Certification Order Form 15

RVE/LVE Certification Order Form 17

Appendix 1: PS Form 3553, CASS Summary Report 21

Appendix 2: Test Mailpiece Example 25

Appendix 3: Translation of Error Codes and Special Flags 29

Appendix 4: Sample MASS Certificate 33

Appendix 5: Sample CASS Customer No Match Report 37

Appendix 6: CASS Customer Statistics 43

Appendix 7: Electronic Data File Description 47

Purpose

CASS™ certification is a process designed in cooperation with the mailing industry to improve the accuracy of carrier route, 5-digit ZIP, and ZIP + 4® codes as well as the delivery point barcodes that appear on mailpieces.

CASS provides hardware and software manufacturers, service bureaus, and commercial mailers a means of testing and, upon achieving required accuracy scores, certifying the quality of their address-matching software. The Certification Department, located at the National Customer Support Center (NCSC) evaluates and grades CASS tests and returns the results to the customer, providing useful diagnostics for correcting software deficiencies. However, CASS does not measure the accuracy of ZIP + 4, delivery point, 5-digit, or carrier route codes in a mailer's address file.

MASS™ certification is a process similar to CASS but is designed for certification for Multiline Optical Character Readers (MLOCRs), Remote Video Encoding (RVE), Local Video Encoding (LVE), and encoding stations.

Overview

MASS/RVE is an extension of CASS. The MASS certification cycle is designed to evaluate the ability of MLOCRs and encoding stations to process address information and apply an accurate delivery point barcode (DPBC) to a mailpiece. However, the RVE is designed to evaluate the ability of the entire remote video encoding operation to process address information and apply an accurate DPBC to a mailpiece. The MASS/RVE certification cycle is comprised of the following phases:

1. Software manufacturer certification
2. Hardware manufacturer certification
3. RVE manufacturer certification
4. User certification

All MASS/RVE tests are similar to CASS Stage II tests in that the performance of address-matching software and barcode application hardware is evaluated after it has processed a test file. If the required accuracy is achieved, MASS or RVE certification is issued.

MASS/RVE certification is an annual requirement and remains valid from the certification date until the end of any current period (i.e., from August 1 of one year through July 31 of the next). Customers must reapply for certification and meet the accuracy requirements each year to remain certified and avoid interrupted service to their customers. MASS certification is mandatory for mailers using MLOCRs/RVE or encoding stations to print DPBCs on mailpieces submitted for mailing at discount automation rates (see *Domestic Mail Manual* (DMM), Module A, Section 950).

MERLIN (Mailing Evaluation, Readability and Look-Up Instrument) is now verifying nine-digit ZIP Code information at the points of acceptance and has established zero tolerance for ZIP + 4 codes of '0000' and '9999'. To maintain

consistency, the return of ‘0000’ in the ZIP + 4 add-on, or the return of an **invalid** ‘9999’ in the ZIP+4 add-on, will continue to be a fatal add-on error for CASS/ MASS certification and will require retesting.

Cycle Changeover Policy

New MASS requirements are introduced each year, and the changeover from one cycle to the next typically occurs on April 1. After the changeover, the MASS Department cannot test customer compliance with the previous cycle, which creates difficulties for customers completing MASS testing under the previous cycle’s requirements after April 1. In this case, a courtesy MASS certification is granted to help these customers maintain normal operations between April 1st and the time at which they can comply with the new cycle requirements. However, these customers must be recertified by July 31 to continue receiving automation discounts.

Certification Requirements

The Certification Department understands that customers who purchase a new system often have legitimate reasons for wanting to operate it immediately: waiting for MASS™ certification is often impractical and costly. To address this issue, a 45-day courtesy certification period is provided for systems that are newly installed, moved, relocated, upgraded or reassembled. During this 45-day window, the customer can use the system to produce and submit mail and qualify for automation rates after receiving clearance from the Certification Department. The customer must receive MASS certification during this 45-day period; if the customer fails to MASS certify within this 45-day period, the system becomes ineligible to submit mail at automation rates after the 45th day.

Systems used for automation rates must be certified annually. In addtion, recertification outside the normal annual testing periods may be required if changes are made to the following:

- The address-matching software utilized by the MLOCR
- The operating system (e.g., migrating from DOS to Windows NT)
- The camera configuration (e.g., from ATR to RAF), including switching from a single to a dual camera configuration
- Speed
- Model

Demonstration machines will require MASS certification and will be eligible for the 45-day courtesy. The MASS Department must be notified by customer and manufacturer within ten days of the final disposition of the machine.

Likewise, recertification may be required when a MASS certified system is moved, relocated, upgraded, or reassembled. The customer must notify the Certification Department within seven days of the change to be eligible for the 45-day courtesy. The customer must also complete and submit the MASS order form, with the installation date to the Certification Department.

Moving a system involves **any** movement from one position/place within the same area to another, while relocating a system involves movement from one floor or builinding to another. An upgrade is considered to be **any** change in the

host computer's operating system, cameras, or software used to operate the system, unless a waiver has been granted at the manufacturer level.

Change of Ownership: End User

If an MLOCR or an encoding station is sold or ownership is transferred, the new owner must notify the Certification Department in writing or email (cassman.ncnc@usps.gov) so that the customer master files can be maintained. The notification must include the following:

- Equipment model number, serial number and MASS ID
- Previous owner's name and address
- New owner's name, address, phone number, and FAX number

If the machine is not physically relocated, a new MASS certificate may be issued. If the machine is physically relocated, the customer must follow the machine relocation guidelines. (See Certification Requirements above)

Change of Ownership: Manufacturer

All manufacturers who enter into a purchase agreement with a customer to enhance/upgrade a MLOCR machine (hybrid) currently being supported by another manufacturer must provide a Letter of Agreement signed by both parties to the MASS Department.

It is understood and agreed that the MASS Department will not process any MASS requests for certification of machines containing a hybrid system unless the Letter of Agreement has been signed by both parties and is on file in the MASS Certification Department.

Annual Certification Fees

Fee schedule listed below applies to machines seeking annual recertification for Cycle J 2005-2006. For fees regarding new, upgraded, or transfered machines, see page 3 of this technical guide.

Tentative fee schedule until further notice:

Fee-Based Certification	DEC–JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
CASS	$200	$200	$200	$500	$500	$500	$500	$750
MASS Manufacturers (3500)		$300	$300	$500	$1,000	$1,000	$1,500	$2,000
MASS End-Users (3500)			$0	$0	$0	$400	$500	$750
MASS Manufactures (350)		$50	$50	$100	$250	$250	$350	$500
MASS End-Users (350)			$0	$0	$0	$100	$150	$300

For CASS certification, customers will be billed based on the number of separate software configurations certified, not on the number of Stage II files ordered. In contrast, MASS customers will be billed for each test deck ordered regardless of the number of decks needed to achieve certification. Billing procedures are coordinated with our Accounts Receivable Department. Essentially customers will be billed as certification is awarded.

This sliding-scale fee structure offers a financial incentive for CASS and MASS customers to obtain certification at the earliest opportunity. We understand that end users are at the mercy of their software/hardware vendors; however, with the

new fee-based structure in place, we remain confident that manufacturers are committed to attempt manufacturer certification earlier than later.

Fee Policy for New, Upgraded or Transferred Machines *(After July 31st)*

New systems initially deployed from a MASS™ manufacturer to an end-user at any time during a current MASS cycle will be charged a flat fee of $300 for Multiline Optical Character Readers (MLOCRs) and $100 for Direct View Encoding Desk (DVEDs) if order is received after July 31st. These fees also apply to any barcoding equipment transferred, upgraded or sold to one company from another of which association between the companies does not exist. A new system is defined as barcoding equipment that is not in use or is not operational during the time for which certification is requested or during any previous MASS cycle.

Fee Policy for New, Upgraded or Transferred Machines *(Prior to July 31st)*

All systems are required to be MASS certified by August 1 of each calender year. Systems may be eligible for no-fee certification when the applicant promptly notifies the MASS Department that a new, transferred or upgraded system has been received, installed and is operational under the 45 day grace period prior to or during the month of May. After the month of May, new, transferred or upgraded systems will be charged a certification fee of half of the regular scheduled fee.

Hardware and Software Revisions, Upgrades, and Patches

If an MLOCR or encoding station software manufacturer issues a revision, upgrade, or patch to existing address-matching software or hardware, the manufacturer must submit written notification to the Certification Department before distributing the software or hardware. The written notification must include a brief description of the changes being made and the expected results of those changes. The NCSC will evaluate the documentation and determine an appropriate course of action, which may include recertification of all users, a sample of the user base, hardware manufacturers only, or software manufacturers only. It is possible that no action will be taken following notification.

The MASS Process

The first step in the MASS™ certification process is notifying the Certification Department of the Manufacturer's interest to become MASS certified by providing a list or matrix of the configurations under which their equipment is running and the model numbers. The Manufacturer must also provide the name of the software, version number, serial number, and manufacturer MASS identifier code.

Software Manufacturer Certification

CASS™ certification of the address-matching software is the second step in MASS certificaton.

1. Before a software manufacturer distributes new or revised address-matching software to customers, the manufacturer must process a CASS Stage II file.

2. The NCSC evaluates the Stage II file and returns the results to the software manufacturer. Once the software displays the required level of accuracy, the NCSC issues the software manufacturer a CASS certificate.
3. The software manufacturer may distribute software to MLOCR/RVE and encoding station manufacturers.

Hardware Manufacturer Certification

The third step in the MASS certification cycle is hardware manufacturer certification, which takes place after the manufacturer receives and installs CASS-Certified™ address-matching software. During this phase, a manufacturer's hardware is tested to determine if it can 1) correctly read the address block on a test mailpiece, 2) process the address information through address-matching software, and 3) spray a machine-readable, accurate DPBC on the test mailpiece using software that has already been tested in a stand-alone environment.

1. The hardware manufacturer orders a MASS test deck from the NCSC using the MASS Order Form (see page 15).
2. The manufacturer processes the test deck on a representative model of MLOCR or encoding station and returns it to the NCSC for evaluation.
3. If the manufacturer passes certification testing, the NCSC issues a MASS certificate and allows the manufacturer to distribute software to users.

Remote Video Encoding/Local Video Encoding Manufacturer Certification

The fourth step in the MASS certification cycle is RVE manufacturer certification. RVE system certification is a customized process. The equipment used in the process determines the number of test decks needed for certification and how they are handled. If an MLOCR is used to capture mailpiece images or to apply DPBCs, the MLOCR must be MASS certified before RVE/LVE system certification can be attempted.

<u>RVE System Certification With MLOCR</u>

Deck 1 One test deck is processed with all systems (including MLOCR) turned on.

Deck 2 One test deck is processed entirely to remote coding via Remote Character Recognition (RCR) or RVE/LVE. MLOCR coding must be deactivated during this part.

The RVE/LVE Certification Order Form is found on page 17.

***Note**: Successful scores are required on all test decks to attain RVE system Certification.*

User Certification

The final step in the MASS™ certification cycle is user certification.

1. Upon receipt of updated address-matching software, the user must order a separate test deck for each MLOCR or encoding station via the MASS Order Form.

2. The user processes the test deck and returns it to the NCSC for evaluation.
3. If the user passes certification testing, the NCSC issues a MASS certificate. Upon receipt of the certification, the user may begin processing mail with the new software to obtain automation discounts.

RVE/LVE User Certification

RVE system certification is a customized process. The equipment used in the process determines the number of test decks needed for certification and how they are handled. If an MLOCR is used to capture mailpiece images or to apply DPBCs, the MLOCR must be MASS™ certified before RVE/LVE system certification can be attempted.

RVE System Certification With MLOCR

Deck 1 One test deck is processed with all systems (including MLOCR) turned on.

Deck 2 One test deck is processed entirely to remote coding via Remote Character Recognition (RCR) or RVE/LVE. MLOCR coding must be deactivated during this part.

The RVE/LVE Certification Order Form is found on page 17.

Successful scores are required on all test decks to attain RVE system certification. If the user passes certification testing, the NCSC issues a RVE certificate. Upon receipt of the certification, the user may begin processing mail with the new software to obtain automation discounts.

Mailpiece Design Analyst

The Mailpiece Design Analyst (MDA) is an official representative observing the process of certifying MASS test decks. The MDA's role is essential as a neutral observer, not as an active participant. The MDA should not recommend any actions which would affect the results of the customer's test without our approval.

MASS Grading Changes

Grading for Standardization

The CASS test for hardware manufacturers will continue to grade for address standardization to verify that software does not lose or modify critical address elements. This issue is especially critical in *FASTforward*® equipped MLOCRs.

Penalty for Misread/ Miscodes

In an attempt to reduce the number of miscodes caused by variances in optical character recognition systems, the penalty for misreads/miscodes has been increased to 1.5 percent, while at the same time, the allowance for rejects has been increased to 7.5 percent. A misread/miscode is defined as an inaccurate barcode applied to the test piece caused by an erroneous interpretation of the primary address number (i.e. 100 Main St is incorrectly read as 10 Main St). Accurate character recognition is becoming a critical factor in successfully obtaining MASS certification.

As the percentage for certification is increased in future cycles, character recognition systems are challenged to improve their capabilities to accurately discern characters, and to not spray barcodes when clearly ambiguous conditions are present. By increasing the allowance for reject pieces in the MASS test, MASS is relaxing the number of pieces required to be coded to facilitate this approach.

Penalty for Default Matches in Keying Environments

MASS™ will assess penalties for default matches in keying environments only. Depth of coding is an issue when an operator fails to key the entire address, particularly when the secondary address information is excluded. The penalty will be doubled for each depth of coding error.

Unreadable Barcode Allowance

An unreadable barcode is any barcode on a MASS mailpiece that can be detected by reader equipment but cannot be interpreted correctly. Unreadable barcodes were allowed during previous CASS™ cycles. If less than 5 percent of the total pieces returned fell into this category, the unreadable pieces were set aside and not included in the grading process.

For the 2005-2006 cycle, the 2.5 percent allowance will remain in effect (i.e., if less than 2.5 percent of the barcodes are unreadable, they will be omitted from the grading process). If more than 2.5 percent are unreadable, all pieces containing unreadable barcodes will be checked on a production-worthy automated barcode evaluator (ABE) system. (See “Automated Barcode Evaluator (ABE) System” on page 7.)

Delivery Point Error Allowance

In past CASS cycles, MASS test mailpieces were allowed a delivery point error rate of 1 percent without penalty. A delivery point error was assessed only if the ZIP Code and add-on were correct but the delivery point values were incorrect. The delivery point error allowance is currently 0.5 percent of the total number of mailpieces available for grading.

Automated Barcode Evaluator (ABE) System

The automated barcode evaluator (ABE) system is used to grade MASS™ test decks that exceed the 2.5 percent unreadable barcode allowance. When more than 2.5 percent of the returned test deck’s mailpieces contain an unreadable barcode, all mailpieces with an unreadable barcode will be checked on the ABE system. If the system reports that a barcode is unreadable, the mailpiece will be graded as an automatic failure. If the system reports that the barcode is readable, the mailpiece will be manually graded and scored.

To assist MASS users in evaluating ABE performance, the Certification Department will offer a free, 100 piece test deck for system evaluation. The ABE test deck can be graded on a production-worthy ABE system by the Certification Department. The free ABE evaluation will not affect existing MASS certification status.

Fatal Add-On Error

To maintain consistency, the return of ‘0000’ in the ZIP + 4 add-on, or the return of an **invalid** ‘9999’ in the ZIP + 4 add-on, will continue to be a fatal add-on error for CASS/MASS certification and will require retesting.

MASS Certification Processes

The NCSC sends a letter to all MASS customers announcing the beginning of the manufacturer and end user certification period. Certified letters are sent to customers who were MASS certified during the previous cycle, to each customer's postal account representative, and to all postal managers of customer service support at the area and district levels. The MASS Technical Guide is posted on the Rapid Information Bulletin Board System (RIBBS) at http://ribbs.usps.gov/files/cass/MASSTECH.pdf.

Software Vendor Certification

The software manufacturer certification process is documented in the CASS™ Technical Guide. When a new certification cycle begins, the NCSC offers a CASS Stage I test for self-evaluation and software development. Following software development, manufacturers can order a CASS Stage II file by completing the CASS Order Form located in the CASS Technical guide. The manufacturer processes the Stage II test file and returns it to the NCSC, where it is evaluated. Results are returned to the manufacturer. If the product meets current CASS requirements, the NCSC issues the manufacturer a CASS certificate. Upon receipt of the certificate, the manufacturer may begin distributing upgraded, certified software to customers.

Manufacturer Certification

MLOCR, RVE, LVE, and encoding station manufacturers are first to receive updated software and must achieve MASS™ certification before distributing software to end users. Manufacturers must follow the user certification process below and the MASS test deck ordering steps (see page 13).

User Certification

Upon receipt of updated software, all encoding stations, RVE, LVE, and MLOCR users must submit a completed MASS Certification Order Form or RVE/LVE Certification Order Form to the Certification Department (see pages 15 - 17).

The Certification Department verifies the information on the order form, paying special attention to the software version, which must be the most current, CASS-Certified™ version. Once the information is verified and entered into the NCSC customer master file, a test deck is printed. Each test deck is assigned a unique customer tracking number specific to the equipment serial number. (See "Test Deck Specifications" on page 9.) Production of a MASS test deck normally requires three working days; however, during peak fulfillment periods, it may require as many as 10 working days. The NCSC recommends that customers order tests as soon as they receive updated software from their manufacturer. Orders are processed in the order in which they are received.

All test decks are trayed and placed in corrugated cardboard boxes. Each box is tagged with a bright red label that reads "TEST DECK—DO NOT OPEN." The customer tracking number is attached to a document on the top of each tray and printed on the Express Mail® label on each box. Also included on at least one of the trays is a computer printout that identifies the company name, machine manufacturer, model number, and serial number. The customer should verify this information before running the test deck.

***Note**: Every test deck MUST be opened and processed in the presence of a postal representative: Do not open the boxes until the postal representative is present.*

Upon receipt of the test deck, end users must notify their postal representative of their intention to attempt MASS certification and schedule a specific day and time with their postal representative to process the test. After processing, users must return test decks to the Certification Department — preferably by Express Mail — for evaluation; however, since the user is responsible for return shipping costs, Priority Mail® service is also acceptable. Test decks returned by other commercial carriers will be rejected.

The NCSC receives, evaluates, and grades processed test decks and usually makes results available to the customer within two working days; however, during peak periods, this process may require ten working days.

***Note**: All tests are processed in the order in which they are received.*

The NCSC sends a certificate to all users who meet current certification requirements. Users who fail to certify will receive a copy of their error report and a second test deck for all machines that failed the first certification attempt.

Test Deck Specifications

MASS™ test decks are designed to exercise MLOCR/RVE/LVE and encoding station address-matching software look-up capabilities emulating the CASS™ Stage files. The input addresses represent the same type and approximate mix of questions in the CASS Stage files. Although the actual addresses on the test mailpiece may differ from one test deck to another, the type and number of records are similar.

All MLOCR test decks contain approximately 3,500 test mailpieces, while all encoding station tests contain approximately 350. The MLOCR test decks are packaged in six mail trays and shipped with three trays in each box while the encoding station test deck is shipped in one box.

Both test decks used to complete RVE system certification are printed in two fonts; half of each deck is printed in a Gothic text and half in a cursive script font designed to be rejected from MLOCR processing.

Each test mailpiece consists of one piece of 8 1/2 x 11 inch white, 20 pound paper folded and inserted into a 24-pound, white-wove, 5 3/4 x 9 inches window envelope. The envelope has two windows – one upper and one lower. The upper window measures 1 1/4 x 4 inches and is located 3/8 inch from the left edge and 3 11/16 inches from the bottom edge. The bottom window measures 1 3/8 x 4 1/2 inches and is located 2 1/16 inches from the left edge and 11/16 inch from the bottom edge. (see page 25 for an example of a test mailpiece).

Test mailpieces for Flat mail consists of one piece of 8 1/2 X 11 inch wide, 20 pound paper inserted into a 24-pound, white-wove 9 X 12 inch window envelope. The envelope has two windows; one upper and one lower. The upper window measures 1 1/4 X 4 1/4 inches and is located 1/2 inch from the left edge and 6 7/8 inches from the bottom edge. The bottom window measures 2.0 X 6.0 inches and is located 3.0 inches from the left side and 3.0 inches from the bottom.

Data elements internal to the Postal Service are printed on the insert and appear in the upper window. These elements identify the specific deck to which any test mailpiece belongs, the customer tracking number, and the exact question key number appearing on that mailpiece. The test address appears in the lower window.

RVE test decks are designed to exercise all portions of the RVE systems address-matching software look-up capabilities by emulating the CASS Stage II files. The addresses printed on the test mailpieces represent the same types of addressing anomalies found in the CASS Stage II test. Although the actual address represented on the test mailpiece may differ from one test deck to another, the type and number of anomalies are similar.

Test Deck Processing Procedures

All MASS™ certification tests must be conducted in a “normal operations” state, meaning that the system must be configured as it would be when it is used to produce mail for automation discounts.

For systems that are *FASTforward*® equipped, the *FASTforward* interface must be operational because the MASS test deck may include addresses that are forwardable. If processing does not forward any of the forwardable pieces, the graders will assume that the *FASTforward* system was not operational, and the test will be invalidated. If at least one forwardable mailpiece appears to have been produced by the *FASTforward* interface, the test deck will be considered valid and submitted for grading. MASS grading will not evaluate the accuracy of the *FASTforward* answers, only the fact that the interface was functioning. Any answer on forwardable mailpieces that are not assigned a new address will be graded based on the accuracy of the response to the input question.

***Note**: Where a MASS-certified system would normally spray a 5-digit ZIP Code on a production mailpiece, it must also spray a 5-digit ZIP Code on the MASS test mailpiece.*

MLOCR Setup

The actual mail processing for a MASS test deck varies between manufacturers of MLOCR equipment and model types; therefore, these guidelines are general. To achieve optimum results from a MASS certification attempt, consult the equipment manufacturer regarding all processing-related issues.

First, clean the equipment according to the manufacturer’s instructions. Pay particular attention to the optics, and run the manufacturer’s diagnostic routine to optimize the character-recognition software. Next, run several pieces with the barcode turned off to verify the setup and ensure that the address block is reading properly.

Verify that the barcode is as clean as possible. The NCSC processes each test deck on a barcode reader, so the quality of the barcode returned on the test mailpieces is important. If more than 2.5 percent of the mailpieces generated contain unreadable barcodes, these mailpieces will be rejected, which will decrease the chance of certification.

Make further machine preparations, such as sort schemes, pick-off settings, and vacuum system and belt speed adjustments in accordance with the manufacturer's instructions.

***Note**: MLOCR/RVE/LVE certifications must be attempted by the end user. No one besides the end users or his/her employee(s) may complete an MLOCR/RVE/LVE system test. If it is determined that unauthorzed individuals completed the MLOCR/RVE/LVE test, the test deck will be disqualified.*

MLOCR Test Deck Processing

Verify that the test deck corresponds to the machine manufacturer's model and serial number. This information is listed in the computer-generated documents provided with the test deck.

Process each test deck in a manner that ensures every test mailpiece that should receive a DPBC is coded. Be aware that by design not all test mailpieces can be coded, and some input addresses should not be coded. After processing the entire test deck, all rejects may be reprocessed. When bad barcodes are sprayed, up to 100 pieces can be over labeled. After completely processing the test deck, create a computer-generated facsimile of the PS Form 3553, CASS™ Summary Report, and return it with the test deck to the NCSC for evaluation. All appropriate fields must be completed in PS Form 3553.

The MASS Department will compare and analyze the hardcopy PS Form 3553 against the answer field information returned in the test deck. Computation of PS Form 3553 values must be based on the answers returned during the matching process—never from input fields. In normal operations, if a user chooses to overwrite input fields with output information, production of the PS Form 3553 must be able to discern between processed and unprocessed records. If any errors are identified in the comparison, the grading process will continue; however, certification cannot be issued until a valid PS Form 3553 is submitted to the MASS Department.

***Note**: The Postal Service™ representative observing the test must verify that PS Form 3553 is signed and dated by the customer and should attach one of the rejected test mailpieces to the form. PS Form 3553 must comply with the requirements outlined in the most current* Domestic Mail Manual *(DMM) and must represent the test deck processed.*

Encoding Station Setup

The processing of mail or a MASS™ test deck varies between manufacturers of encoding station equipment and model types. To achieve optimum results, consult the equipment manufacturer regarding all processing-related issues.

Verify that the encoding station is in proper operating order before processing a MASS test. The barcode produced must be as clean as possible because the NCSC processes each test deck on a barcode reader—its quality is vital. If more than 2.5 percent of the mailpieces generated contain unreadable barcodes, all mailpieces with unreadable barcodes will be rejected, decreasing the possibility of certification. After processing the entire test deck, all rejects may be reprocessed. When bad barcodes are sprayed, up to 50 pieces can be over labeled.

***Note**: Encoding station certification must be attempted by the end user: no one besides the end users or his/her employee(s) may complete an encoding*

system test. If it is determined that unauthorized individuals completed the encoding system test, the test deck will be disqualified.

Encoding Station Test Deck Processing

Before beginning the MASS test, the encoding station operator should be properly instructed by the equipment manufacturer or the equipment owner. For any operational or processing issues, consult the equipment manufacturer.

Process each test deck in a manner that ensures every test mailpiece that should receive a DPBC is coded. Be aware that by design not all test mailpieces can be coded, and some input addresses should not be coded. After completely processing the test deck, create a computer-generated facsimile of PS Form 3553 and return it along with the test deck to the NCSC for evaluation. **All appropriate fields must be completed in PS Form 3553.**

***Note**: The Postal Service™ representative observing the test must verify that PS Form 3553 is signed and dated by the customer and should attach one of the rejected test mailpieces to the form. PS Form 3553 must comply with the requirements outlined in the most current* Domestic Mail Manual *(DMM) and must represent the test deck processed.*

You must return the entire test deck, including all rejected, damaged, and non-coded mailpieces.

Shipping Instructions

The National Customer Support Center (NCSC) in Memphis, Tennessee, sends all test decks to customer sites by Express Mail® service. Return shipment of a completed test deck is the customer's responsibility. The NCSC prefers shipment via Express Mail due to its timeliness and traceability; however, since return shipment is the responsibility of the customer, Priority Mail® service is acceptable.

Please return completed test decks to the following address:

MULTILINE ACCURACY SUPPORT SYSTEM
NATIONAL CUSTOMER SUPPORT CENTER
UNITED STATES POSTAL SERVICE
6060 PRIMACY PKWY STE 201
MEMPHIS TN 38188-0001

Note: Test decks returned by other commercial carriers will be rejected.

Evaluation and Grading

Each test deck received at the NCSC is scanned by a barcode reader. A customer grading file is created and uploaded to the mainframe, where it is processed against the current MASS™ grading scheme outlined later in this section. (See "Appendix 3: Translation of Errors Codes and Special Flags" on page 27.). Then, the NCSC grades the test, generates a grading report, and mails a copy of the report to the customer. A certificate is mailed when the customer achieves certification. (See "Appendix 4: Sample MASS Certificate" on page 31.)

Grading is based on the barcode sprayed by the MLOCR onto the test mailpiece and is deemed either correct or incorrect. If no answer is the correct answer, then the correct answer is blank (or spaces). In situations where the input causes a multiple-response condition and all candidate records share the same 5-digit ZIP Code, the vendor may elect to apply a 5-digit barcode or leave spaces on the test piece.

There are several types of records to consider when grading:

1. Must answer (i.e., special flag A5). These records must be barcoded correctly. If the record is barcoded incorrectly or left blank, it is counted towards the total number of incorrectly barcoded records.
2. Optional answer (i.e., special flag A9, where no answer is bypassed). It is not mandatory to code these records. If the records are barcoded correctly, they are counted towards the total number of correctly barcoded records. If they are not barcoded correctly (left blank), they are not counted towards the total number of correctly or incorrectly barcoded records. Optional answer categories are identified by the single asterisk on the “Customer No Match Translation of Error Codes $ Special Flags” in Appendix 3.
3. Must not answer (i.e., special flag KO, where no answer is the only correct answer unless using DPV as tiebreaker). If these records are barcoded (not left blank), they are counted toward the number of incorrectly barcoded records.Must Return input records are identified by the double asterisk on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3. DPV enabled software may elect to code where input address ambiquities (i.e., missing suffixes, misspelled street name, etc.) and data anomolies exist wthin the ZIP + 4 file.
4. No grading for standardization records may or may not contain an input ZIP Code, may have a misspelled city name, and may contain a nonmailing name. The address also may contain a numeric street name, misspelled street name, or street names that could possibly be pre- or post-directional. Address-matching software must be able to correctly match the input address with the appropriate carrier rout, 5-digit or ZIP + 4 record and return a properly standardized answer along with the ZIP Code, +4 add-on code, delivery point code, and the check digit. CASS accepts and grades the answer as correct in the standard abbreviated format, completely spelled out, exactly as presented in the USPS AIS product or the input record for non-matched records. These categories are identified by the three asterisks on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.
5. Normalization required for subcategory MA. Some PO Box, Rural Route and Highway Contract input addresses often appear on a mailing list with the following words and must be converted as shown: This category is identified by the four asterisks on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.

INPUT	OUTPUT
Drawer 10	PO Box 10
Drawer A	PO Box A
Caller 10	PO Box 10

INPUT	OUTPUT
Lockbox 10	PO Box 10
Firm Caller A	PO Box A
Bin A	PO Box A
Rural Route 1	RR 1
FDR Route 1	RR 1
Star Route 1	HC 1
Highway Contract 1	HC 1

	Answer = NCSC Answer	Answer = Other Answer
Must Answer	Add 1 to correct count	Add 1 to incorrect count
Optional Answer	Add 1 to correct count	Add 1 to incorrect count
Must Not Answer	Add 1 to correct count	Add 1 to incorrect count

$$\frac{\text{Correct}}{\text{Correct + Incorrect}} = \%$$

***Note**: The score required to achieve certification for MLOCRs, RVE, LVE, and encoding stations is 98.5 percent or higher.*

Ordering a MASS Test Deck

To ensure the customer understands the requirements of the MASS program, the Letter of Acknowledgement on page 19 must be signed and returned to the MASS Department. the letter can be faxed or mailed to the MASS Department prior to or along with the MASS Order Form. The MASS Department will not process a MASS Order Form request unless the Letter of Acknowledgement is on file.

To order a MASS certification test deck, complete the MASS Certification Order Form on page 15. The RVE/LVE Certification Order Form is on page 17.

Customers are responsible for ordering test decks. One test deck is required for each machine to be certified. The NCSC automatically sends a second test deck for any machine that fails to certify.

UNITED STATES POSTAL SERVICE®

MASS™ Order Form

Customer Information *(Please print)*

Company Official Contact Name

Company Name

Street Address, P.O. Box, Rural/Hwy Contract, or Route Number | Apt/Suite

City | State | ZIP + 4®

Telephone Number *(include area code)* | Fax Number *(include area code)*

Salesperson | Telephone Number (include area code) | Email Address

USPS Account Representative Information

Attention

Company Name

Street Address, P.O. Box, Rural/Hwy Contract, or Route Number | Apt/Suite

City | State | ZIP + 4®

Telephone Number *(include area code)* | Fax Number *(include area code)*

Equipment Information

I request that my certification be maintained in US Postal Service documents and records as:

❑ Service Bureau ❑ Mailer ❑ Manufacturer _____

❑ I do not wish to be listed in USPS pubs.

❑ All MLOCR machines connected to a *FASTforward*® black box MUST process the MASS test deck with *FASTforward* mode turned on. Check here if a *FASTforward* black box is installed and this machine is operating with *FASTforward* turned on.

User Acknowledgement Statement

I hereby certify that all information on this application is accurate and correct. I also certify that the responses provided on the MASS certification test deck will be obtained using the same configuration as used in the processing of customer/client address files and that any modification to the products used to process this test will require retesting and recertification prior to use or release. The MASS test deck will be processed in-house with company-owned or leased software/hardware. I further certify that this address-matching product contains technology that disables access to outdated USPS® (United States Postal Service) data as stated in the *Domestic Mail Manual* (DMM) A950, section 3.0.

CASS™/MASS™ certification scores are confidential information and the applicant agrees not to disclose scores achieved on their passing test for the purpose of marketing their software or hardware product.

Company Official Contact Signature | Date

Return Order Form To

MULTILINE ACCURACY SUPPORT SYSTEM
NATIONAL CUSTOMER SUPPORT CENTER
UNITED STATES POSTAL SERVICE
6060 PRIMACY PKWY STE 201
MEMPHIS TN 38188-0001

Fax: 901-681-4440

NCSC Use Only

Customer Number

Date

PRDT Code

Multiline Optical Character Reader (MLOCR) Enquipment Information

If the matching software/hardware has optional parameters, you **MUST** return a list of the parameters used to process the MASS Stage II file with this form. You **MUST** return a hardcopy of PS Form 3553, *CASS Summary Report*, with the MASS test deck.

Note: This page may be copied for multiple MLOCR systems. A completed form must be submitted for each MLOCR system that will utilize *FASTforward*® processing.

Type of Certification

Indicate the type of certification requested.

☐ New Certification ☐ Moved/Relocated ☐ Upgraded ☐ Reassembled ☐ Demonstration

Installation Date

MLOCR

Software Product	Version Number	Configuration	MASS ID
Equipment Manufacturer	Model Number	Serial Number	

Encoding Stations

Software Product	Version Number	Configuration	MASS ID
Equipment Manufacturer	Model Number	Serial Number*	

** List all serial numbers for networked systems and indicate which one is the server.*

Change of Ownership

Equipment Model Number	Serial Number	MASS ID

Previous Owner's Name

Previous Owner's Address

New Owner's Name

New Owner's Address

New Owner's Phone Number	New Owner's Fax Number

If the machine is not physically relocated, a new MASS certificate may be issued. If the machine is physically relocated, the customer must follow the machine relocation guidelines.

Remote/Local Video Encoding Certification Order Form

Customer Information *(Please print)*

Company Official Contact Name

Company Name

Street Address, P.O. Box, Rural/Hwy Contract, or Route Number | Apt/Suite

City | State | ZIP + 4®

Telephone Number *(Include area code)* | Fax Number *(Include area code)*

USPS Account Representative Information

Attention

Street Address, P.O. Box, Rural/Hwy Contract, or Route Number | Apt/Suite

City | State | ZIP + 4®

Telephone Number *(Include area code)* | Fax Number *(Include area code)*

Remote/Local Video encoding Site Information

Company Official Name

Company Name

Street Address, P.O. Box, Rural/Hwy Contract, or Route Number | Apt/Suite

City | State | ZIP + 4®

Telephone Number *(Include area code)* | Fax Number *(Include area code)*

Software | Version | Configuration

Equipment Information

Image Capturing Equipment Manufacturer	Model Number	Serial Number	MASS ID
Barcoding Equipment Manufacturer	Model Number	Serial Number	MASS ID

MASS Certification Date *(If applicable)*

I request that my certification be maintained in US Postal Service documents and records as:

❑ Service Bureau ❑ Mailer ❑ Manufacturer_____ ❑ I do not wish to be listed in USPS pubs.

User Acknowledgement Statement

I hereby certify that all information on this application is accurate and correct. I also certify that the responses provided on the RVE certification test deck will be obtained using the same configuration as used in the processing of customer/client address files and that any modification to the products used to process this test will require retesting and recertification prior to use or release. I have read the Remote/Local Video Encoding Certification Guide and will process 1 or 2 *(circle one)* test deck(s) to meet system certification requirements.

Company Official Contact Signature | Date

Return Order Form To

CERTIFICATION DEPARTMENT
NATIONAL CUSTOMER SUPPORT CENTER
UNITED STATES POSTAL SERVICE
6060 PRIMACY PKWY STE 201
MEMPHIS TN 38188-0001
Fax: 901-681-4440

NCSC Use Only

Customer Number

Date

PRDT Code

ADDRESS MANAGEMENT
NATIONAL CUSTOMER SUPPORT CENTER

UNITED STATES
POSTAL SERVICE®

Dear MASS Customers:

The MASS™ Department is committed to sustaining a high quality certification program. The United States Postal Service® certified your barcode machine last year to participate in the MASS program to process automation mail.

In order to continue with the MASS program for 2005-2006, your organization must submit your MASS Order Form for Cycle I, together with a signed copy of this letter of acknowledgment, no later than July 31, 2005 to the MASS Certification Department. You may submit your order form and acknowledgment letter by fax to 901-681-4440 or mail to the address below:

CASS/MASS
NATIONAL CUSTOMER SUPPORT CENTER
UNITED STATES POSTAL SERVICE
6060 PRIMACY PKWY STE 201
MEMPHIS TN 38188-0001

The MASS Technical Guide is available on the USPS website at http://ribbs.usps.gov/files/cass/masstech.pdf. All participants in the MASS program must comply with the MASS Technical Guide.

As we begin the 2005-2006 Cycle I certification, the MASS Department has implemented this letter of acknowledgment highlighting:

Purpose & Overview
Certification Requirements
Change of Ownership
45-Day Courtesy
New/Upgrade/Relocation Machines
Fee Policy
Manufacturer Hardware/Software Upgrades
Ordering MASS Test Decks
Shipping MASS Test Decks
PS Form 3553, *CASS™ Summary Report*

It is the customer's responsibility to notify the MASS Department, in writing, of any machine conversions involving multiple manufacturers. A Hybrid configuration will require recertification of the machine.

To ensure your understanding of the requirements of the MASS program, you must return this signed letter of acknowledgment to the MASS Department prior to, or along with, your MASS Order Form for Cycle J. The MASS Department will not process a MASS Order Form request unless we have received this signed letter.

6060 PRIMACY PKWY STE 201
MEMPHIS TN 38188-0001
800-331-5746
FAX 901-767-8853

0199cas.doc

If you have any questions or need additional information, please contact the MASS Certification Department at 800-642-2914.

Sincerely,

for Janice E. Caldwell
Manager, Address Management

Date: _____

Company Name: _____

By: _____

Title: _____

Address: _____

City, State, Zip: _____

Appendix 1:

PS Form 3553,

CASS™ Summary Report

UNITED STATES POSTAL SERVICE®

CASS™ Summary Report

This form may be generated as the output of address matching processing using CASS-Certified™ software in conjunction with current USPS® address database files. Any facsimile must contain the same information in the same format as the printed form.

See Domestic Mail Manual *Section A950 for more information.*

A. Software

CASS A1	1. CASS-Certified Company Name	2. CASS-Certified Software Name & Version	3. Configuration
	4. Z4Change Certified Company Name	5. Z4Change Certified Software Name & Version	6. Configuration
	7. eLOT Certified Company Name	8. eLOT Certified Software Name & Version	9. Configuration
MASS A2	1. MASS™ Certified Company Name	2. MASS Certified Software Name, Version & Model No.	3. Configuration
			4. MLOCR Serial No.

B. List

1. List Processor's Name	**2. Date List Processed**	**3. Date of Database Product Used**
	a. Master File	a. ZIP + 4® File
	b. Z4Change	b. Z4Change
	c. eLOT	c. eLOT
	d. CRIS	d. CRIS
4. List Name or ID No. (*If using ID No., number must start with ID #*)	5. Number of Lists	6. Total Records Submitted for Processing

C. Output

Output Rating	1. Total Coded	2. Validation Period	Output Rating	1. Total Coded	2. Validation Period
a. ZIP + 4 Coded ▶		From To	d. 5-Digit Coded ▶		From To
b. Z4Change Processed ▶			e. CRRT Coded ▶		From To
c. DPBC Assigned ▶		From To	f. eLOT Assigned ▶		From To

D. Mailer

I certify that the mailing submitted with this form has been coded *(as indicated above)* using CASS-Ceritified software meeting all of the requirements listed in the *Domestic Mail Manual* Section A950.

1. Mailer's Signature	2. Date Signed

3. Name and Address of Mailer

E. Qualitative Statistical Summary (QSS)

For informational Purposes Only: QSS is solely made available for the list processor's review and analysis. This information is not to be considered by the Postal Service™ personnel in determining rate eligibility under any circumstances. See reverse for a detailed explanation.

High Rise Default	High Rise Exact	RR Default	RR Exact	LACS/LACS^{Link}	EWS	DPV	RDI

This form available on the web at www.usps.com/forms/allforms.htm

Instructions

A. Software

A1.1, 1.4, 1.7, & A2.1 – Company Name: Enter the name for *each kind of software* as it appears on the CASS/MASS certificate.
A1.2, 1.5, 1.8, & A2.2 – Software Name and Version: Enter name and version for *each kind of software* as it appears on the CASS/MASS certificate.
A1.3, 1.6, 1.9, & A2.3 – Configuration: Enter the specific software configuration parameter settings as it appears on the CASS/MASS certificate.
A2.4 – MLOCR: Enter the MLOCR Serial Number as it appears on the MASS Certificate.

NOTE: If information entered in this section represents the list processing of more than one certified company, attach a list of company names, software names and versions, as well as the configuration to code the address information used in the mailing.

B. List

1. List Processor's Name: Enter the company name that coded the address list(s) and/or performed ZIP + 4 barcoding using CASS-Certified software. Attach a list if additional space is required.
2. Date List Processed: Enter the processing date for each list. If multiple lists, enter the oldest date from the list.
3. Date of Database Product Used: Enter the version date of each database package used for processing. If multiple lists, enter the oldest version date from the lists.
4. List Name or ID No.: Print the name or identification number of the address list. If more than one list is used, leave blank. If the identification number is used, the number MUST be preceded by "ID#".
5. Number of Lists: Enter the number of lists used to produce the mailing.
6. Total Records Submitted for Processing: Enter the total number of address records *(from all lists in item B5)* submitted at the time the list(s) was coded.

C. Output

1. Total Coded: Enter the total number coded.
2. Validation Period: Enter the effective dates as shown below:

Product Name	From Date	To Date
ZIP + 4 Coded	30 days before *(the 15th of each month or bi- monthly)* or no later than 105 days after the file date.	180 days after the ZIP + 4 valid "From" date.
Total Delivery Point Barcoded	30 days before *(the 15th of each month or bimonthly)* or no later than 105 days after the ZIP + 4 product file date.	180 days after the DPBC valid "From" date.
Five-Digit Coded	30 days before *(the 15th of each month or bimonthly)* or no later than 105 days after the ZIP + 4, Five-digit ZIP, or the Carrier Route product date.	365 days after the Five-Digit Valid "From" date.
Total Carrier Route Coded	30 days before or up to 105 days after the ZIP + 4, Five-Digit ZIP, or the Carrier Route product date *(the 15th of each month or bimonthly)* or up to 105 days after the file date.	90 days after the Carrier Route Valid "From" date.
eLOT™ Sequence No. Assigned	30 days before or up to 105 days after the eLOT file product date *(the 15th of each month or bimonthly)*.	90 days after the eLOT valid "From" date.

D. Mailer

1. Signature: Signature of individual who processed the list, or the mailer's representative.
2. Date Signed: Enter the date this form is signed.
3. Name & Address of Mailer: Enter the name and address of the individual whose signature appears in item D1.

E. Qualitative Statistical Summary (QSS)

This information allows mailers and list processors to evaluate the quality of their address list processed through CASS software before its contents enter the mailstream. A significant number of Highrise default/rural route default matches, although these addresses remain eligible for postal automation rate discounts at this time, increase the costs and reduce the efficient delivery of this mail. Mailer's should research to obtain secondary unit designator address information or highrise addresses and specific box number information for rural route addresses which are coded to default records on the National ZIP + 4 File.

Highrise Default/RR Default

Entries in this box show the number of addresses that were default matched. Defaults are matches made to adresses that contain invalid/missing secondary address or box information. A highrise default contains the building street address in the primary range field and spaces in the secondary range field. A rural route default contains the route number in the primary name but also has spaces in the primary address range.

Locatable Address Conversion System (LACS)

Entries in this box show the number of addresses that matched to a ZIP + 4 record with a LACS indicator. LACS service provides mailers an automated method of obtaining new addresses when a 911 emergency system has been implemented. Mailers should make every effort to obtain current address information from a LACS or LACS^{Link} vendor.

LACS^{Link}™ System

Entries in this box show the number of addresses which have been converted through the LACS^{Link} process. LACS^{Link} is a data product provided by the Postal Service to allow addresses that have been converted due to USPS changes or for 911 emergency systems to be linked with their new address.

Early Warning System (EWS)

Entries in this box show the number of addresses on the processed address list that are new addresses not in the current US Postal Service ZIP + 4 File. These addresses are, however, valid addresses as formatted and should not be changed in any way since the Postal Service will assign ZIP + 4's to these addresses on the next monthly ZIP + 4 File.

DPV™ System

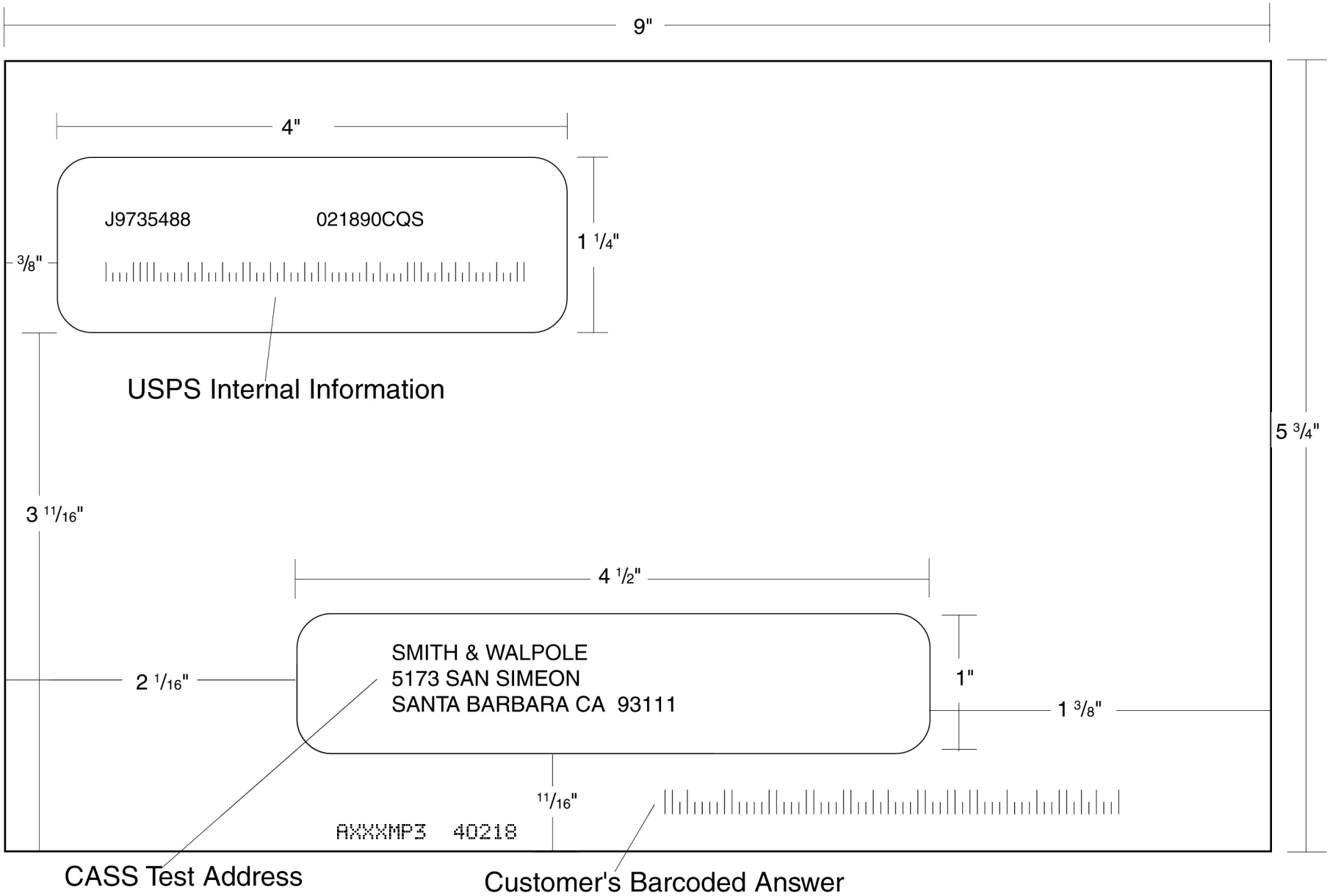
Entries in this box show the number of records delivery point confirmed. Only DPV enabled software will return a value in this box *(Check with your software vendor for obtaining this option)*. These address records are valid delivery points by the US Postal Service. Addresses that are not confirmed by DPV are either new addresses not available on the current Delivery Sequence File, or are not valid and the list holder should further investigate to determine the accuracy of these addresses. Presently, the Postal Service is not requiring delivery point validation for rate eligibility. However, this policy is subject to change and mailers should make every effort to ensure the quality of their address list(s).

RDI™ System

Entries in this box show the number of addresses on the processed address list that are residential. RDI is designed to be used in conjunction with CASS-Certified ZIP + 4 or DPV enabled address matching software. RDI will assist user's/licensees in shopping for the lowest delivery cost for a specific address by identifying whether that address is listed as business or residential in the Address Matching System database. In order to enter into the process to develop RDI-enabled software, you must be a developer of currently CASS-Certified address matching software.

Appendix 2:
Test Mailpiece Example

Test Mailpiece Example



Appendix 3:
Translation of Error Codes and Special Flags

US Postal Service's National Customer Support Center Coding Accuracy Support System

Customer No Match Record Translation of Error Codes & Special Flags

All categories except L are required. Address-matching software must obtain a minimum accuracy rate of 98.5% in each required category to obtain CASS Certification.

Error Codes

01 5-digit ZIP not match
02 ZIP+4 not match
03 Carrier ID not match
04 City name not match
05 State abbreviation not match
06 Out of range
07 Address is non-deliverable
08 Unique ZIP Code not finest level of code
09 LACS indicator
10 Perfect address
11 General standardization error
12 eLOT sequence
13 eLOT A/D code
14 RDI
15 Fatal Error
16 LACS^{Link} Indicator
17 LACS^{Link} Return Code
19 Incorrect delivery point barcode (Non-Fatal)
20 Incorrect delivery point barcode
21 PMB
22 Default flag error/Record type error
30 History
DO Confirmation
DC CMRA
DF False-positive
DT Delivery type
DN No stats
DB Business
DD Drop
DK Drop count
DW Throwback
DS Seasonal
DV Vacant
DL LACS

Record Type

S Street
P PO Box
R Rural Route
H Highrise
F Firm
G General Delivery

Standard Address with Elements

(Spelled out or Abbreviated)

AA Firm Name - Abbreviation
AB Firm Name - Noise words
AC Firm Name - Address similar to firm name
AD Firm Name - Swap firm name and Address field
AE Normalized street name
AF Street Name - Spelling variation
A0 5-digit
A1 Dropped 5-digit
A4 5-digit with non-mailing name
A5 Dropped 5-digit with non-mailing name
A8 5digit misspelled city
* A9 Dropped 5-digit with misspelled city

Standard Address

(Includes Reversed Alphanumeric Primary/Secondary Numbers, Reversed Pre/Post Directionals, and Secondary Number Combined with Primary Number)

B0 5-digit
B1 Dropped 5-digit
* B2 5-digit with misspelled street
* B3 Dropped 5-digit with misspelled street
B4 5-digit with non-mailing name
B5 Dropped 5-digit with non-mailing name
* B6 5-digit with misspelled street and non-mailing name
* B7 Dropped 5-digit with misspelled street and non-mailing name
B8 5-digit with misspelled city
* B9 Dropped 5-digit with misspelled city
BE Normalized street names

Standard Address with Post-Directional Dropped or Incorrect

CC Post-directional changed to a non-cardinal directional - no match
C0 5-digit
C1 Dropped 5-digit
* C2 5-digit with misspelled street
* C3 Dropped 5-digit with misspelled street
C4 5-digit with non-mailing name
C5 Dropped 5-digit with non-mailing name
* C6 5-digit with misspelled street and non-mailing name
* C7 Dropped 5-digit with misspelled street and non-mailing name
C8 5-digit with misspelled city
* C9 Dropped 5-digit with misspelled city

Standard Address with Pre-Directional Dropped or Incorrect

DC Pre-directional changed to a non-cardinal directional - no match
D0 5-digit
D1 Dropped 5-digit
* D2 5-digit with misspelled street
* D3 Dropped 5-digit with misspelled street
D4 5-digit with non-mailing name
D5 Dropped 5-digit with non-mailing name
* D6 5-digit with misspelled street and non-mailing name
* D7 Dropped 5-digit with misspelled street and non-mailing name
D8 5-digit with misspelled city
* D9 Dropped 5-digit with misspelled city

Standard Address with Suffix Dropped

E0 5-digit
E1 Dropped 5-digit
* E2 5-digit with misspelled street
* E3 Dropped 5-digit with misspelled street
E4 5-digit with non-mailing name
E5 Dropped 5-digit with non-mailing name
* E6 5-digit with misspelled street and non-mailing name
* E7 Dropped 5-digit w/misspelled street & non-mailing name
E8 5-digit with misspelled city
* E9 Dropped 5-digit with misspelled city

Dual Address

F0 Street address
F1 Box record
F4 Street address with non-mailing name
F8 Street address with misspelled city
F9 Box record with misspelled city

Aliases

G0 5-digit - Base
G1 5-digit - Alias
G2 Dropped 5-digit - Base
G3 Dropped 5-digit - Alias
** G4 5-digit - Out of range
G5 30 char abbreviation alias

Alias/Mult Response

** H0 5-digit - Base
** H1 5-digit - Alias

Small Town Default

I0 Exist in ZIP+4
** I1 No match in ZIP+4 P&G records exist
** I2 General Delivery match in ZIP+4/ G rec only - no match
** I3 No match in ZIP+4/City State

Last Line

JA Input city/ZIP Code correspond; exact match in ZIP Code
JB Input city/ZIP Code correspond; Input City is non-mailing name, exact match in ZIP Code
JC Input city/ZIP Code don't correspond; inexact match in ZIP Code
JD Input city/ZIP Code don't correspond; inexact match in city
JE Input city equals 5-digit PLL, ZIP+4 PLL is different
JI Input city/ZIP Code don't correspond; best candidate is inexact match in finance number, but not in either City or ZIP Code. No Match.
J0 5-digit
J1 Dropped 5-digit
* J2 5-digit with misspelled street
* J3 Dropped 5-digit with misspelled street
J4 5-digit with dropped component
J5 Dropped 5-digit and component
* J6 5-digit with dropped component and misspelled street
* J7 Dropped 5-digit and component with misspelled street
J8 5-digit with misspelled city
* J9 Dropped 5-digit with misspelled city

Multiple Response+

** K0 5-digit
** K1 Dropped 5-digit
** K2 5-digit with misspelled street
** K3 Dropped 5-digit with misspelled street
** K4 5-digit with dropped or incorrect component
** K5 Dropped 5-digit and/or incorrect component
** K6 5-digit with dropped/incorrect component & misspelled street
** K7 Dropped 5-digit and/or incorrect component with misspelled street
** K8 5-digit with misspelled city
** K9 Dropped 5-digit with misspelled city

Inexact/Questionable Matching Logic

* L0 5-digit
* L1 Dropped 5-digit

Customer No Match Record Translation of Error Codes & Special Flags (cont.)

Key Elements Also Known As

**** MA Out of range - no match
M0 With 5-digit
M1 Dropped 5-digit
M8 5-digit with misspelled city
M9 Dropped 5-digit with misspelled city

*** NDF Position Error

N0 5-digit
N1 Dropped 5-digit

Extra Information

O0 5-digit
O1 Dropped 5-digit
O2 PMB on address line
O3 PMB on secondary address line
O4 Valid Secondary with '#' sign; exact match
O5 PMB number is a valid PO Box Number - no match
O6 Invalid secondary with '#' sign; default match
O7 Double '#' signs at the end of address line – invalid
O8 Double '#' signs at the end of address line, one valid value, one invalid value

Seattle Syndrome

P0 5-digit
P1 Dropped 5-digit

*** Salt Lake Syndrome

Q0 5-digit
Q1 Dropped 5-digit

ZIP Correction

R0 Incorrect 5-digit within finance no.
R1 Invalid 5-digit
R2 Incorrect 5-digit within finance no. and incorrect +4
R4 Incorrect 5-digit within finance no. and blank city/state
R5 Incorrect 5-digit not within finance no.

Highrise Default or Delivery Point Alternate

S0 With 5-digit
S4 With 5-digit highrise
S5 "Chase the Base" – Delivery point alternate on input, return highrise exact
** S6 With 5-digit highrise multiple

Hyphenated Ranges

T1 Numeric alpha no match to numeric/numeric alpha exists
T2 Alphanumeric/numeric alpha-transpose to make match
T3 Delete hyphen
T4 Add hyphen
T5 Secy alphanumeric insert hyphen and transpose – default
T6 Add alpha to match to numeric range only
** T7 Add double alphas and validate no match to numeric
** T8 Transpose alpha to beginning/no match to numeric range
TA Recombine hyphenated trailing primary alpah with secondary number
TB Recombine non-hyphenated trailing primary alpha with secondary number
TC Recombine hyphenated trailing primary numeric with secondary number
TD Recombine hyphenated trailing alphanumeric/numeric alpha with secondary number
TE Recombine seoncary values into one; exact match only

APO / FPO

UA Bad org info in address line without ZIP Code
UB Out of range records for PSC box numbers
U0 Clean military addresses with 5-digit
U1 Reversed box/PSC number with ZIP Code
U2 Reversed box/PSC number without ZIP Code
U3 Good address/ZIP Code with invalid city name
*** U4 PSC box turned into PO Box with ZIP Code
** U5 Missing PSC, CMR, unit number with good box number
U6 Good military address with invalid ZIP Code
U7 Bad org info in Firm Name field with good ZIP Code
U8 Bad org info in Firm Name field without ZIP Code
U9 Bad org info in address line with ZIP Code

Delivery Address Line

** V0 Contains firm name
** V1 Contains highrise name

Multiple Finance Number Matching

** W0 Multiple response within finance no. - dropped 5-digit
W1 Single response within finance no.- dropped 5-digit
W2 Altered street name
W3 No correlation between city & ZIP-Match in ZIP
** W4 City and ZIP Code from different finance numbers
** W5 State does not agree with ZIP Code

Highrise

X0 With a firm suite number
* X2 With misspelled street
X8 With a firm suite number and misspelled city

Split/Combined Elements

Y0 Combine pre-directional with street name
Y1 Split pre-directional words off street name
Y2 Split suffix words off street name
Y3 Drop suffix words off multi-word street names
Y4 Combine suffix with street name
Y5 Shift street name to pre-directional suffix to street name
** Y6 Invalid street name

ZIPMove

Z0 Valid match in new finance number/Match.
Z1 Invalid match in ZIPMove/No Match.
Z2 Valid ZIPMove match; invalid in new finance number/No Match.

Out of Range/Overlapping

** 10 Bad PO Box for finance no./ZIP
11 Overlapping PO Box ranges/return lowest ZIP+4
** 15 Bad rural route for finance no./ZIP
** 20 Invalid primary number
21 Invalid secondary number
22 "EWS" No match; Input is exact match to EWS record
23 LACS^{Link}
** 24 LACS^{Link} no match

Unique ZIP Codes

4A Valid city and ZIP Code
4B Valid city and ZIP Code with valid add-on (match)
4C Valid city and ZIP Code - default match
4D Valid city and ZIP code with add-on (retain ZIP+4)
4E No correlation between city and ZIP Code; match to city
** 4F No correlation between city and ZIP Code (no match; delete ZIP Code)
4G Input addess line taken from unique ZIP+4 record, match into non-unique

Puerto Rico

** 5A Missing noise URB - end address/multiple with valid or invalid URB
5B Drop or abbreviate leading suffix
5C Alpha or numeric - end address
5D Numeric house number - end address preceded by "#," "No.," or "Num"
5E Alphanumeric house number - end address preceded by "Blq"
5F Alphanumeric house number - begin/end address space alphanumeric
5G Alphanumeric house number - begin/end address hyphen alphanumeric
5H Hyphen house number/"Blq" and "Casa," "Blq" and "#"
** 5J Address contains standalone word "Buzon" (no normalization)
5K No URB input - Match to address with blank URB
51 No URB input - single response
** 52 No URB input - multiple response
53 Valid URB on input - single response with valid/invalid URB
** 54 Valid URB on input - multiple response with valid/invalid URB
55 Missing noise URB - single response with valid/invalid URB
** 56 Missing noise URB-multiple response with valid/ invalid URB
57 Valid URB end address-single response with valid or invalid URB
** 58 Valid URB end address - multiple response with valid or invalid URB
59 Missing URB noise end address - single valid/invalid URB

Magnet Streets With Multiple Parse Variations

** 6E Parsed street name or ZIP+4 street name contains directional or suffix
6F Variation in directional or suffix presentation
6G Suffix or directional dropped
6H Street name incorrectly split into multiple words
6K Trailing numeric/alpha value following a valid suffix

Multiple Address Lines and Perfect Addresses

7A Address line split between two lines
70 Perfect address
7B Multiple field addresses with split-indicia

* No answer will be bypassed
** Return input record (Unless using DPV to break the tie)
*** No grading for standardization
**** Normalization required
\+ Double penalty
++ DPV Tiebreaker

Appendix 4:
Sample MASS Certificate

Multiline Optical Character Reader Accuracy Support System (MASS) Quality Certification

for

System Certification

ZIP + 4 Delivery Point Code Matching Software

MLOCR MAILER/USER

TEST SAMPLE

COURTESY TEST

NCSC COURTESY TEST

KRIER-1

Serial Number: 123-123456 **Configuration:** ABC

*This certificate is valid **12/2002** thru **07/31/2003**.*

UNITED STATES POSTAL SERVICE

Janice E Caldwell

Manager
Address Management

CODING ACCURACY SUPPORT SYSTEM
USPS CERTIFIED

© 1997 USPS

CAM012 JAN 2002

Appendix 5:

Sample
Customer No Match Report

Customer No Match Report Reference Numbers

The reference numbers below provides a brief description of fields on the CASS Customer No Match Report located on the next page.

1. **CASS Record Given** is the address as it appeared on the mailpiece.
2. **CASS Key** uniquely identifies each test record on the mailpiece.
3. Pre-**Barcode** indicates if address is prebarcoded in the address block of the mailpiece.
   Y = Yes,
   N = No,
   * = customer sprayed pre-barcoded as customer answer
4. **Z9** indicates the presence of an invalid ZIP + 4 Code on the mailpiece.
   Y = Yes, N = No
5. **CASS Standardization Answer** is the expected return answer on the mailpiece.
6. **Special Flag** identifies the type of test address given.
7. **Customer Record Return** is the customer's answer with ZIP + 4 and barcode.
8. **#** indicates fatal ZIP + 4 add-on error (i.e., '0000'/'9999')
   ***** indicates delivery point error.
9. '**Y**' indicates misread/miscoded error for character recognition in street address information.
10. **ZIP + 4 Odd/Even/Both** indicates the ZIP + 4 range. 'Y' in this field indicates that the ZIP + 4 code has had transaction in the past 12 months as identifed by Z4CHANGE.
    O = Odd
    E = Even
    B = Both
    Y = Z4CHANGE

US POSTAL SERVICE - CODING ACCURACY SUPPORT SYSTEM
NATIONAL CUSTOMER SUPPORT CENTER
CUSTOMER NO MATCH REPORT
ADDRESSES WHICH ARE GRADED AND SCORED

CUSTOMER NAME: SIEMENS COMMERCIAL MAIL SYSTEM
CUSTOMER ID: 010930ADR

CASS RECORD GIVEN					CASS STANDARDIZATION ANSWER				CUSTOMER RECORD RETURNED		
JAMES B RYAN INC (1) 600 N 30TH ST # 3924 # 1117 CAMDEN NJ 08105 (2)					JAMES B RYAN INC (5) 600 N 30TH ST # 3924 # 1117 CAMDEN NJ 08105-1363 99 (6) (10)				UNREA-DABL E		
CASS KEY B9806679	SIZE C	BARCODE N	Z9 N	CASE MIXED	FONT D	SPECIAL FLAG 07	RECORD TYPE H	ZIP+4 ODD/EVEN/BOTH Y		RECORD TYPE	ZIP+4 ODD/EVEN/BOTH
INDIA GARMENTS 404 HACKENSACK ST # 2F # 3643 CARLSTADT NJ 07072 (3)					INDIA GARMENTS 404 HACKENSACK ST APT 2F # 3643 CARLSTADT NJ 07072-1313 26				REJ		
CASS KEY B9806779	SIZE C	BARCODE N	Z9 N	CASE MIXED	FONT D	SPECIAL FLAG 08	RECORD TYPE H	ZIP+4 ODD/EVEN/BOTH E		RECORD TYPE	ZIP+4 ODD/EVEN/BOTH
RADEY AND FULLER ASSOC 905 KINGS HWY N # 9788 # 1 CHERRY HILL NJ 08034 (4)					RADEY AND FULLER ASSOC 905 KINGS HWY N STE 1 # 9788 CHERRY HILL NJ 08034-1536 01				08034-1536 99* (8)		
CASS KEY B9806780	SIZE A	BARCODE N	Z9 N	CASE UPPER	FONT A	SPECIAL FLAG 08	RECORD TYPE H	ZIP+4 ODD/EVEN/BOTH O		RECORD TYPE	ZIP+4 ODD/EVEN/BOTH
DOBBS ANNEX GENERAL DELIVERY ROCKWALL TX 75032					DOBBS ANNEX GENERAL DELIVERY ROCKWALL TX 75087-9999 99				- GENERAL DELIVERY 75938-9999 99# (8)		
CASS KEY B9806877	SIZE C	BARCODE N	Z9 N	CASE MIXED	FONT B	SPECIAL FLAG R0	RECORD TYPE G	ZIP+4 ODD/EVEN/BOTH B		RECORD TYPE G	ZIP+4 ODD/EVEN/BOTH
JUNGLE FOWL VACATIONS HC 69 BOX 206 GRADY OK 73561-4598					JUNGLE FOWL VACATIONS HC 69 BOX 206 GRADY OK 73569-9601 06				- HC 69 73561-9801 06 (7)		
CASS KEY B9806940	SIZE A	BARCODE N	Z9 N	CASE UPPER	FONT A	SPECIAL FLAG R2	RECORD TYPE R	ZIP+4 ODD/EVEN/BOTH B	Y (9)	RECORD TYPE R	ZIP+4 ODD/EVEN/BOTH

CIM031 MAR 2000

FONT A SIZE A: ABCDE
FONT B SIZE A: ABCDE
FONT B SIZE C: ABCDE
FONT C SIZE A: ABCDE
FONT C SIZE C: ABCDE
FONT D SIZE A: ABCDE
FONT D SIZE C: ABCDE

Appendix 6:
Customer Statistics

USPS 47-2467 U.S. POSTAL SERVICE - CODING ACCURACY SUPPORT SYSTEM DATE: 11/26/2002
NATIONAL CUSTOMER SUPPORT CENTER TIME: 19:19:30
REPORT CII030P1 CUSTOMER STATISTICS PAGE: 1

CUSTOMER NAME: USPS
FASTFORW CUST:

CUSTOMER ID: 00004ODCF
SERIAL: 1742
ID ASSIGNED: XXX
ID RETURNED: XXX

GRADING STATISTICS			COUNT		
INITIAL TOTAL CASS RECORDS			350		
AVAILABLE FOR GRADING			348 (FF= 0)		
RECS BYPASSED			41 (FF= 0 / OLD= 0)		
Z4CHANGE/NON-DELIVERABLE		4			
MANUAL OVERRIDES		28			
REJECT < 7.5 %		8			
NO BARCODE SPRAYED	8				
ONLY CORRECT 5DIGIT SPRAYED	0				
BARCODE UNREADABLE (UNRD) < 2.5 %		1			
NO PLUS4 ON MAIL PIECE		0			
TOTAL RECORDS AVAILABLE FOR GRADING			307		100.00%
CORRECTLY CODED RECORDS				305 (FF= 0)	99.35%
PENALTY FOR MISREAD/MISCODE ERRORS		0 X .5		000000	
PENALTY DEFAULT (KEYING) DEPTH/CODE ERR		0		0	
CORRECTLY CODED ADJUSTED FOR PENALTIES			0000000000		000000%
BONUS POINTS AWARDED (NOT ENOUGH BONUS QUESTIONS CORRECT)					0.00%
TOTAL RECORDS COUNTED INCORRECT				2.00	0.65%
INCORRECTLY CODED RECORDS		2			
BARCODE UNREADABLE (UNRD) > 2.5 %		0			
REJECTS > 7.5% COUNTED INCORRECT		0			
PENALTY FOR MISREAD/MISCODE ERRORS		000000			
PENALTY DEFAULT (KEYING) DEPTH/CODE ERR		0			

****

INCORRECTLY CODED PERFECT ADDRESSES 0 (MAX= 1)

INCORRECTLY CODED DPBC 1 (MAX= 1)

****

FINAL SCORE (MINIMUM 98%): 99.35%

****

##########
##########
##########

Appendix 7:
Electronic Data File Description

Electronic Data File Description

The electronic error report for MASS is shown below in COBOL copybook format. The first seven lines are HEADER information.

Header Information:

```
****************************************
USPS 47-2467

REPORT CII030P2
CUSTOMER NAME:   ABC COMPANY
CUSTOMER ID:     05123OAAG
****************************************
```

Header Record:

```
01  CII030P2-REPORT-HEADER.
    05  P2-LINE-1.
        10  FILLER                  PIC X(300) VALUE ALL '*'.
    05  P2-LINE2.
        10 FILLER                   PIC X(05) VALUE SPACES.
        10 FILLER                   PIC X(12) VALUE 'USPS 47-2467'.
        10 FILLER                   PIC X(73) VALUE SPACES.
        10 FILLER                   PIC X(50) VALUE
        'US POSTAL SERVICE - CODING ACCURACY SUPPORT SYSTEM'.
        10 FILLER                   PIC X(71) VALUE SPACES.
        10 FILLER                   PIC X(06) VALUE 'DATE'.
        10 CII030P2-MM              PIC X(02).
        10 FILLER                   PIC X(01) VALUE '/'.
        10 CII030P2-DD              PIC X(02).
        10 FILLER                   PIC X(01) VALUE '/'.
        10 CII030P2-CC              PIC X(02).
        10 CII030P2-YY              PIC X(02).
        10 FILLER                   PIC X(08) VALUE SPACES.
    05  P2-LINE-3.
        10 FILLER                   PIC X(75) VALUE SPACES.
        10 FILLER                   PIC X(50) VALUE
        '    NATIONAL CUSTOMER SUPPORT CENTER     '.
        10 FILLER                   PIC X(71) VALUE SPACES.
        10 FILLER                   PIC X(06) VALUE 'TIME'.
        10 CII030P2-HH              PIC X(02).
        10 FILLER                   PIC X(01) VALUE ':'.
        10 CII030P2-MN              PIC X(02).
        10 FILLER                   PIC X(01) VALUE ':'.
        10 CII030P2-SS              PIC X(02).
        10 FILLER                   PIC X(01) VALUE SPACES.
    05  P2-LINE-4.
        10 FILLER                   PIC X(05) VALUE SPACES.
        10 FILLER                   PIC X(15) VALUE
        'REPORT CII030P2'.
        10 FILLER                   PIC X(70) VALUE SPACES.
        10 FILLER                   PIC X(50) VALUE
```

```
        ‘    ADDRESSES WHICH ARE GRADED AND SCORED     ‘.
        10 FILLER                    PIC X(95) VALUE SPACES.
    05  P2-LINE-5.
        10 FILLER                    PIC X(05) VALUE SPACES.
        10 FILLER                    PIC X(16) VALUE
        ‘CUSTOMER NAME: ‘.
        10 CII030P2-NAME                PIC X(40).
        10 FILLER                       PIC X(374) VALUE SPACES.
    05  P2-LINE-6.
        10 FILLER                       PIC X(05) VALUE SPACES.
        10 FILLER                       PIC X(16) VALUE
        ‘CUSTOMER ID: ‘.
        10 CII030P2-NUM                 PIC X(9).
```

Data Record:

Data records will start in record 8 and follow this format:

```
01  ERR-RPT2-WORK-RECD.
    05  ERR-RPT2-CARR-CNTL          PIC X(01).
    05  ERR-RPT2-CASS-KEY           PIC X(08).

*----- ORIGINAL INPUT FIELDS ---------------
    05  ERR-RPT2-IFIRST-FIRM        PIC X(40).
    05  ERR-RPT2-IZIP               PIC X(10).
    05  ERR-RPT2-ICITY              PIC X(28).
    05  ERR-RPT2-ISTATE             PIC X(02).
    05  ERR-RPT2-ISEC-URB-FIRM      PIC X(30).
    05  ERR-RPT2-IDELADDR           PIC X(64).

*----- STANDARDIZED POSTAL ANSWER FIELDS ---------------
    05  ERR-RPT2-SFIRST-FIRM        PIC X(40).
    05  ERR-RPT2-SSEC-URB-FIRM      PIC X(40).
    05  ERR-RPT2-SADDRESS           PIC X(64).
    05  ERR-RPT2-SCITY              PIC X(28).
    05  ERR-RPT2-SSTATE             PIC X(02).
    05  ERR-RPT2-SZIP               PIC X(05).
    05  ERR-RPT2-SHYPHEN            PIC X(01).
    05  ERR-RPT2-SADDON             PIC X(04).
    05  ERR-RPT2-SDELPT             PIC X(02).
    05  FILLER                      PIC X(01).

*----- MISCELLANEOUS REPORT FIELDS ---------------
    05  ERR-RPT2-MCONTROL.
        10 ERR-RPT2-MCNTL-SIZE              PIC X(02).
*           Size values:     A      C
        10 ERR-RPT2-MCNTL-BARCODE           PIC X(01).
*           Invalid BARCODE Present on mailpiece in WIDEAREA
*           Values:          Y      N
        10 ERR-RPT2-MCNTL-ZIP9              PIC X(01).
*           Invalid ZIP+4 Present on mailpieces:
```

```
*           Values:          Y     N
        10 ERR-RPT2-MCNTL-CASE          PIC X(05).
*           Case values:     Upper    Mixed
        10 ERR-RPT2-MCNTL-FONT          PIC X(01).
*           Font values:     A     B     C     D
    05  ERR-RPT2-MRECTYPE                PIC X(01).
    05  ERR-RPT2-FILLER1                 PIC X(01).
    05  ERR-RPT2-MSPECIAL                PIC X(02).
    05  ERR-RPT2-MODDEVEN                PIC X(01).

*----- CUSTOMER RETURNED ANSWER ---------------
    05  ERR-RPT2-CZIP                    PIC X(05).
    05  ERR-RPT2-CHYPHEN                 PIC X(01).
    05  ERR-RPT2-CADDON                  PIC X(04).
    05  ERR-RPT2-CDPBC.
        10 ERR-RPT2-CDPBC-ANS            PIC X(02).
        10 ERR-RPT2-CDPBC-CHKDGT         PIC X(02).
    05  ERR-RPT2-FILLER2                 PIC X(12).

*----- DATA RELATING TO CUST RETURNED ZIP+4 ANSWER ---------------
*   This is the parsed information associated with the returned ZIP+4 from
*   the customer. It is taken from ZIP+4 information that may be different
*   from the customer's due to timing of the ZIP+4 data.
    05  ERR-RPT2-LINE1.
        10  ERR-RPT2-FIRM                PIC X(50).
    05  ERR-RPT2-LINE2.
        10  ERR-RPT2-PRIMLO              PIC X(10).
        10  FILLER                       PIC X(03) VALUE ' - '.
        10  ERR-RPT2-PRIMHI              PIC X(10).
        10  FILLER                       PIC X(27).
    05  ERR-RPT2-LINE3.
        10  ERR-RPT2-PREDIR              PIC X(02).
        10  FILLER                       PIC X(01) VALUE SPACE.
        10  ERR-RPT2-STRNAME             PIC X(28).
        10  FILLER                       PIC X(01) VALUE SPACE.
        10  ERR-RPT2-SUFFIX              PIC X(04).
        10  FILLER                       PIC X(01) VALUE SPACE.
        10  ERR-RPT2-POSTDIR             PIC X(02).
        10  FILLER                       PIC X(11) VALUE SPACE.
    05  ERR-RPT2-LINE4.
        10  ERR-RPT2-SECUNIT             PIC X(04).
        10  FILLER                       PIC X(01).
        10  ERR-RPT2-SECLO               PIC X(08).
        10  FILLER                       PIC X(03) VALUE ' - '.
        10  ERR-RPT2-SECHI               PIC X(08).
        10  FILLER                       PIC X(26).
    05  ERR-RPT2-CRECTYPE                PIC X(01).
    05  ERR-RPT2-CODDEVEN                PIC X(01).
```