USPS-T-13

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

POSTAL RATE AND FEE CHANGES, 2000

Docket No. R2000-1

DIRECT TESTIMONY OF LLOYD RAYMOND ON BEHALF OF THE UNITES STATES POSTAL SERVICE

CONTENTS

AUTOBIOGRAPHICAL SKETCH

My name is Lloyd B. Raymond. I am President and CEO of Resource & Process Metrics, Inc., a Management Consulting firm specializing in data collection and the development of Engineered Standards (ES). I am a certified Machinist and received a Bachelor of Science in Industrial Engineering from Western New England College.

I have extensive experience applying work-measurement systems, developing time-based planning and scheduling systems, providing data for project/product costing, and making recommendations for methods improvements. I developed work-force management and resource-management systems as a consultant to manufacturing corporations, utility, and telecommunication industries.

I have presented several papers at professional conferences.[1] I also co-authored a chapter in Maynard's Industrial Engineering Handbook focusing on the special applications of industrial engineering in the utility industry.[2]

In 1997, I founded Resource & Process Metrics, Inc., a company dedicated to the collection of resource utilization data and the creation of metrics to support business decisions. Resource & Process Metrics applies technology to efficiently collect and process information. The data collected becomes the basis for work-measurement application, time-standard establishment, and improved methods recommendations.

The Postal Service contracted with A.T. Kearney and Resource & Process

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[1] Ciupak, D., & Raymond, L. (1989). Multiple activity analysis: A technique for optimizing the size of utility crews. Societies' Manufacturing and Productivity Symposium Proceedings (pp. 479-483). Norcross: Industrial Engineering & Management Press.

Raymond, L.B. (1986). MOST: A solution to work-measurement in the utility industry. Industrial Engineering Conference Proceedings (pp. 530-533). Norcross: Industrial Engineering & Management Press.

Redding, J., & Raymond, L. (1991). New technology for utility work measurement. MOST® User's Conference Proceedings (pp. 403-423). H.B. Maynard & Company Computer Services Division.

[2] Redding, J., & Raymond, L. (1992). Special industry applications: Utilities. In W.K. Hodson (Ed.), Maynard's Industrial Engineering Handbook (pp. 15.45-15.61). New York: McGraw-Hill.

Metrics, Inc. in 1996 to develop engineered methods and time standards for city letter carriers.

For the past three years, I have been applying my knowledge on work-measurement in the Postal industry as Project Manager / Senior Task Order Manager for the Engineered Standards project. While working on this project, I have been studying city letter carriers from an operational, methods-based perspective.

PURPOSE AND SCOPE

At the request the U. S. Postal Service, Resource & Process Metrics, Inc. has supplied Postal Service witness Donald Baron (USPS-T-12) with data collected for the Engineered Standards / Delivery Redesign project. The database for the project contains information pertinent to the study of carrier street activities.

The purpose of my testimony is to define data included in the Engineered Standards database. My testimony should provide the background necessary for the Postal Rate Commission to accept the use of this database as a source of city carrier street activity information.

The Engineered Standards data can be used to support / update current estimates of street-time proportions derived from a Street-Time Survey (STS) conducted over a three-month period in 1986. The Engineered Standards / Delivery Redesign project data were collected from October 1996 through April 1998. The database contains up-to-date information on carrier activity and route characteristics for both office and street.

GUIDE TO TESTIMONY AND SUPPORTING DOCUMENTATION

This submission includes the body of my testimony and an accompanying Library Reference (USPS-LR-I-163, Engineered Standards Database).

Introductory background material is followed by the testimony divided into several sections. Section one details the purpose of the Engineered Standards / Delivery Redesign project and the process of study design. The sections and sub-sections that follow describe phases of data collection. A section discusses data-collection levels and codes as well as work-sampling scan-sequences. A section then outlines quality assurance precautions taken on- and off-site. The final section is a description of the database and steps taken to prepare the data for this case.

Foundational material is provided. Appendices accompany the body of the testimony to facilitate understanding of the Engineered Standards database. The database is provided as Library Reference I-163.

Appendix A: Basic Delivery Hierarchy. A flowchart of carrier activities and route characteristics used to develop barcode methodology.

Appendix B: Data Collection Instruments. Pictures of data collection instruments. The Videx TimeWand II ®(TW2) used by the data collectors to scan barcodes / collect the data (top picture). The Docking Station used to transfer data scanned to on-site computers (bottom picture).

Appendix C: Barcode Scanning Sheets. Barcodes used to collect information. "Header" sheets and outside / street work-sampling sheets are included for reference. Shows how Levels and Codes relate to barcode and data-collection process.

Appendix D: Table of Outside / Street Levels and Codes. Information appearing in columns and rows of database, respectively. Included to clarify the type of information included in each level. For each work-sampling observation, a code combination across levels creates a scan sequence which ultimately appears as a row in the ES database.

Appendix E: Form 3999x. Postal Service Form which contains route information used to prepare database for Foster Associates, Inc.

Appendix F: STS Scan Combinations. According to STS definitions, the grouping of barcode scans used to create the STS data set.

Library Reference: Engineered Standards Database. Outside / Street work-sampling data collected for the Engineered Standards / Delivery Redesign project. A hard copy and/or electronic version are provided.

BODY OF TESTIMONY

I. Project Objective

The objective of the Engineered Standards was to collect actual activities of the city letter carrier and to develop engineered methods and time standards to establish a workload managing system.

To accomplish this task, we required information on the time spent in the office and on the street. Specifically, we needed carrier- and route-based information. We wanted to know what carriers did, how they did it, and what factors (if any) caused changes in performance. We also wanted to know the mode of travel to/from/on a route Mode of travel: walking, driving, or combination. The delivery-type composition: Residential, Business, Mixed, Curb, Central, NBU and combinations. Delivery-point characteristics such as the type of mailbox, number of obstacles encountered (doors, gates), one- or two-handed delivery slots, the degree of customer interaction, etc.

The data collected needed to be comprehensive in order to support in-depth analysis and validation of work methods. The data also needed to provide activity frequency information to determine the percent time spent doing these activities. Data collection occurred over several stages.

II. Process Design

Stage 1. Stage 1 was a task inventory / pilot study. Stage 1 was conducted at two test sites. The steps outlined were performed by an inventory taskforce. The task force consisted of three Postal Service subject matter experts, the data collectors and project managers. Stage 1 was comprised of the following steps:

1) Followed carriers from time of arrival at the station (clock-in) to end of the day (clock-out). Teams also traced routes from start to finish.
2) Compiled a list of activities performed / route information and arranged the list into a hierarchy.
3) Returned to the stations to follow carriers to insure the hierarchy reflected activities performed / route characteristics.
4) Adjusted hierarchy and finalized flow-process charts with a data collection structure. *Refer to Appendix A.*

After completing steps 1 - 4 which provided study composition details, the technology and methodology for collecting the data was decided.

It was determined that two-person teams would be required to collect the work sampling data. These two-person teams would collect the work-sampling data every six minutes using bar-code technology. The work-sampling data identified the frequency of occurrence of an activity, which translated into the percent of time a carrier spent performing certain activities. Work-sampling was expressed as the percent of observations (i.e. percent the carrier was casing, at a curb delivery point, traveling between a curb delivery point, loading for a loop on a park and loop, etc.).

Stage 2. After the methodology was determined, we began Stage 2 of the project, Preparation and Practice.

5) Items identified in Stage 1's inventory were assigned a barcode.

6) The Videx TimeWand II® (TW2) Barcode Scanners were programmed to recognize these barcodes. *Refer to Appendix B.* The TW2 was also programmed to emit an audible tone every six-minutes.

7) Barcode scanning sheets were assembled into a Barcode Manual. The manual contained various sections: Header information (i.e., Observer ID, State, Unit, Route, Carrier Classification, Start / End Study, Vehicle Odometer), and Outside work-sampling barcodes. *Refer to Appendix C.*

The data collection technique and tools were tested at the pilot sites mentioned above in Stage 1. Data collectors were instructed not to assist or impede carriers.

III. Data Collection

Two phases were used to collect the data. The phases are differentiated by the site selection process used and number of days a carrier/route was studied. The specific details about data collection are addressed later in this testimony.

Studies were performed Monday through Saturday. Logistically, data collection teams could travel to the sites on Sunday and setup. Selection of the sites was tasked to the geographic regions as is described in sections to follow. We randomly selected the routes studied within the participating locations.[3]

Phase 1. Phase 1 of data collection was a series of one-day studies.[4] To select Phase 1 sites, Engineering sent requests to the 10 geographic regions asking each

[3] The random number generator in Excel® was used to ensure random selection of routes within a station. A computer-generated list of numbers was given to each team. Teams were instructed to start with the first number and scan the list until a number corresponded to an active route. If the route could not be observed, the team scanned the list for the next active route number. Once a route was selected, data was collected from that route for that day.

[4] The Phase 1 one-day studies ranged from10/15/96 to 2/13/97.

region to choose 3 to 5 sites (ZIP codes). In addition to the sites selected by the regions, ES used random-number generation to select cities (randomly from a list of finance numbers) and, then, randomly to select the specific ZIP Codes and routes.[5] Data collection began once arrangements were made at the sites selected.

The data collection teams were divided into *A* and *B* shifts. *A* shift collected data Monday through Wednesday and *B* shift Thursday through Saturday. These teams observed several routes at sites. Team members periodically rotated within and between shifts.

Each day observers used the computer-generated, random-number sheets to select a route for observation. For one-day studies, teams observed a different route everyday unless a route number appeared twice on the random number sheet.

Phase 2. Phase 2 of data collection was a series of multiple-day studies.[6] To select Phase 2 sites, the Postal Service sent requests to the 10 geographic regions asking for the selection of potential Engineered Standards Implementation test sites. ES was made aware of two conditions the regions were to follow, the potential implementation sites required city carriers and needed to have Delivery Unit Computers (DUC). Ten sites were selected as potential implementation test sites.[7] Routes within these sites were randomly selected using the random-number sheets.

In Phase 2, we observed the same routes for consecutive days to determine product-flow / delivery patterns over extended time periods. Phase 2 study design also allowed the study of different carriers on a route. Multiple-day studies were performed at

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[5] Ten sites were selected using random number generation to be observed in addition to sites selected by the regions. One-day studies were performed at eight of these 10 sites.

[6] The Phase 2 multiple-day studies time frame ranged from 5/5/97 to 4/23/98.

[7] Delivery Redesign reduced the number of implementation test-sites to five.

sites, which had been selected in Phase 1, as well as at potential ES implementation sites.[8]

Teams were once again divided into *A* and *B* shifts. *A* shift collected data Monday through Wednesday and *B* shift Thursday through Saturday. Team members periodically rotated within and between shifts. At each location, the data collectors used the computer-generated, random-number sheets to select a route for observation. In both phases of data collection, data collectors used the techniques practiced in Stage 2 at the pilot sites. The observers used the barcode technology developed and followed prescribed collection methods. The procedure of data collection used in phases 1 and 2 is outlined in the next section.

[8] Multiple-day studies were performed at two of the 10 sites selected by random-number generation in Phase 1. Sixty-two routes were studied for the two sites, a total of 76 days of observations in the data set.

IV. Procedure

This section details the collection procedure and the substance of the work-sampling entries.

In Stage 2, Preparation and Practice, the TW2 was programmed with the data collection hierarchy and to emit an audible tone to notify collectors to collect work-sampling data. The collection of the work-sampling data began with this tone. At the beep, the LCD on the TW2 prompted data collectors with the word/phrase representing each level of the collection hierarchy.[9] Information was required to be collected / scanned at each level of the hierarchy.[10] In general, all sub-level information (detail level) was scanned before the data collector continued the scanning process at the next level.

Each line in the Engineered Standards Outside / Street database represents a work-sampling scan. The levels discussed are column headers. The codes discussed below are entries / database cell.

Levels. The Outside / Street work-sampling hierarchy started at Level 10 and consisted of five levels. *Refer to Appendix C.*

1) Level 10. Location. Indicated where the carrier was when the tone signaled the collection of work-sampling data.
2) Level 11.1. Personal or Administrative. Indicated if the subject was taking a break or was involved with union business.
3) Level 11.2. Delivery Type. Classified the delivery segments as one of five delivery types: Foot, Curb, Park & Loop, Dismount, Central.

[9] For Outside work-sampling the LCD prompt starts at Level 10, Location.

[10] Each level contained a N/A barcode to enable data collectors to move to the next level unless the data scanned at the level was essential.

4) Level 11.3. Delivery Type Status. Classified the delivery point as Business or Residential / inside or outside delivery.

5) Level 11.4. Activity. Classified carrier activity. Refer to *Appendix D.*

6) Level 11.4.1. Activity Detail. Provided additional detail on carrier activity.

Codes. At each level, data collectors had a choice of several codes, one or two letters followed by a two-digit number. For example, in Level 10 (Location) data collectors scanned L codes. The two-digit number provided additional information. For example, L17 was Gas Station. *Appendix D* details the codes used in each level of the outside work-sampling hierarchy.

It is important to recognize the relationship between the levels and codes. For example, at the Activity Level, F codes, which indicate "Interaction deliveries," were often followed at the Activity Detail Level by G codes, which described the interaction. The tables below are provided to show how codes combine across levels to make-up scan-sequences.

Examples. The following examples demonstrate a scan sequence that represent the street time activities. These activities are Loading, driving, route-access (FAT) running time, route-access (CAT) running time, collection and street support. The scan sequence becomes a line in the database. The scenarios provided below describe commonly occurring events and how data collectors describe that event with the scan sequence.

1. The carrier was standing outside at a personal residence on a porch reaching into the satchel to get some mail on a park & loop section. This would represent Loading.

Level 10	Level 11.1	Level 11.2	Level 11.3	Level 11.4	Level 11.4.1
L12	A00	WT03	S04	J12	H09
Point of Delivery	N/A	Park & Loop Route	Residential Outside	Finger @ Delivery	1-Handed Slam

2. The LLV is parked and the carrier is at the back restocking the satchel to carry another loop on a residential street. This would represent Street Support.

Level 10	Level 11.1	Level 11.2	Level 11.3	Level 11.4	Level 11.4.1
L09	A00	WT03	S04	J11	K01
Park Point	N/A	Park & Loop Route	Residential Outside	Setup	LLV

3. The carrier is waiting for a stoplight to change color while walking on a segment of a Park & Loop before proceeding on to the next residential delivery point. This would represent route-access (FAT).

Level 10	Level 11.1	Level 11.2	Level 11.3	Level 11.4	Level 11.4.1
L21	A00	WT03	S04	T05	H00
Wait while walking	N/A	Park & Loop Route	Residential Outside	Walking	N/A

4. Carrier is slowing down the jeep to serve a restaurant's #2 Curb Box that has the Flag up. This would represent route-access (CAT).

Level 10	Level 11.1	Level 11.2	Level 11.3	Level 11.4	Level 11.4.1
L13	A00	WT02	S02	T02	K00
On Route	N/A	Curb Route	Business Outside	Travel Between Deliveries	Jeep

5. The carrier is reaching through the window of the LLV with mail in hand and is moving the flag down on a #1 rural box to serve a residential customer. This would represent Loading.

Level 10	Level 11.1	Level 11.2	Level 11.3	Level 11.4	Level 11.4.1
L12	A00	WT02	S04	J08	H06
Point of Delivery	N/A	Curb Route	Residential Outside	Delivery/ Collection	#1 Box

6. The carrier has completed the outside delivery and is walking back to the station. This would represent street support.

Level 10	Level 11.1	Level 11.2	Level 11.3	Level 11.4	Level 11.4.1
L13	A00	WT01	S00	T04	K10
On Route	N/A	Foot Route	N/A	Return to Unit	Walking Flat

Scan sequences become lines in the Engineered Standards database after undergoing a process of quality assurance.

V. Quality Assurance

On- and off-site quality checks were performed to assure the quality of data collected / scanned.

On-site. Data-collection teams uploaded data from the TW2 to the on-site computers daily via the Docking Station. Data collectors printed daily reports which the team reviewed for accuracy of scans and manual entries. Changes were not made on site; any changes to the data where noted and forwarded to the central database managers. After being reviewed, the data was uploaded to a central database.

Off-Site. Data was re-reviewed at the central database. Database managers ran and reviewed reports daily. Oversights such as time or date errors were corrected. Illogical sequence of scans were investigated by data collectors. Errors unable to be resolved by the team investigation were purged from data set.

Another method of quality assurance was a station-level data set created by combining the route-level information. Data for each route were compared to this composite to identify outliers. Outliers were investigated at the site by the collection teams. Teams notified the central database managers and corrections were made or the data entry was deleted.

VI. The Database

The Engineered Standards Outside / Street Database contains 39, 046 lines of data. Each line contains work-sampling information. The data cover 340 routes at 53 different locations.[11] During Phase 1 of data collection, 106 routes were observed at 32 locations. In Phase 2 of data collection, 234 routes were observed at 22 locations. Over the course of the project, 844 route-days of Street information was collected through one-day and multiple-day studies of routes.[12] Of the 844 route-days observed 100 route-days were studied from sites and routes chosen at random.

STS Preparation. The carrier activity information collected during the ES study was classified according to the STS definitions for carrier activities. *Refer to Appendix F.* The STS defines: Load Time, Street Support Time, Driving Time, Route/Access (FAT), Route/Access (CAT), and Collection Time.

Each line of the ES database contains a work-sampling scan sequence. The information entered in Level 10 through Level 11.4.1 was used to assign STS definitions to ES data. The scan sequence for each line of the database was reviewed and one of the STS categories was entered. The column "STS Type" contains definitions entered by manual sequence review.

To crosscheck the manual review process, a master list was created of scan sequences. The sequences were grouped according to STS activity. All scan-sequence possibilities for an STS activity were assigned a 1-6 code. An update query was then

[11] One location was observed in both time periods. The total number of different locations for the study is 53.

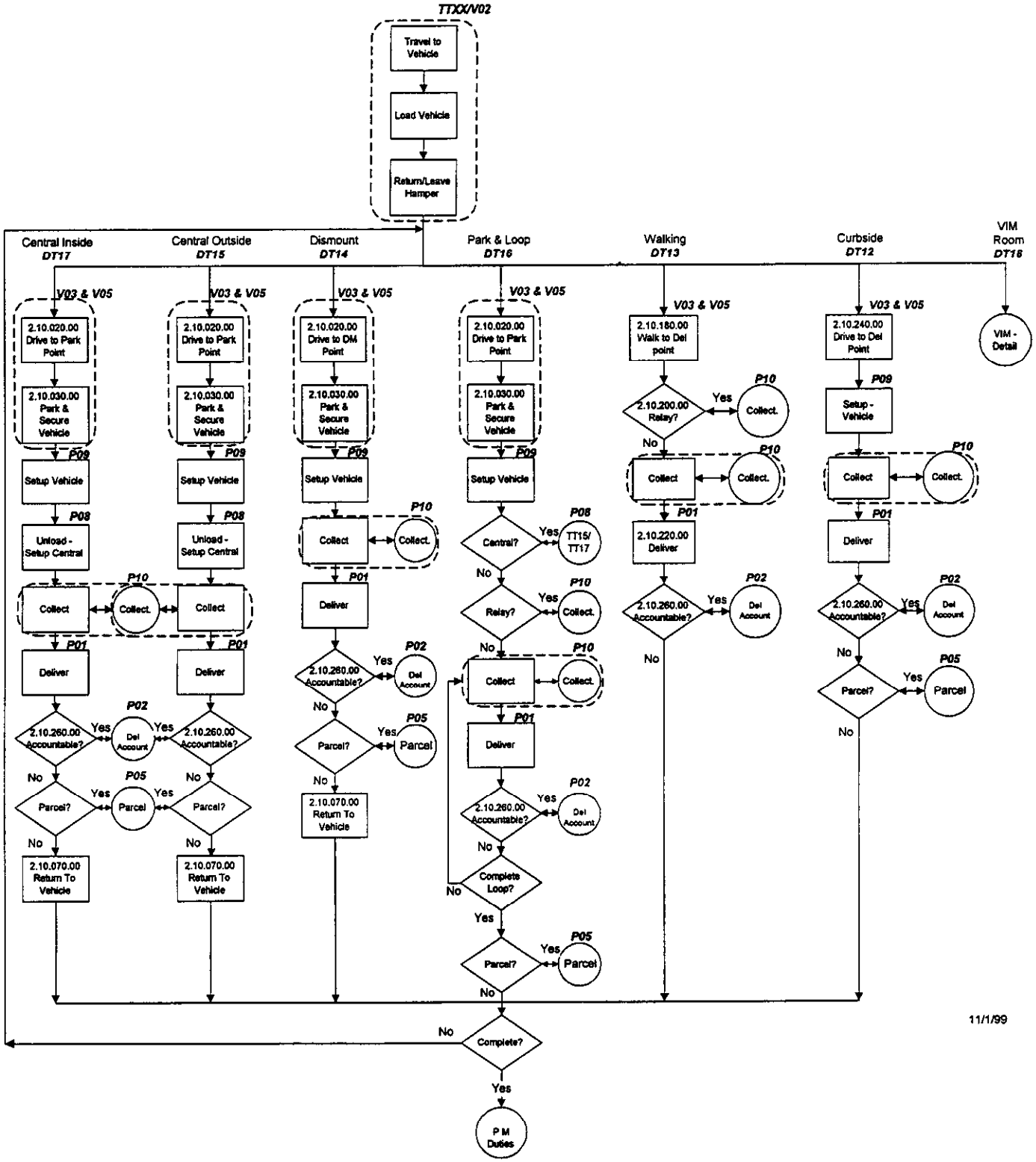
[12] Route-day breakdown: 237 route-days of information were collected with one-day studies, 607route-days were collected through multiple-day studies.

used to assign the sequences a code in the database. These codes appear in the Library Reference USPS-LR-I-163 with the column header "STS Type."

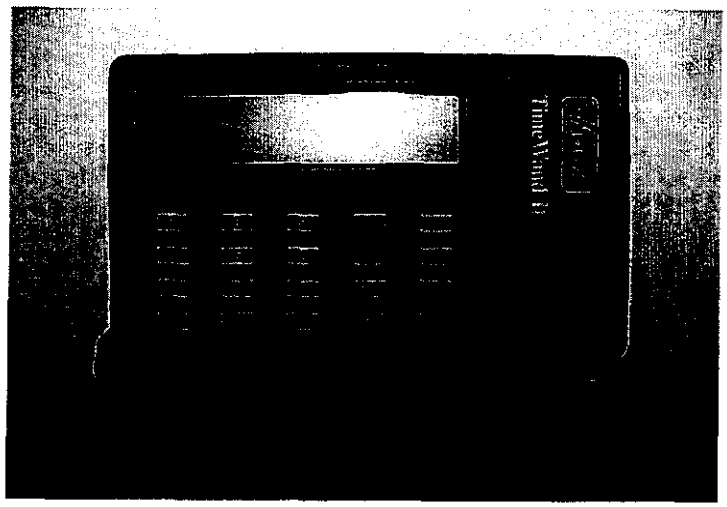
Upon completing the processing and review of the database it was copied as a file onto a CD-ROM. Resource & Process Metrics gave this CD to witness Baron, USPS-T-12.

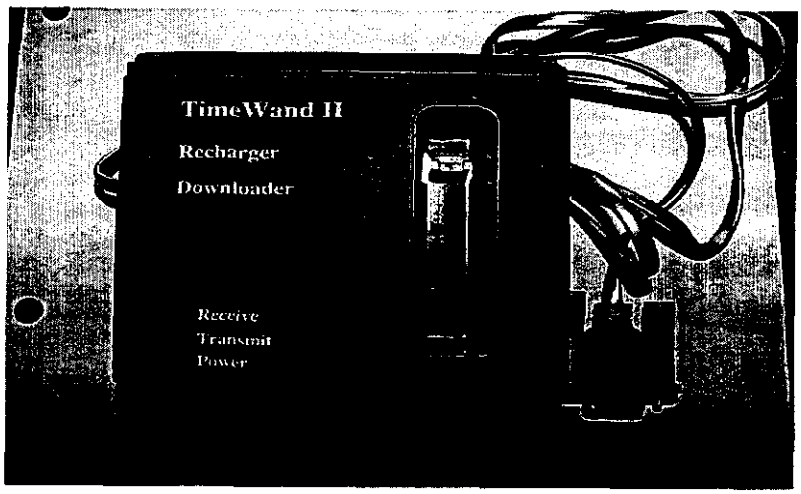
Appendix A:

Delivery - Basic
210.000.000.000



Appendix B




TimeWand II
Recharger
Downloader
Receive
Transmit
Power

Appendix C

The following is a example of an observers barcode sheet used for the start of day scans and contains levels one through six.

01/01/1999 00:28 14402850815 R&PMINC PAGE 01/01

USPS Delivery Methods

Barcode Scanning Sheet
Page 1 - Daily Scans

1. Observer Scan once per day

---

2. State Scan once per day

---

3. Unit Scan applicable code once per day



3.1 Route ID Number Numeric entry of 4 characters

---

4. Subject Job Class Scan applicable code once per day - or if subject changes


JC01 Reg Carrier


JC02 Util Carrier


JC03 PTF Prt Time


JC04 Temp Employe


JC05 Casual Emp

---

5. Subject Present Scan to start the study as soon as the subject is seen.


SP01 Subject Present


SP02 End Subject study

---

6. Mileage Scan to enter starting odometer reading on the delivery vehicle


M01 Not Applicable


M02 Entr Odometer #

Page of Event Numbers ...Next

10/8/96 BARCODES.XLS 2:56 PM

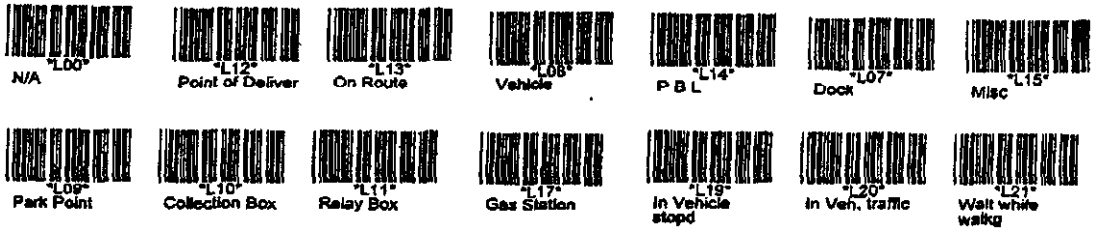
The first four levels of the Street Work Sampling

01/01/1999 03:45 14402858815 R&PMINC PAGE 01/01

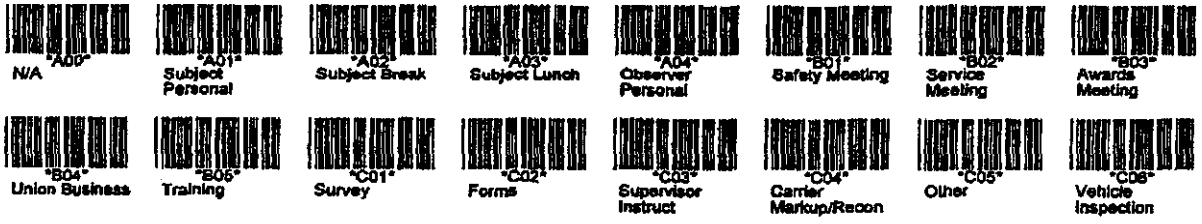
USPS Delivery Methods | Barcode Scanning Sheet | Page 4-Outside Work Sample

10. Outside Location

Scan code corresponding to location snapshot when alarm sounds



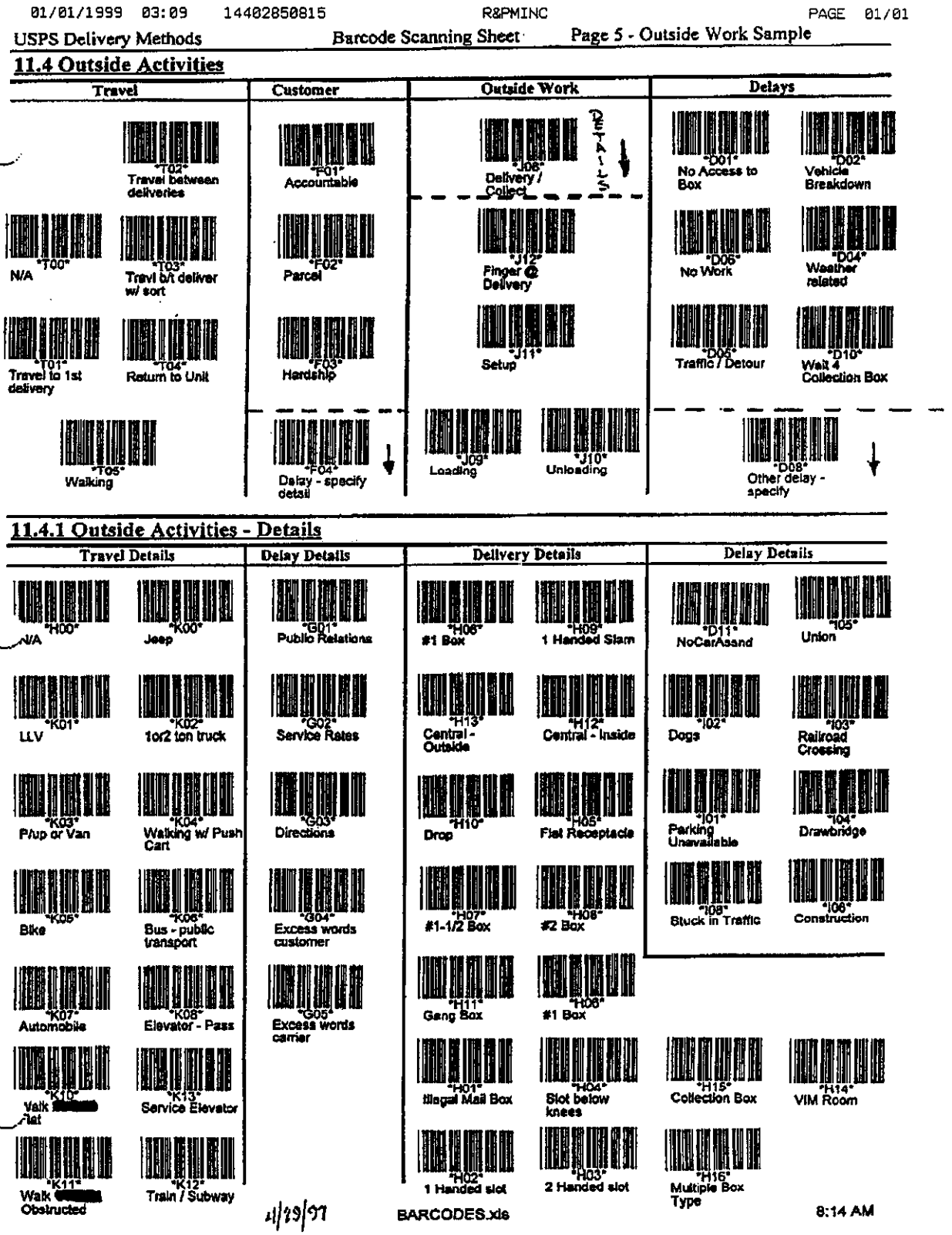
11.1 Outside Personal or Administrative



11.2 Outside Delivery Type

11.3 Outside Delivery Type Status

The following are the sub-levels used in work sampling the Street



Appendix D

Level 10		Level 11.1		Level 11.2		Level 11.3		Level 11.4		Level 11.4.1	
Code	Location	Code	Personal Or Administrative	Code	Delivery Type	Code	Delivery Type Status	Code	Activity	Code	Activity Detail
L00	N/A	A00	N/A	WT00	N/A	S00	N/A	D01	No access to Box	E03	Material Handling
L07	Dock	A01	Personal	WT01	Foot	S01	Business Inside	D02	Vehicle Breakdown	G01	Public Relations
L08	Vehicle	A02	Break	WT02	Curb	S02	Business Outside	D04	Weather	G02	Service Rates
L09	Park Point	B04	Union	WT03	Park & Loop	S03	Residential Inside	D05	Traffic/Detour	G03	Directions
L10	Collection Box			WT04	Dismount	S04	Residential Outside	D06	No Work	G04	Excess Words Customer
L11	Relay Box			WT05	Central			D08	Delay - Specify	G05	Excess Words Carrier
L12	Point of Delivery							D10	Wait for Collection	H00	N/A
L13	On Route							F01	Accountable	H01	Illegal Mail Box
L14	P B L							F02	Parcel	H02	1-Handed Slot
L15	Misc.							F03	Hardship	H03	2-Handed Slot
L17	Gas Station							F04	Delay - Specify	H04	Slot below knees
L18	In Unit walking							J04	Parcels	H05	Flat Receptacle
L19	In Vehicle at Stop							J06	Mix	H06	# 1 Box
L20	In Vehicle in Traffic							J08	Delivery/Collection	H07	# 1-1/2 Box
L21	Wait when Walking							J09	Loading	H08	# 2 Box
L24	Other Route							J10	Unloading	H09	1-Hand Slam
								J11	Setup	H10	Drop to Customer
								J12	Finger @ Delivery	H11	Gang Box
								T00	N/A	H12	Central Inside
								T01	Travel To 1 Delivery	H13	Central Outside
								T02	Travel b/t Delivery	H15	Collection Box
								T03	Travel b/t w/sort	H16	Multiple BoxType
								T04	Return to Unit	I01	Parking Unavail.
								T05	Walking	I02	Dog
										I03	Railroad Xing
										I05	Union
										I06	Construction
										I07	Weather
										I08	Stuck in Traffic
										K00	Jeep
										K01	LLV
										K02	1 or 2 Ton Truck
										K03	Pickup / Van
										K04	Walk – Push Cart
										K06	Bus – Public
										K07	Automobile
										K08	Elevator Passenger
										K09	Walking
										K10	Walk Flat
										K11	Walk Obstructed

										K12	Train / Subway
										K13	Service Elevator

LEVEL 10. LOCATION:

L00 N/A: Not Applicable was used to bypass this level when scanning barcodes
L07 Dock: Loading Dock at the Post Office
L08 Vehicle
L09 Park Point: The point where the vehicle is parked on Park and Loop routes
L10 Collection Box: Boxes located throughout the Postal territory used for mail deposit with scheduled pickup times.
L11 Relay Boxes: Look like collection boxes but are used on foot routes for relays of cased mail to be picked up by the carrier at the end of each walking loop.
L12 Point of Delivery
L13 On Route
L14 PBL: P, a personal location (i.e. going to the bathroom, Doctors Office, Home); B, taking an authorized break; and L, at a location for lunch
L15 Miscellaneous
L17 Gas Station: At a gas station servicing the vehicle
L18 In Unit walking
L19 In Vehicle at stop
L20 In Vehicle in Traffic
L21 Wait when Walking (i.e. waiting for an elevator, at a traffic light)
L24 Other Route (i.e. carrier casing another route, delivering another route)

LEVEL 11.1. PERSONAL OR ADMINISTRATIVE:

A00 N/A: Not Applicable was used to bypass this level when scanning barcodes
A01 Personal: Bathroom, Personal phone call, Doctors, Density
A02 Break: Official Breaks
B04 Union: Union Business

LEVEL 11.2. DELIVERY TYPE:

WT00 N/A: Not Applicable was used to bypass this level when scanning barcodes
WT01 Foot: Used on foot walkout routes or foot routes that used public transportation and relay boxes to acquire their mail
WT02 Curb: Mounted delivery with mailboxes located at curbside and serviceable from inside the vehicle
WT03 Park and Loop: The use of mounted delivery with restocking of a satchel and customers served from walking loops with restocking the arm and hand from the satchel.
WT04 Dismount: Serving one or more customers by dismounting and without use of a satchel
WT05 Central: Front, Top, or Back loading boxes accessed by a key opening a door that serve multiple customers, typically located inside for apartments and outside for neighborhood distribution centers

LEVEL 11.3. DELIVERY TYPE STATUS

S00 N/A: Not Applicable was used to bypass this level when scanning barcodes
S01 Business Inside: Serves to give additional information as to the type of delivery
S02 Business Outside: Serves to give additional information as to the type of delivery

S03 Residential Inside: Serves to give additional information as to the type of delivery
S04 Residential Outside: Serves to give additional information as to the type of delivery

LEVEL 11.4. ACTIVITY:
T00 N/A: Not Applicable was used to bypass this level when scanning barcodes
LEVEL 11.4.1. ACTIVITY DETAIL:
H00 N/A: Not Applicable was used to bypass this level when scanning barcodes

11.4 and 11.4.1 were scanned as a pair:
"Ts" identifying traveling were paired with Level 11.4.1"Ks" which identify the mode of travel (i.e. T01, Travel to first delivery point with a K01, LLV Long Life Vehicle).

LEVEL 11.4 ACTIVITY	LEVEL 11.4.1 ACTIVITY DETAIL
T01 Travel to first delivery point on route	K00 Jeep: Vehicle used to transport mail
T02 Travel b/t Delivery: Traveling between delivery points	K01 LLV: Long Life Truck used to transport mail
T03 Travel b/t w/Sort: Traveling between delivery points and simultaneously fingering and/or sorting the mail for deposit	K02 1 or 2 Ton Truck
T04 Return To Unit: Traveling back to the Post Office	K03 Pickup / Van: Pickup or Van
T05 Walking	K04 Walk Push Cart: Walking Pushing a cart that is used to transport mail
	K06 Bus / Public: Using a public bus as transportation
	K07 Automobile: Used to transport mail – contract vehicle (personal car)
	K08 Elevator Passenger
	K09 Walking
	K10 Walking Flat
	K11 Walking Obstructed – hills, snow, wet leaves
	K12 Train/Subway to go to/come from the route
	K13 Service Elevator

Level 11.4 "Ds" identified delays that were associated with the travel or on route and were typically paired with Level 11.4.1 "Is" (i.e. D05, Traffic/Detour with I06, Construction)

LEVEL 11.4 ACTIVITY	LEVEL 11.4.1 ACTIVITY DETAIL
D01 No access to box	I01 Parking Unavailable
D02 Vehicle Breakdown	I02 Dog
D04 Weather – Duck a tornado,	I03 Railroad Crossing
D05 Traffic/Detour	I05 Union
D06 No Work	I06 Construction
D08 Delay Specify - (write in log)	I07 Weather
D10 Wait for Collection (can not pick up before scheduled time)	I08 Stuck in Traffic

Level 11.4 "Js" identified delivery that were associated activities on route and were typically paired with Level 11.4.1"Hs" (i.e. J12, Finger at Delivery with H12, Central Inside)

LEVEL 11.4 ACTIVITY

J04 Parcels

J06 Mix – Letters, Flats, ADVOs - packet

J08 Delivery/Collection: The process of inserting mail and/or picking up mail

J09 Loading: Putting mail into vehicle

J10 Unloading: Taking empty trays, tubs, collected mail etc out of vehicle typically at the end of day

J11 Setup: Relocating mail form rear of vehicle to front, loading satchel

J12 Finger @ Delivery – the carrier is at the point of delivery and is fingering through the mail to verify the address is correct and collecting the mail to deposit

LEVEL 11.4.1 ACTIVITY DETAIL

H01 Illegal Mail Box: Too high / low, configuration, location

H02 1 Handed Slot: "One hand" can be used to put the mail through the slot

H03 2 Handed Slot: "Two handed slot" requires the carrier to hold the mail slot open with one hand and deposit the mail with the other hand.

H04 Slot below the knees: The mail slot is located so low the carrier must reach below the knees to insert the mail

H05 Flat Receptacle: Typically, two curled metal straps that accept rolled newspapers and flats outside of the mailbox

H06 #1 Box: The smallest sized Rural mailbox (typically the most common curb box)

H07 #1 ½ Box: The mid-sized Rural mailbox

H08 # 2 Box: The largest Rural mailbox

H09 1-Hand Slam: "One hand slam" delivery based on a flip-top type mailbox. The carrier delivers the mail to the box with a motion using one hand. In the reach to the box, the carriers' first motion is to open the box with a backhand flip upward then deposits the mail with a slam-dunking downward motion

H10 Drop to Customer: Refers to the carrier leaving the mail on a business counter or handing the mail to the customer

H11 Gang Box: A grouping of Rural mailboxes mounted side by side and sometimes in two rows. Commonly seen setups for mobile home parks.

H12 Central Inside

H13 Central Outside

H15 Collection Box

H16 Multiple Box Type: One address with multiple customer-names and slots for mail.

Level 11.4 "Fs" typically identified deliveries that required customer interaction on route and were typically paired with Level 11.4.1"Gs" (i.e. F03, Hardship with G04, Excess Words Customer)

LEVEL 11.4 ACTIVITY	LEVEL 11.4.1 ACTIVITY DETAIL
F01 Accountable	G01 Public Relations (offering condolence, good luck with, have you seen the new stamps, etc.)
F02 Parcel	G02 Service Rates: Describe a rate for a service
F03 Hardship	G03 Directions: Providing
F04 Delay Specify: Write in log	G04 Excess Words Customer
	G05 Excess Word Carrier

Appendix E

The following is a cover page of a 3999X set

01/01/1999 00:01 14402850815 R&PMINC PAGE 01/01

PS Form 3999X Examination of Letter Carrier Route

ZIP Code: _____ Unit : _____

Route # : _____ Carrier: _____

Check one on each line.
Route Type : Res Bus Mixed
Primary Delv: Crb P&L Dsmnt CBU
Vehicle : USPS Contract Other

		Time Begin	Odometer Reading
Reference Vol:			
Tot Cased Vol:	Return to Office		
Tot Delvd Vol:	Last Delivery		
Full Coverage Yes No	End Lunch		
Total Street Time:	Begin Lunch		
Minus Allied Time: (-)	First Delivery		
Net Delivery Time:	Begin Street		
PD's as counted :	Totals		
Deliveries Made : %			
PD's on 1621c :			
Park & Loop / Foot Routes # of Park Points:			
# of Rlys/Swings:			

Yes	No	N/A	Verification of:
			Form 4570
			Form 1564A
			Form 4584
			Form 1621c
			Forms 3982
			Form OF-346
			Valid State Lic.

Identify the Following:

Location	Begin	End
1st Break		
Lunch		
2nd Break		

Yes	No	Check these items: (Comments on each "No" response on attachment.)
		Does the carrier wear a regulation uniform?
		Does the carrier maintain the route book?
		Are CLASS labels installed on the case?
		Have vertical flat labels been installed on the case?
		Is there a final withdrawal from hot case?
		Is vehicle capacity adequate?
		Does carrier finger the mail properly?
		Does carrier take all of the obvious shortcuts?
		Does line of travel match the CLASS labels?
		Are travel patterns, relays, & park points set up efficiently?
		Does the carrier perform office & street duties in a safe manner?

Examined by: Date:

The following is a typical page from a 3999X set.

01/01/1999 00:04 14402850815 R&PMINC PAGE 01/01

Route ID: Worksheet Page: 1

Allied Function / Delivery Method	Time Start	Time End	Time Used	Delivery Number	Secondary Desg-Unit	Res 1 2 3 4	Bus 5 6 7 8	Det Box	Det NPU	ZIP+4 High	ZIP+4 Firm	Add Info
Use this space to describe functions performed on street time before arrival at the first delivery i.e. loading; travel to route; gassing of vehicle; comfort stop; park point location; relay, Express, or special delivery; etc.												

COCHISE CT				Time Enter:_____	Time Used:_____	Sec-Seg: 2519		
526		1						1
530		1						2
533		1						3
529		1						4
525		1						5
CHISHOLM TRL				Time Enter:_____	Time Used:_____	Sec-Seg: 2557		
542		1						6
548		1						7
554		1						8
CHISHOLM TRL				Time Enter:_____	Time Used:_____	Sec-Seg: 2517		
549		1						9
543		1						10
537		1						11
531		1						12
525		1						13
519		1						14
513		1						15
507		1						16
CHISHOLM TRL				Time Enter:_____	Time Used:_____	Sec-Seg: 2518		
506		1						17
512		1						18
516		1						19
520		1						20
526		1						21
532		1						22

PAGE 1	Residential	1:	22	2:	0	3:	0	4:	0	Det Box:	0
	Business	5:	0	6:	0	7:	0	8:	0	NPU :	0

Possible Deliveries: 22

Deliveries Made :

PS Form 3999X Examination of Letter Carrier Worksheet

The following is the final page from a 3999X set. ROUTE TOTALS at the bottom of the page were used the steps to classify a route.

01/01/1999 00:06 14402850815 R&PMINC PAGE 01/01

Route ID: [ ] ZIP Code: Worksheet Route Examination Page: 8

Allied Function / Delivery Method	Time Start	Time End	Time Used	Delivery Number	Secondary Desg-Unit	Res 1 2 3 4	Bus 5 6 7 8	Det Box	NPU	ZIP+4 High	ZIP+4 Firm	Add Info	
				15	APT 6	4				2160			224
				15	APT 7	4				2160			225
				15	APT 8	4				2160			226
				25	APT 9	4				2161		9-16	227
				25	APT 10	4				2161			228
				25	APT 11	4				2161			229
				25	APT 12	4				2161			230
				25	APT 13	4				2161			231
				26	APT 14	4				2161			232
				25	APT 15	4				2161			233
				25	APT 16	4				2161			234
				35		1							235
				37		1							236
				43		1							237
				45		1							238
				VALE AVE				Time Enter:_____		Time Used:_____		Sec-Seg: 2112	
				119		1							239
				125		1							240
				193		1							241
				195		1							242
				197		1							243
				N PARK AVE				Time Enter:_____		Time Used:_____		Sec-Seg: 2107	
				1335		1							244
				1333		1							245
				1329		1							246
				1325		1							247

PAGE 8								
Residential	1: 13	2: 0	3: 0	4: 11	Det Box: 0	Possible Delveries: 24		
Business	5: 0	6: 0	7: 0	8: 0	NPU : 0	Deliveries Made :		

PS Form 3999X Examination of Letter Carrier Worksheet

********** ROUTE TOTALS **********

Residential	1: 226	2: 5	3: 0	4: 16	Det Box: 0	Total Delveries : 247
Business	5: 0	6: 0	7: 0	8: 0	NPU : 0	Deliveries Made :

PS Form 3999X Examination of Letter Carrier Worksheet

Appendix F

1. Load time: Delivering and collecting mail pieces at residential and business delivery points. Also includes incidental time for customer contacts and the providing of special services.

Levels

10 Location	11.1 Personal & Administrative	11.2 Delivery Type	11.3 Delivery Type Status	11.4 Outside Activity	11.4.1 Activity Detail
On Route	N/A	Foot Route	Residential Inside	Delivery/Collection	# 1 Box
Point of Delivery		Curb Route	Residential Outside	Parcel	# 1-1/2 Box
Vehicle		Park & Loop	Business Inside	Finger @ Delivery	# 2 Box
		Dismount Route	Business Outside	Setup	1 Hand Slam
		Central Delivery			1 Handed Slot
					2 Handed Slot
	Forms			Accountable	Central Inside
					Central Outside
					Directions
					Drop to Customer
				Delay Specify	Excess Wrds Carr
					Excess Wrds Cust
					Flat Receptacle
					Gang Box
					Illegal Mail Box
					Jeep
					LLV
					Multiple Box Type
					N/A
					Parking Unavailable
					Public Relations
					Service Rates
					Slot below knees
					Walk Flat
					Walk Obstructed
					Walking

2. Street Support time: The part of street time spent on activities such as traveling to and from the route, to the carriers' station, obtaining and loading the vehicle, and preparing mail in bulk at the vehicle and at relay boxes.

Levels

10 Location	11.1 Personal & Administrative	11.2 Delivery Type	11.3 Delivery Type Status	11.4 Outside Activity	11.4.1 Activity Detail
Dock	N/A	Foot Route	Residential Inside	Loading	1 or 2 Ton Track
Gas Station	Subject Break	Curb Route	Residential Outside	Unloading	Automobile
Vehicle	Subject Personal	Park & Loop	Business Inside	Setup	Bus – Public
P B L		Dismount Route	Business Outside	Travel to 1st	Central Inside
On Route		Central Delivery		Return to Unit	Central Outside
Relay Box				Delay Specify	Collection Box
Park Point					
Collection Box					Directions
Misc.					Excess Words Carr
					Jeep
					LLV
					Mat'l Handling
					Multiple Box Type
					N/A
					Parking Unavail
					Pickup / Van
					Public Relations
					Train / Subway
					Union
					Walk Flat
					Walk Obstructed
					Walkg Push Cart
					Walking

3. Driving time: Driving vehicles on all portions of letter routes other than the curbline portions. Also includes time spent driving to stop locations (deviations). It does not include the time spent by the carrier after stopping the vehicle and leaving it.

Levels

10 Location	11.1 Personal & Administrative	11.2 Delivery Type	11.3 Delivery Type Status	11.4 Outside Activity	11.4.1 Activity Detail
Vehicle	N/A	Foot Route	Residential Inside	Travel between Deliveries	1 or 2 Ton Track
In Vehicle at stop	Forms	Curb Route	Residential Outside	Traffic/Detour	Automobile
On Route	Supervisor Instruct	Park & Loop	Business Inside	Delay	Bus - Public
Park Point		Dismount Route	Business Outside	Vehicle Breakdown	Central Inside
Misc		Central Delivery		Setup	Construction
					Drop to Customer
					Excess Wrds Cust
					Jeep
					LLV
					N/A
					Pickup / Van
					Railroad Xing
					Stuck in Traffic
					Walkg Push Cart

4. Route/Access FAT time: The time spent by carriers walking on the foot and park and loop portions of routes. Also includes the time spent accessing stops; that is, walking up to a residential and/or business delivery point to deliver and collect mail pieces.

Levels 10 Location	11.1 Personal & Administrative	11.2 Delivery Type	11.3 Delivery Type Status	11.4 Outside Activity	11.4.1 Activity Detail
On Route	N/A	Foot Route	Residential Inside	Travel between deliveries	1 Handed Slot
Misc		Park & Loop	Residential Outside	N/A	Central Inside
Wait while walking		Dismount Route	Business Inside	Accountable	Dogs
		Central Delivery	Business Outside	Parcel	Elevator - Passn
					Jeep
					LLV
					Mat'l Handling
					N/A
					Service Elevator
					Walk Flat
					Walk Obstructed
					Walkg Push Cart
					Walking

5. Route/Access CAT time: Vehicle driving time on the curbline portions of routes. Also includes the time spent driving up to curbline stops to load mail into and to collect mail from customer boxes.

Levels 10 Location	11.1 Personal & Administrative	11.2 Delivery Type	11.3 Delivery Type Status	11.4 Outside Activity	11.4.1 Activity Detail
Vehicle	N/A	Curb	N/A	Travel between Deliveries	1 or 2 Ton Track
In vehicle at stop			Residential Outside	Traffic/Detour	Construction
On Route			Business Outside		Dogs
In vehicle traffic				Delay Specify	Jeep
Misc.					LLV
					N/A
					Railroad Xing
					Stuck in Traffic
					Walk Flat
					Walk Obstructed
					Weather

6. Collection time: The time spent walking up to and sweeping Express mail and non-Express mail collection boxes. The time spent driving vehicles up to the collection stops is included in Driving Time, as discussed above.

Levels

10 Location	11.1 Personal & Administrative	11.2 Delivery Type	11.3 Delivery Type Status	11.4 Outside Activity	11.4.1 Activity Detail
Collection box	N/A	N/A Foot Route Curb Route Park & Loop Dismount Route Central Delivery	N/A Residential Inside Residential Outside Business Inside Business Outside	Deliver/Collect Setup Unloading Wait for collection	N/A Collection box Central Walk flat