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BEFORE THE

POSTAL RATE COMMISSION

WASHINGTON, D.C. 20268-0001

POSTAL RATE AND FEE CHANGES, 2000

Docket No. R2000–1

DIRECT TESTIMONY

OF

LINDA A. KINGSLEY

ON BEHALF OF THE

UNITED STATES POSTAL SERVICE

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Direct Testimony

of

Linda A. Kingsley

Autobiographical Sketch

My name is Linda A. Kingsley. I have been the Manager, Operational Requirements within Operations Planning since January 1998. My office serves as the focal point for operations planning related to operational impacts of rate and mail make-up issues. We interface with pricing, finance, acceptance, and customers to evaluate and implement various internal and external rate and mail make-up proposals. Specific responsibilities include assisting in the development of mail make-up requirements for compatibility with operational processing, determining operational impacts resulting from rate and mail classification cases, and preparing the field for the expected changes.

I joined the Postal Service in 1985 as an Industrial Engineer Trainee in the Central Region Headquarters located in Chicago, IL. I subsequently was promoted to Industrial Engineer at the North Suburban Illinois Field Division. As an Industrial Engineer, I worked on methods improvements, implementation of sector/segmenting, and workroom floor layouts for mail processing and delivery services. In 1989, I came to the Office of Rates at Postal Service headquarters where I appeared before the Postal Rate Commission in Docket No. R90-1 as witness Callies. I presented cost support testimony in that docket for the Postal Service's letter automation and carrier route presort discounts.

In 1992 during reorganization, I moved to the Office of Processing Policies and Programs where I was the group leader for letter automation issues. We coordinated with other functions to develop training materials and sessions to implement Delivery Point Sequencing across the country. I became an Operations Support Specialist in 1993 in the Western Area Inplant Support office in Denver CO. While at the Western Area, I primarily implemented and refined DPS and RBCS processing for Processing and Distribution Centers and Facilities. I was also on two

temporary assignments as Acting Manager, In-Plant Support in Reno, NV and Acting Plant Manager, Linthicum, MD Incoming Mail Facility.

I have a Bachelor of Science Degree in Industrial Engineering from the University of Wisconsin – Madison and a Masters of Business Administration Degree from the University of Maryland at College Park.

I. Purpose of Testimony

The purpose of my testimony is to provide operational support for various elements of the Postal Service's proposals. In Chapter Two, I provide an overview of the Postal Service's processing operations for the current environment, the test year, and beyond. I specifically address:

1. Basic processes by shape;
2. Types and capabilities of equipment;
3. Equipment deployments and processing changes planned through the test year and beyond; and
4. Progress of our automation program in response to the predicted increases of barcoded volume over the last three years.

In Chapter Three, Staffing and Complement are discussed; specifically, how they are determined in both the short and long-term, and how changes in staffing relate to changes in volume and productivity. Chapter Four discusses our approach to ensuring sufficient workspace to sustain efficient processing operations.

I am not presenting any workpapers or Library References in this case.

II. Processing Operations

In this part of my testimony, I will provide an overview of our processing operations. I focus on the equipment and methods we use to process more mail in automated and mechanized operations. Since we process letters, flats, and parcels as distinct mailstreams, each one is discussed separately.

A. Letter and Card Mail Processing

1. Preparation

The focus of letter mail preparation operations is to sort letters and cards into barcoded, non-barcoded automation compatible, and non-automation compatible separations, whether trayed, bundled, or single piece (such as collection mail).

The operation where collection mail is prepared is often referred to as "010"[1], and encompasses the culling and facing of mail by shape and indicia. This is where letters, flats and parcels get separated for subsequent handling. Bundles and trays of metered letters and flats are forwarded directly onto sortation equipment, while stamped mail first gets faced and canceled. Hampers of single-piece collection mail get dumped into the feed system for the Advanced Facer Canceller System (AFCS) described further in the Equipment section below. This machine culls out non-letter sized pieces (over 6 1/8 inches tall, over ¼ inch thick, or over 11 ½ inches long), faces the piece based on the meter, stamp or Facing Identification Mark (FIM)[2] location, and cancels the mail. If a meter, stamp, or FIM is not detected, then the piece goes to the AFCS reject stacker.

The volume arrival profile of collection mail into the 010 operation is dependent upon the arrival of trucks at the plant from stations, branches, associate offices, and collection runs. Due to varied distances and demographics, the arrival profile varies by facility, and may vary by day depending on volume, weather, or

[1] "010" refers to MODS (Management Operating Data System) operations 010-019 for volume and workhour reporting.

[2] FIM is the series of vertical bars to the left of the postage area on courtesy reply (FIM A) and business reply mail (FIM C) indicating the letter is barcoded.

time of the week or month. The status of the outgoing mail preparation operation dictates whether the subsequent operations are going to meet the operating plan's clearance times (the time processing must be completed), since none of the outgoing operations can be finalized until the 010 operation is clear of volume.

Letter mail is also received from sources other than collections. The Business Mail Entry Unit (BMEU) supplies mail at origin. At destination, the primary sources are presorted mail from mailers and mail sorted by origin postal facilities.

2. Equipment

Our letter processing equipment is geared towards the strategy of getting as much letter volume as possible barcoded and sorted to Delivery Point Sequence (DPS)[3] or carrier route on automated equipment. All letter sorting equipment sorts into bins that have to subsequently be manually swept into letter trays. Thereby, allowing processing to commence without first setting up trays.

- The Advance Facer Canceller System (AFCS) - The AFCS faces, cancels, and separates letters and cards into Optical Character Reader (OCR) readable (or enriched), prebarcoded with FIMs A and C, and "all other", which we usually call script. AFCSs have received the Input Sub System (ISS) modification to also capture and store images of script mail for the Remote Bar Coding System (see RBCS below). AFCS image lift of script mail has reduced the pressure on the outgoing OCR operation, thereby easing the constraints on the outgoing processing window and allowing incoming processing to start earlier. The AFCS can also lift images of OCR-readable pieces; it is however, currently more efficient to first send the pieces to the OCR for attempted resolution. Throughput of the 1,086 AFCSs is approximately 32,000 pieces per hour and the staffing index is one mailhandler per machine.
- Letter Sorting Machines (LSMs) - The growth in barcoded letters has allowed us to remove almost all of the letter mechanization equipment. As the Postal Service's letter automation program has matured, the value of LSMs to

[3] DPS provides letters to the carrier in walk sequence of the route, thereby eliminating the need for the carrier to case letters in walk sequence in the office.

operations has greatly diminished. Only seven machines currently remain nationwide. Removal of letter mechanization equipment has simplified letter mail flows and improved service due to the enhanced quality of automation.

- Multiline Optical Character Reader (MLOCR) — Non-barcoded letters are fed through the MLOCR to obtain a postal applied barcode. A total of 875 MLOCRs are deployed. No additional deployments are planned, but several enhancements since Docket No. R97-1 have been added, including a Grayscale Camera, a co-directory lookup, and a co-processor. The Grayscale Camera facilitates better image capture and recognition (256 shades of gray instead of just black and white) while the co-directory and co-processor augment the address matching process through redundancy. These enhancements have improved the overall encode rate of the MLOCR and reduced the amount of mail that obtains a barcode through Remote Bar Coding. Throughput of an MLOCR is approximately 29,000 pieces per hour with a staffing index of two clerks, one feeding and the other sweeping the stackers.
- Low Cost MLOCR — This machine is a result of a Delivery Barcode Sorter modification that enables it to function as a MLOCR (see DBCS below). This equipment currently does not have a co-processor, co-directory, nor image lift capability. As of October 1999, 101 machines have been deployed to the field with no current plans for additional purchases. Deployment was targeted to sites to replace outdated Single Line OCRs (SLOCRs). SLOCRs cannot apply a Delivery Point Bar Code (DPBC) and are no longer compatible with our automation requirements. The throughput of the low-cost OCR is the same as a DBCS, 37,000 pieces per hour, and the machine also is staffed with two clerks.
- Remote Bar Coding System (RBCS) — RBCS has three distinct components: the Input Sub System (ISS), the Image Processing Sub System (IPSS), and the Output Sub System (OSS). The ISS, which consists of a retrofitted MLOCR (MLOCR-ISS) or a retrofitted Advanced Facer Canceller System (AFCS-ISS), is used to "lift images" of non-barcoded letters. A fluorescent ID tag is sprayed on the back of the mailpiece and an electronic image of the mailpiece is forwarded to the IPSS. The IPSS is the computer system, which controls the image flows,

contains the barcode result information, and communicates with the Remote Encoding Center's (REC) system. While in the IPSS, the image may be resolved through the use of a Remote Computer Reader (RCR)[4]. If not resolved, it will be forwarded on to a REC where an operator keys the address information into a computer. Once the address is resolved to the depth of sort required (for example, 5, 9 or 11-digits), the mailpiece is fed back through the OSS. The OSS is a retrofitted Mail Processing Barcode Sorter (MPBCS-OSS) or DBCS (DBCS-OSS), where the fluorescent ID tag is read and the barcode information is accessed from the IPSS to apply the barcode to the piece. RBCS is fully deployed to 287 plants. As of November 1999, there were 53 RECs. The high proportion of Transitional Employees (TEs) at RECs allows for timely staffing reductions as RCR improvements are made.

- Delivery Bar Code Sorter (DBCS) — This machine is used for processing letters already barcoded either by the OCR, RBCS, or our customers. The DBCS comes in multiple configurations; most machines have between 190 and 220 sortation bins. The original intent of the DBCS was solely to sequence barcoded letters already sorted to the 5-digit level into the carrier's delivery sequence in two passes. Due to the greater number of sort stackers compared to the MPBCS, the DBCS is often also used for both outgoing processing, thereby reducing the amount of barcoded mail flowed to outgoing secondary operations, and for incoming primary sortation. The DBCS deployment is almost complete with a total of over 4,850 sorters currently operational with an additional 270 scheduled to complete deployment by September 2000.

  As the automation workhorse, some DBCSs have undergone changes to better fit specific processing needs. Additional stackers have been added to some machines to accommodate the growth in delivery points and volume for DPS. By November 2000, 892 of the over 5100 total DBCSs will be retrofitted as

[4] RCR is an off-line optical character recognition device that is part of RBCS. It uses advanced recognition techniques and the additional time available because it operates off-line to resolve script and other unresolved images. RCR currently reduces keying work by 55 percent.

OSSs for RBCS. The ultimate retrofit currently available is the DIOSS, a combination of DBCS/OCR/ISS/OSS in one machine. One DIOSS is currently in first article testing with 210 expected to be in operation by September 2000 by adding kits to existing DBCSs. The throughput for the DBCS is approximately 37,000 pieces per hour and the staffing index is two Mail Processor clerks.

- Carrier Sequence Bar Code Sorter (CSBCS) — This machine is located in delivery units and is used for Delivery Point Sequencing. The CSBCS can sequence barcoded letters and cards already sorted by carrier route into delivery sequence order in three passes. Letters are processed one to six carrier route(s) at a time because the number of bins (17 or 21) can only support a limited number of delivery points and volume. The deployment of 3,732 CSBCSs was completed in March 1997 with no additional deployments planned. Throughput is approximately 19,000 pieces per hour with a staffing index of one.
- Mail Processing Bar Code Sorter (MPBCS) — This machine is a generation prior to the DBCSs, with 96 bins, and is used primarily for outgoing primary and incoming primary processing. There are 1,369 MPBCSs deployed with no plans for additional machines. Throughput for a MPBCS is approximately 35,000 per hour, and staffed by two Mail Processor clerks.
- Letter Mail Labeling Machine (LMLM) – This machine applies a white label to either the front of a letter to provide a barcode clear zone or to the back of the letter for application of a clean, readable, fluorescent ID tag. The LMLM allows more mail to remain in the automated mail stream by providing another opportunity to put a clean, readable, barcode on the piece. This is particularly important if the OSS applies a barcode over graphics or writing on the letter, resulting in an unreadable barcode. Pieces are also "pre-LMLMed" when machinable, yet too glossy for the barcode to be applied without smearing. There are 360 LMLMs deployed with an approximate throughput of 20,000 pieces per hour and staffed by one clerk.
- ID Code Sortation (ICS) – Deployment has begun for ICS systems on BCSs, which allow sortation of the piece using the ID tag as well as the POSTNET barcode. The system provides a redundant opportunity for sorting the piece. If

the barcode becomes unreadable for any reason, the BCS will look for an ID tag. If an ID tag exists, it will look up the unique tag (every piece in the national system is unique for each month) in the national database for the delivery point or barcode information associated with the piece. The BCS will then sort the piece to the correct stacker based on the destination information from the database. Deployment is scheduled for completion in December 2000 and will eliminate the need for the LMLM to finalize unreadable POSTNET barcode results from RBCS.

- Tabbing Equipment – In an effort to continue moving the last portion of letter volume to automation and DPS, some facilities have purchased letter tabbing equipment. This equipment is used to place a clear tab on the letter to seal a non-automation compatible piece, making it automation compatible. Thirty-eight sites currently have tabbing equipment, which has throughput of approximately 15,000 pieces per hour, and staffing of one clerk. Labeling provisions have been made for mailers who do not want their mail pieces tabbed thus keeping their pieces in manual operations.

3. Manual

The volume that is still left in manual letter operations is primarily composed of pieces that are deemed to be non-machinable on automation due to one of several factors. The piece may be an untabbed booklet, too flimsy (consequently resulting in damage by the equipment), certified mail (efforts are made to keep certifieds from getting into the DPS mail stream), a glossy postcard (we do not want to LMLM the front and the back, covering someone's message), a letter containing a stiff enclosure (disc or pencil), a piece with an aspect ratio falling outside the requirement, or one where the mailer did not want the piece tabbed or LMLMed. Manual letters are considerably more costly to process than automation compatible letters, as shown in the Staffing and Complement chapter.

Rejects from automation also end up in the manual operation. The pieces may have been rejected due to an unreadable barcode or due to an insufficient 5 or 9-digit barcode for DPS processing. For example, the street directional (North or

South) or suffix (St, Rd, Dr) may be missing, yet is required for coding to the delivery point when duplication exists in the address range. Many of these rejects arrive in manual operations close to clearance time in order to meet dispatches as automated operations sweep their stackers, including the reject stackers. Manual cases are staffed to sort the somewhat uncertain volumes of automation rejects in order to meet the transportation dispatch schedules and, ultimately, the service commitments.

4. Automation Update

The volume of barcoded letter mail has grown dramatically; 88.3 percent of all letters were barcoded in AP 13, FY 99. Customer incentives have produced substantial growth in prebarcoded letters. As of AP 13, FY 99, mailer applied barcodes comprised almost 71 percent of the total letter mail barcodes. The remaining 29 percent were applied by the Postal Service with MLOCRs and RBCS. The mailer share of total barcoded letters greatly exceeds our original projections.[5]

Our corporate objective continues to be that barcoded letters will be sorted to DPS for zones having 10 or more city routes and/or rural routes with city style addressing. Zones having five to nine routes will receive automated sortation to the carrier route level. Some zones with fewer than 10 routes may also receive DPS as a result of local decisions.

By the end of FY 99, there were over 174,000 routes on DPS and 76 percent of all 11-digit barcodes were sorted to DPS. Processing & Distribution plants processed 93 percent of their total incoming secondary (sortation to the carrier) letter volume in automated operations, a three-percentage point increase over FY98.[6] Of the incoming secondary distribution performed on automation, 78 percent

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[5] In 1989, the Postal Service projected, that in a "full-up" automated letter environment, at least 40 percent of the barcodes would be applied by mailers, 40 percent applied by Optical Character Readers (OCRs), and the remaining 20 percent would be applied by Remote Bar Coding Systems (RBCSs).

[6] This is determined at the incoming secondary level by dividing the number of piece handlings in automated operations by the piece handlings in all incoming secondary operations.

was to DPS, 4 percent to sector/segment, 16 percent to route, and 2 percent to 5-digit. Sector/segment operations sort to the ZIP+4 and are usually for high-rises and garden-style apartments where the new encoding software mentioned below has not yet allowed for DPS coding.

Our delivery units have worked closely with plants to increase the amount of DPS mail. They have worked together to identify and capture Enhanced Carrier Route (ECR) letter bundles and trays to incorporate these pieces into the carriers' DPS mail, thus eliminating the need for manual casing. As postal barcoding of non-barcoded ECR letters has become common practice and as the number of DPS zones has increased, the value of ECR letters continues to diminish. The mail processed to DPS on DBCSs needs only to be sorted to the 5-digit level, so the carrier route sortation provides no added value in these situations. The Postal Service is again proposing that pricing of the ECR Basic letter continues to reflect its reduced value to operations when compared to automation 5-digit presort. Automation ECR still has value for zones processed both manually and to DPS on CSBCSs.

Looking towards the test year, the amount of DPS volume will continue to increase as software to improve multi-coded addresses such as high-rises continues, and ICS deployment reduces automation rejects.

5. Description of Future System

The letter automation program is almost fully deployed, with completion expected by the Test Year. However, continuous improvements in image recognition technology, such as RCR, will continue to be pursued. The RCR read rate is expected to improve from the 55% achieved today to as much as 80% by 2001. Improved read rates will further reduce the number of RECs, as fewer images will need to be keyed for barcode resolution. By September 2000, the number of RECs is planned to be reduced from a high of 55 to 40.

The addition of the Mail Cartridge System (MCS) to the DBCSs is currently planned to commence near the end of FY 2001 into FY 2002. The MCS will eliminate sweeping and second pass ledge loading for DPS processing.

B. Flat Mail Processing

This portion of my testimony is devoted to piece distribution operations where individual flats are processed. The processing of packages of flats in opening unit operations is covered later in my testimony, under parcels and bundles.

1. Preparation

Depending on the class of mail, flats destined for piece distribution operations can originate from several different operations. First-Class metered or permit flats that are prepared in flat tubs by mailers generally can be sent from the platform or BMEU directly to flats sorting operations. Flats obtained through collection mail and that subsequently go through the 010 operation are faced, canceled (if necessary), and trayed before they are sent to flats sorting operations. Flats that originate from opening unit operations must also be "prepped" before they can be inducted in mechanized piece distribution operations. Depending on where the prepping is performed, prepping consists of unloading containers, separating the mail for subsequent operations, removing the packaging material, orienting, and stacking the flats in postal containers or on ledges of the flat sorter machine. All of the prepping operations are performed manually and are labor intensive.

Most of the flats, with the exception of those in mailer-prepared carrier route presort packages, receive some level of processing on flats sorting equipment.

2. Equipment

There currently are two different types of equipment used in the Postal Service to process flats, and there are plans to begin deployment of a third type early next calendar year. The three types of machines are listed below.

- Multi-Position Flats Sorting Machine (FSM 881) —This machine is currently the primary piece of equipment used for processing flats. There are 812 machines deployed, and each machine has four induction stations and 100 bins. This past year, all of the FSM 881s were retrofitted with OCRs that can read the addresses on flats. All of the FSM 881s were already equipped with barcode readers (BCRs), so the new OCR modification allows us to sort the vast majority of flats

across the FSM 881 without the use of employee keying. The FSM 881 sorts the piece based on the address read by the OCR, but does not spray a barcode on the piece. The throughput of the FSM 881 is approximately 6,500 pieces per hour for BCR/OCR operations, and the maximum staffing requirement is six employees. There are no plans to purchase additional FSM 881s.

- Multi-Position Flats Sorting Machine (FSM 1000) —This machine is intended to process a vast majority of the 25 – 33 percent of non-carrier route flats that are non-machinable on the FSM 881. Prior to the deployment of the FSM 1000, the non-machinable flats had to be processed in manual operations. There are 340 machines deployed, and each FSM 1000 has four induction stations and 101 bins. This past year, all of the FSM 1000s were retrofitted with a BCR and can now sort flats using mailer-applied barcodes. It is probable that an OCR modification will be added to the FSM 1000 in the future, but deployment currently is not scheduled before FY 2002 at the earliest. The throughput of the FSM 1000 is approximately 5,000 pieces per hour in BCR operations and the maximum staffing requirement is six employees. There are no current plans to purchase additional FSM 1000s.
- Automated Flats Sorting Machine 100 (AFSM 100) — This machine represents a first step into the future processing environment that is envisioned for flats. A first phase deployment of 175 machines is scheduled to begin in St. Paul, MN in March 2000. The processing and technological capabilities of this machine are vastly superior to those of the FSM 881 and FSM 1000. The machine has three automatic feeders and can sort to 120 bins, with the possibility of future expansion to more bins. It has both BCR and OCR capability, as well as on-line video coding for the OCR rejects. While it is envisioned that the AFSM 100 will ultimately replace the FSM 881s, the first phase of deployment is primarily intended to supplement our existing flat sorter equipment by providing needed flats sorting capacity. A second phase of approximately 400 additional AFSM 100s is also planned to start at the end of FY 2001, and is intended to facilitate the transition to the future flats processing environment that is discussed later in my testimony. The throughput of the AFSM 100 is approximately 17,000 pieces

per hour, and the staffing is 6-9 employees (including video encoding keyers) depending on the readability of the mail.

Unlike letter sorting equipment, all three FSMs sort mail directly into flats trays, or tubs.

3. Processing / Mailflow

As I noted earlier, the FSM 881 is the primary piece of equipment used for processing flats in today's environment. Since most of the flats that require piece distribution are machinable on the FSM 881, field sites typically flow flats to that machine first. In the BCR/OCR mode, the reader scans the mail piece in search of a barcode. If a POSTNET barcode is found, the piece is sorted based on the information read by the BCR. If a POSTNET barcode is not found, the OCR scans for the delivery address and the piece is subsequently sorted based on the information returned by the OCR. Flats that contain extraneous information or addresses that cannot be read by the OCR must be keyed or worked manually.

Flats that are non-machinable on the FSM 881 are diverted to the FSM 1000. In some cases, the FSM 1000 is also utilized as an "extra FSM 881" to process machinable flats because of a lack of FSM 881 capacity. Because the FSM 1000 is able to process a wider variety of flats, flats processed on the FSM 1000 do not flow to an FSM 881 for subsequent operations. The FSM 1000 has helped reduce the volume of mail that is processed in manual operations.

As noted in the equipment section, the staffing requirements for both the FSM 881 and FSM 1000 are identical. At full capacity, each machine requires six employees - four for induction and two for sweeping bins, clearing jams, and/or loading ledges. Each machine also has the flexibility to operate with less than six employees in light volume periods. However, the setup and pull down times per machine remain fairly constant between tours and operational runs, no matter whether the number of pieces processed is 5,000 or 50,000.

The deployment of the AFSM 100 will significantly impact our current mail flows. Although the machinability specifications have not been finalized, they are expected to be comparable to the FSM 881. Accordingly, as the AFSM 100s are

deployed to field sites, they will become the primary choice for the processing of machinable flats, and local sites will adjust mail flows appropriately.

Plants that initially receive the AFSM 100s will try to process as many flats as possible through that machine and will use the FSM 881s secondarily. Plants that do not initially receive an AFSM 100 will continue to use the FSM 881 as their primary machine for processing flats. Ultimately, the volume of mail that will continue to be processed on FSM 881s will vary, depending on local site mix of 881s, 100s, and 1000s. As the number of AFSM 100s increases in the field, so too will the AFSM 100's percentage share of the overall flats processed. FSM 881s will be relocated to smaller sites that do not have flats sorting equipment or lack sufficient flats sorting capacity today.

The shift of more incoming secondary distribution from manual to automated operations is one of the biggest changes that will result from the deployment of the AFSM 100s. The throughput of the AFSM 100 is approximately 2 to 3 times higher than that of the FSM 881. As a result, facilities will have a greater opportunity to do incoming secondary processing for more zones and much of the distribution that is being performed manually in delivery units will be automated in plants. With that in mind, the Postal Service is attempting to smoothly begin the second phase of AFSM 100 deployment right after phase one deployment is complete in order to automate incoming secondary processing for more zones.

While all specifics have yet to be finalized, it is anticipated that with the AFSM deployments, the zones that will receive incoming secondary processing on the FSMs will generally be the zones with 10 or more carrier routes.

4. Manual

Flats that remain in manual operations at the plant today (other than for incoming secondary processing) are pieces that do not meet the processing specifications for the FSM 1000 or are rejects from that machine. Examples of these types of flats include rolls, lightweight pieces, or pieces that are not uniform in thickness. There are also heavy volume periods where our existing shortfall in flats sorting capacity results in some flats, that could otherwise be processed on the FSM

881 or FSM 1000, being processed in manual operations. Typically, this occurs when flats sorting equipment is at full capacity and the mail must be processed manually in order to ensure that service standards are met.

Decentralization of manual flat incoming secondary operations from the plant to the delivery units has occurred due to FSM capacity, service, scheme training, and/or space considerations. Very few delivery units have an FSM, so the vast majority of the incoming secondary processing at the delivery units is manual.

While there will undoubtedly always be some mail in manual operations such as the types listed earlier, the AFSM 100 will help reduce the overall amount of mail in manual operations by providing needed additional FSM capacity.

5. Automation/Mechanization Update

The percentage of non-carrier route presort flats barcoded by mailers has continued to grow. At the end of FY 96, approximately 43 percent of all non-carrier route flats were barcoded. The number of barcoded flats increased substantially in FY 1997, with approximately 60.4 percent of all non-carrier route presort flats bearing a barcode. The rate of growth slowed subsequently, and the percentage of non-carrier route flats bearing a barcode ended FY 1998 and FY 1999 at 65.7 percent and 66.8 percent, respectively. With over two-thirds of flat mail barcoded and deployments of the OCR modification to the FSM 881 and the BCR modification to the FSM 1000, there has been a reduction in the number of flats keyed on flat sorters. The equipment modifications have also helped to improve the utilization of barcodes in incoming secondary operations compared to prior years' numbers. However, the utilization in incoming secondary operations remains relatively low when compared to letters, and it highlights the need for additional flats sorting machine capacity. In AP 13, FY 99, Processing and Distribution plants processed 48 percent of their total incoming secondary flat volume using the BCR/OCR on flat sorters, a 13 point increase over the same period last year (SPLY). Keying operations on the flat sorter accounted for an additional 12 percent of their total incoming secondary flat volume. The net result was that 60 percent of the total

incoming secondary volume in plants was processed on flat sorters.[7] A contributor to the increase of volume on FSMs has been an increased focus due to the establishment of machine utilization targets earlier this year, in the interest of improving the overall usage of flats sorting machines. Mailer-applied barcodes also have contributed to the increased incoming secondary volume on FSMs.

Although the incoming secondary numbers indicate that there is room for improvement, it is also important to recognize that just because a barcode was not utilized in an incoming secondary operation does not mean it was not utilized at some other point(s) in the network. For example, a barcode may have been utilized at the incoming primary level, but was not utilized at the incoming secondary level because the incoming secondary distribution for that specific ZIP Code is performed at the delivery unit. The majority of incoming secondary distribution of flats is performed manually in delivery units in the current environment largely because of the shortfall in mechanized flats sorting capacity. Another reason for processing incoming secondary flats at the delivery units could be service, depending on the mail arrival time at the plant, FSM operating window, and/or transportation to the delivery unit. Scheme training is also more difficult to maintain at the plant than at the delivery unit, especially with growth in the number of deliveries. Later, I will discuss how the deployment of the AFSM 100s will cause more incoming secondary flat distribution to move from manual to automation.

For the most part, the deployments of the OCR on the FSM 881 and the BCR on the FSM 1000 have resulted in positive improvements for processing operations. However, two significant processing concerns have surfaced as a result of these deployments. The concerns are separate and distinct issues, but both of them are related to the makeup and preparation of the mail.

The first concern is related to the OCR on the FSM 881. Field sites have reported that the OCR may have trouble recognizing the delivery address on a mail piece when a flat contains other information on the same side as the delivery

[7] This is determined at the incoming secondary level by dividing the number of piece handlings in flat sorter operations by the piece handlings in all incoming secondary operations at plants.

address. The OCR has difficulty discerning the intended delivery address and may interpret a portion of the incidental information as the delivery address. Likewise, when a return address is more prominent (e.g., font size, print quality) than the delivery address, the OCR may interpret the return address as the delivery address. The presence of a barcode facilitates identification of the address block, which helps the OCR discern the delivery address if the barcode was not readable for some reason. However, because not all flats bear barcodes, field sites closely monitor the flats that come through FSM 881 operations and use discretion to determine whether to process non-barcoded pieces on the OCR or to key them. The Postal Service has published articles in mailer publications and has worked with mailers locally regarding the proper OCR standards for flats, but it appears more educational efforts or additional standards are needed.

The other concern relates to the deployment of the BCR on the FSM 1000 and the extension of the barcode discount to FSM 1000 sized pieces. Since the implementation of Docket No. R97-1 rates, field sites have noticed a proliferation of parcels being prepared as FSM 1000 flats. Because the FSM 1000 can process flats up to a maximum thickness of 1¼ inches, the Postal Service has expanded the definition of what may qualify as an automated flat. While this expanded definition may reflect the physical capabilities of the FSM 1000, it is not congruent with the manner in which field sites are actually using the machine. These pieces are often still considered parcels and are not mixed with flats during processing. Similarly, the expanded definition of an automated flat is in conflict with the standard processing category dimensions for a flat.

Generally, processing operations work in accordance with the processing category dimensions contained in the DMM. The dimensions in section C050 set the maximum thickness for a flat at ¾ inches. As a result of the residual shape surcharge implemented after Docket No. R97-1, mailers have started using the expanded thickness definition of an automated flat as an opportunity to avoid the surcharge and are preparing their parcels as packages of flats. The irony of this situation is that the pieces are paying less postage but are usually incurring more handling. Prior to the implementation of the residual shape surcharge, many, if not

all, of these pieces were prepared as machinable parcels. As machinable parcels, these pieces were processed through the BMCs on parcel sorters and sorted to 5-digit. Although these parcels are now prepared as packages of flats, many of them can no longer be processed directly to 5-digit on the BMCs' parcel sorters. In some cases, the strapping material is being removed in order to process the individual pieces as parcels on the parcel sorters. However, in most cases the bundles are sorted manually or on Small Parcel Bundle Sorters at the BMCs to 3-digit or SCF separations. Consequently, this has become new workload for the plants since much of this mail would have bypassed plant operations when the BMCs sorted it to 5-digit. To compound the matter, plants generally do not sort parcels on the FSM 1000, and therefore must sort these pieces manually to the 5-digit level. The reasons that these parcels are not sorted on the FSM 1000 vary, but the primary ones are the incompatibility with the flats mail stream and the impact on downstream delivery operations. It is difficult to sort and handle the smaller, thicker parcels with larger, thinner flats. Although these pieces may be prepared as packages of flats, employees in both processing and delivery offices, for the most part, continue to treat and handle them as parcels.

6. Description of Future System

The AFSM 100 is the first step into the flats processing environment beyond the test year. Ultimately, the Postal Service plans to pursue sorting flats to DPS. Currently, the value of DPS flats to operations is being reviewed and explored. While there are details yet to be resolved, it is envisioned that the Postal Service may DPS flats with different types of equipment. The AFSM 100, or a machine similar to it, will be used to process and sequence flats that are not carrier route sorted by mailers. Flats that are not machinable on the AFSM, or similar machine, are not likely to be included in the DPS process. Another piece of equipment necessary to place flats into DPS may be a bundle collator. If this piece of equipment proves economically justifiable, it will be used to collate, or merge, the DPS flat bundle from the AFSM with multiple packages of flats that have been sorted to carrier route in walk sequence by mailers. There will likely be two

significant changes for mailers as the Postal Service moves toward a DPS environment for flats. First, all flats that claim the barcode discount will likely be required to bear an 11-digit barcode, similar to letters. Second, the flats within all carrier route sorted packages will be required to be prepared in walk sequence. Emphasis will also be on the AFSM and collator machinability characteristics to maximize the candidate flat volume for DPS. The Postal Service intends to work on these issues with the mailing industry to provide ample time for mailers to make these needed changes in the near future. This highlights the long-term value of machinability (AFSM compatibility), barcoding (required for DPS), and walk sequence carrier route presorting for flats.

It is anticipated that some portion of FSM 881s will be redeployed, most likely to smaller sites, when the second phase of AFSM deployment commences.

C. Parcels, Bundles, and Sacks

In this part of my testimony, I will provide an overview of our operations as they relate to the processing of parcels, bundles, and sacks today, and in the test year.

1. Parcel Processing

a. Equipment

For the most part, machinable parcels are processed in the Bulk Mail Centers (BMCs) with the same basic equipment that has been used for 25 years. The bulk mail network consists of 21 BMCs and eight Auxiliary Service Facilities (ASFs). The Primary and Secondary Parcel Sorters are fed by mechanized conveyors which feed parcels onto slides. Parcels are then manually separated and inducted into a tilt tray sorter. Parcel barcodes have continued to assist with the sortation of machinable parcels and have reduced manual keying requirements. Before entering a BMC, parcel barcodes are either provided by mailers or at the retail counter. If a barcode does not exist, the parcel sorter clerk must key the ZIP Code information, and a 5-digit barcode label is applied to the parcel.

Non-machinable outside parcels (NMOs) are either sorted manually, or with the use of mechanized sorting equipment at several BMCs depending on the non-machinability characteristics of the parcel. This equipment ranges from basic rolling conveyors to more elaborate keying and sorting machines.

b. Mailflow

Non-presort or non-dropshipped parcels entered into the mailstream are transported to the origin BMC either directly from retail/delivery units or through the plant. The origin BMC sorts the machinable parcels on the primary parcel sorter to the destination BMC or, if the parcel destinates within the same BMC service area, to the secondary parcel sorter. The secondary parcel sorter will sort the parcels to the appropriate 5-digit separation. The 5-digit containers of machinable parcels are transported to the delivery units either directly from the BMCs or transferred through a mail processing plant.

NMO parcels are processed to the 3-digit level in the BMCs. Mail processing plants process these NMOs received from the BMCs to the 5-digit level. This operation is, for the most part, performed manually and requires regular set-up (gathering of rolling stock and placarding containers) and breakdown, regardless of the volume processed.

Parcels presorted and dropshipped at the BMCs are processed in the same manner as discussed above. Parcels presorted to 5-digits and dropshipped at an SCF are crossed docked to the delivery unit.

The plants also process incoming and outgoing Priority Mail parcels in areas without Priority Mail Processing Centers. Priority Mail parcels may be sorted on SPBSs or manually depending on machinability and/or the processing location.

For the most part, parcels are sorted to carrier route at the delivery unit.

2. Bundle Processing

Flat mail bundles that arrive at a mail processing plant in sacks, on pallets, or in flat tubs, are often sorted before they are dispatched or opened for piece distribution. When pallets and sacks contain bundles made up to finer sortation

levels than the container, a bundle sort is required. This is accomplished in a manual or mechanized operation. Bundles that will subsequently be opened for piece distribution generally are sorted into rolling containers. Bundles that are dispatched can also be sorted into rolling containers.

a. Equipment

- Small Parcel and Bundle Sorter (SPBS) - The Postal Service has increased the amount of SPBS equipment and keying stations over the last several years. The SPBSs are deployed with four, five or six induction stations, and require a staffing of no more than three people per induction station. The SPBS can make up to 100 separations. There are currently 341 machines deployed in the field. The average throughput of the SPBS is between 678 and 945 bundles or small parcels per hour per induction station. The majority of the Processing and Distribution Centers and 19 of the 21 BMCs have SPBSs.
- The SPBS Feed System has been a recent addition to the SPBS. These feed systems consolidate all the induction lines into a centralized network capable of transferring mail from all types of mail containers and transporting the contents on mechanized conveyors to the induction/keying consoles. There are currently 240 deployed in the field with a contract for 50 additional systems. When the SPBS Feed System is incorporated, staffing is reduced by one-half to three people per crew, depending on the number of induction stations.
- Linear Integrated Parcel Sorters (LIPS) - The LIPS machines are not part of a national program and are procured locally. The configuration and performance vary based on the vendor, but the basic design consists of a feed station where the piece or bundle is keyed and sent down a rolling conveyor for deposit into rolling containers or pallet boxes.

b. Mailflow

Bundles are processed in both BMCs and mail processing plants. Mixed-ADC bundles are transported to the origin plant to be opened for piece distribution to the ADC network. Bundles at the BMC and ADC level are primarily sorted to 3-

digit and SCF separations. Plants subsequently sort 3-digit and SCF containers from the BMC and mailers, for either piece distribution or a bundle sort depending on the presort level of the bundle. Other separations may be performed at the plants on bundles for various operational reasons, other than just based on the presort level, (e.g. machinable volumes separated from non-machinable volumes, and barcoded flats separated from non-barcoded flats).

The SPBS is the equipment of choice for these bundle-sorting operations. The remaining sortation of bundles is performed with LIPS equipment or in manual operations. The manual options are either dumping the bundles on a belt and sorting to containers, or sorting the bundles into containers directly from the pallet.

Bundle distribution requires manual labor for operational set-up and breakdown. This involves the collection and placement of containers and placards for set-up. Also, at the time of dispatch, containers are closed and moved to the dock to meet transportation. No matter the volume received during a specific operating window, the setup and breakdown must take place.

3. Sack Processing

Sacks arrive at plants and BMCs from customers and other plants. The sacks may be containerized or bedloaded in vehicles. Containers are unloaded with either pallet handling equipment or, if wheeled, with manual labor. Containerized loads are much more efficient for unloading than bedloads. Bedloaded sacks are unloaded manually and, in some cases, the unloading is accomplished with the assistance of mechanized conveyors. Bedloads are labor intensive and time consuming to unload.

a. Equipment and Mailflow

Sacks are sorted in the BMCs on the Sack Sorting Machine (SSM) to the BMC network and, for the intra-BMC volume, to the 3-digit or SCF level. Keying or automated reading of the barcoded label occurs at the induction station, while the employee places the sack into a bucket that inducts it onto the tilt tray system. The intra-BMC sacks are transported to the plants for opening or further sortation in the

case of some 5-digit sacks. Sacks, in most cases, are opened and dumped manually. Mechanized sack dumping equipment assists with emptying sacks of parcels into the parcel sorter system in the BMCs. Sack sortation in the plants and other BMC operations is performed in some cases with mechanized sack sorters, but mostly with manual labor. Sacks are opened in the plants and delivery units with manual labor. Working sacks of parcels (sorted to BMC or MXD BMC) are opened at the BMC for processing on the Parcel Sorting Machines.

4. Description of Future System

The Postal Service continues to explore enhancements to the parcel and sack sorting equipment in the BMCs with the goal of reducing labor and improving equipment reliability. On the parcel sorters, the new technology will eliminate, to a large degree, manual labor currently used for facing and keying. Singulation and tunnel-scanning technology are being tested in the BMCs with the expectation of deployment in FY 2001. The singulation equipment will spread the parcels and allow induction into the tunnel scanner one parcel at a time. The 360-degree tunnel scanner will have the ability to read the barcode independent of the orientation of the piece. This technology will reduce the manual labor associated with mechanized parcel sortation in the BMCs. For the non-machinable outside volume, additional mechanized sorters are being investigated, to improve the productivity of these predominantly manual operations.

There are continuing efforts to develop and deploy robotic systems for the processing of letter trays, placing particular emphasis on the bulk mail network. Standard Mail (A) letter trays are currently sorted at the BMCs into 3-digit or SCF separations, using either the Sack Sorting Machines, an NMO sorter, or manual labor. MXD ADC trays are sent to the closest plant consolidation center for piece distribution. The robotic systems will be designed specifically for letter trays, increasing productivity and reducing damage.

In the plants, the processing of sacks has, with the exception of a limited number of sack sorters, been performed exclusively with manual labor. The Small Parcel and Bundle Sorters and, more recently, the Linear Integrated Parcel Sorters,

were the first pieces of equipment in the plants to reduce the labor requirements for bundles and parcels. Now, the focus is on advancing the technology in this area with the next generation of sorters, with barcode readers, OCRs, and video coding stations to further reduce labor hours. Universal Transport Systems are also in development, which are designed to sort and transport trays, flat tubs, sacks, parcels and bundles. Robotic systems are also being developed to assist with the loading and unloading of parcels, bundles, pallets, and sacks into and out of containers.

D. Allied Operations

Allied operations are mail processing operations other than piece distribution. The most important examples are cancellation, opening units, pouching and the platform. Opening units sort incoming trays, bundles and sacks for subsequent distribution operations and take off sleeves and straps from incoming trays and tubs. Opening units, as tracked by MODS, also prepare outgoing mail by sleeving and strapping trays, apply air assignment tags if applicable, and containerize for dispatch transportation. Pouching consists of sorting bundles and small parcels into sacks hung from racks, although larger containers may also be used. Platform consists of the activities required to load and unload mail from trucks, identifying container contents for movement to the appropriate operation, and moving containers to and from the docks and operations.

Some activities in allied operations, such as dumping sacks, can also be performed at a piece distribution operation. If a single person performs the activity for multiple distribution operations, that person would be assigned to an allied operation. However, people assigned to distribution operations, such as the FSMs or automation, can also perform allied activities related to their operations.

Except for the cancellation operation, volume is not consistently measured for these operations due to the difficulty of measuring the workload, so piece productivities cannot be calculated. However, allied functions are still closely monitored because of their impact on service and cost. As noted below in the Staffing section, allied operations are gateway and dispatch operations that are

critical to service. Their costs have appeared more significant over time because our automation and mechanization efforts have reduced costs in distribution operations much more than in allied operations. Increasing the marginal volume on DPS through tabbing or LMLMing, and using different FSMs to handle pieces with differing characteristics, all increase the number of separations that allied operations must perform.

This combination of importance to service and more visible costs has resulted in increased management attention to allied operations. These operations are conspicuously located in a facility and their activities are obvious to the casual observer. The absence of a productivity measurement does not indicate lack of control. On the contrary, management has both the budget incentive and the means to tightly control allied operations.

The Postal Service is looking towards advanced technology to improve productivity in allied operations. In the next several years, we plan to deploy Robotic Containerization Systems (RCS) and additional Tray Management Systems (TMS) to replace current labor-intensive tray handling operations. In FY 2000, we will have 100 RCS robots loading letter trays and flat tubs into dispatch containers, and we will begin testing a more advanced robot that can unload trays and tubs as well as load them. The TMS system stages and moves most of the trays and tubs within a plant. TMS has been deployed to 17 facilities with 15 more plants to come on-line by FY 2001. Plans are to extend the system to most large and medium facilities.

E. Delivery Operations

The implementation of Delivery Point Sequencing (DPS) for letters has had a significant effect on the movement of mail from the Plants through the Customer Service Offices and on to the customer. The last dispatch from a plant to a DPS office will be as late as possible, perhaps 8 am, and contains DPS letters along with any late arriving Priority or Express Mail. This later dispatch time provides the maximum possible incoming window at the plant for processing DPS letters, and does not delay the mail because the carriers do not need to handle DPS trays until

they load the trays into their vehicles. However, the first dispatch for a large office may be as early as midnight and contain mail that does not require sortation to the carrier at the plant. Examples include carrier route mailings on 5-digit pallets and BMC containers of 5-digit Standard Mail parcels. A large delivery unit may get shipments directly from the BMC. In between, there may be one or two dispatches of non-DPS mail that must be worked in the office. Although some of these trips, especially the earlier ones, may drop mail at several offices, they rarely move mail between offices. Virtually all of the mail for an office goes between the office and the plant or BMC. For example, Bound Printed Matter (BPM) at the local rate might be dropped at a Main Post Office (MPO) for local delivery, but it would not be distributed from the MPO directly to its stations and branches. Instead, the BPM for the stations and branches is trucked to the plant for distribution. The inefficiency caused by the drop at the MPO is compounded if the drop at the MPO includes mail that is outside of the plant's service area, so the plant must ship it on to the appropriate destinating plant(s).

Within the last four years the typical carrier reporting times have changed from around 6 am to between 6:30 and 7:30 am. The difference represents time the carrier would have spent casing letters before DPS was implemented. Instead, the carrier spends more time on the street delivering to more addresses. We emphasize getting as many letters as possible into the DPS sort because of these savings. In many cases, ECR letters are transported from the delivery unit to the processing plant to be barcoded on an OCR and sorted in with DPS letters on a DBCS. The carrier route sort loses all value to operations in this situation. ECR letters have value only at non-automated sites (usually less than 5 carriers), if the letters are non-automation compatible, and at CSBCS sites if the letters are prebarcoded.

When the carriers arrive at their cases, their immediate task is to sort flats and non-DPS ("residual") letters into route sequence. Flats in line-of-travel (LOT) sequence allow for very efficient casing. Residual letters may be sorted in with the flats or they may be cased separately and carried as a third bundle in accordance with the NALC agreement (see USPS-LR-I-79). Except on curbline routes where

the carrier can stay in the delivery vehicle (unless there are parcels or accountables) and easily pull from multiple bundles, at most one customer supplied carrier route WSS (walk sequence saturation) bundle can be carried directly onto the street without first being cased. If there is more than one, they are normally collated, sorted with the flats, or curtailed, depending on the service required. In a DPS environment where the carrier carries three bundles, even one WSS bundle may need to be cased or collated. It can be taken directly to the street only if another bundle is eliminated through casing or collating, or the carrier voluntarily carries a fourth bundle. Of course, this restriction does not apply to a curbline route.

The carrier arranges mail based on the practicalities of the route and the mix of mail to deliver. For example, nothing that is too awkward will be sorted into a vertical flats case where it would not only take up too much space in the case (usually a one inch separation per delivery), but would also create bundle handling difficulties on the street. Rigid, non-uniform in thickness, and thick (over ¾") pieces are cases in point, and would be handled as parcels, or, possibly, collated into the flats after pull-down. Vertical flats cases are used for most routes while horizontal flats cases, with larger separations for multiple delivery points, are generally used on business routes and routes with a large proportion of centralized delivery.[8] In the case of horizontal holdouts, many of the small parcels and rolls (SPRs) would be cased and collated in with the flats.

After carriers pull down their cases, they bundle, tray or otherwise prepare mail in a manner that is practical for the route, pick up the DPS letters on the way to the vehicle (if not a foot route), load the delivery vehicles and proceed to the street. On the street, carrier activities have also changed. The changes have been gradual but, in some instances, significant over the last ten years due to less office time, travel time efficiencies, and more work to do at each delivery point.

As mentioned previously, DPS reduces office time by saving each carrier up to 1½ hours a day for casing letters. This time was captured by reducing overtime

[8] Rows of mailboxes in apartments are a common form of centralized delivery.

or assistance that had been provided the carrier.[9] The assistance might have been on the street delivering part of the route, called "auxiliary assistance", or in the office casing mail, called "router time". Routes were also combined in order to adjust the remaining routes to approximately 8 hours as prescribed in our delivery handbooks. This eliminated about 3,200 routes outright nationwide, and avoided approximately 3,000 to 4,000 new routes that would have otherwise been created due to the growing number of delivery points.

Small travel time efficiencies have gradually added up. Cluster boxes have been installed in new developments and some older developments converted. This eliminates all of the travel time between the delivery points clustered in the box. When cluster boxes cannot be used, curbside delivery is used instead of delivery to the doorstep whenever possible. Motorization has gradually eliminated many walking routes and increased the proportion of carriers with vehicles from 85 percent in FY 88 to 91 percent in FY 98. The combination of motorization with cluster and curb boxes in the suburbs has reduced the travel time required to service groups of delivery points. Finally, coverage, the proportion of delivery points receiving mail on any one day, has increased to 85 percent, so there is less travel time without useful activity at a delivery point.

Delivering mail at a delivery point is one area where carrier time has actually increased. There are a number of reasons for this. First, there were 5.6 pieces per delivery in FY 98 compared to only 5.1 in FY 88. Flats volume has grown during this time. Flats by nature are more awkward to handle and, depending on the type of delivery or box, may be physically more difficult to deliver. Also, DPS implementation allowed for additional handling costs on DPS letters, calculated as one hour per 5000 pieces of DPS.[10] Increases in parcel deliveries per route would also account for carriers spending a little more time per delivery. This is all very

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[9] Prior to implementing DPS, many carrier routes had not been restructured to reflect volume and delivery point growth in order to make the appropriate adjustments after DPS implementation.

[10] The conservative DAR took into account a cost may be incurred in the office or on the street due to any possible residual handling. E.g., carriers go to a rack to pick up their trays of DPS, verify it is their mail, and that it is in accurate walk sequence.

different from the old environment of dropping a few letters in each mailbox. The carrier spends more time at each delivery point and the time can be expected to vary with volume.

In summary, comparing FY 88 to FY 98, today's city carriers average an additional 25 minutes on the street delivering 8 percent more mail to 2 percent fewer delivery points, most of which are centralized or on curbline routes – only 9 percent of routes are still foot routes. This trend of increased carrier time spent at delivery points may well be even more pronounced in the future. Parcel and flat volumes are expected to increase. Adding delivery confirmation (and future signature confirmation) to our services requires carriers to utilize barcode wands when necessary, which adds to their workload at the point of delivery.

III. Staffing and Complement

The management incentive system drives Postal operations planning related to operating expenses. Annual incentive payments are awarded for meeting goals for service performance, financial performance, and various employee metrics such as training and safety. In Docket No. R97-1, Jon M. Steele (USPS-RT-8; Tr. 33/17843-55) described the management activities driven by these incentives. This section describes the planning and analysis that supports management's efforts to provide good service at an economical rate.

In mail processing, the dynamics of the mail flow are the foundation of any planning effort. Customer practices and expectations create three fundamental events that drive the daily processing schedule:

1. Collection mail typically arrives at a plant during the first half of Tour 3. (The day is divided into 3 tours of 8 hours each at a plant. Times vary by plant, but 1500 – 2300 is fairly typical for Tour 3.) Most of this mail cannot arrive any earlier because businesses and the general public prefer to mail most of their letters in the late afternoon and demand collection schedules that accommodate their preference. When a sufficient volume of collection mail is available earlier, such as a day after a holiday, it may justify a special or earlier collection in order to start processing earlier.

2. Near the end of Tour 3, outgoing or originating mail must be dispatched to non-local destinations via surface transportation and to the airport to make the next day's flights. This both satisfies our service requirements, based on the public expectation that preferential mail will be moved expeditiously, and facilitates changing sorting schemes to prepare preferential mail for next day local delivery.
3. Tour 1, (e.g. 2300 – 0700), processes primarily local turnaround and incoming mail for local delivery. Most of this incoming volume must be dispatched by the end of Tour 1 to local carrier locations. The timing of these dispatches is determined by travel distance and by customer requirements, especially business requirements, for delivery early in the day. Frequently there are several dispatches to the same delivery unit because some of the mail is available early, the unit needs working volumes to begin processing, and the plant needs the last dispatch to be as late as possible to maximize the time available for DPS processing.

The time between the arrival and dispatch of collection mail is commonly called the "outgoing window", and the time between the dispatches of outgoing mail and local delivery mail is called the "incoming window". The length of these windows can vary greatly from plant to plant depending on equipment, geographic area served, and volume characteristics. Together with volume, the operating windows determine the peak processing capacity required at a plant. Capacity is generally planned to completely process all preferential mail on all but a few extremely high volume days.

Operating plans are developed for each plant to schedule the flow of mail through the various processing operations in the plant based on the available equipment and volume arrival profiles for the mail. Staffing plans are usually developed to support the operating plan's "average" week and specify the workhours and skills required in each time period.

For each day of the week, the volume and composition of the mail are estimated, but on any specific day, it is inherently difficult to predict how much mail will arrive in any particular half-hour. Large mailings can arrive unexpectedly and

trucks bringing mail can occasionally be badly delayed due to weather or breakdowns. Uncertainties have two major effects on staffing plans.

First, volume fluctuations greatly affect some operations that are critical to success in processing. The gateway operations – platform, opening units, cancellation, even the OCRs to some extent – receive mail first each evening when there is the least knowledge of the night's total volume. They must be staffed to get the mail through so that other operations can begin processing. If the volume turns out to be heavier than projections and mail is delayed getting through the gateway operations, there may not be any opportunity to recover later. The effects cascade through the operating schedule, delaying the changeover to incoming processing or causing mail to miss critical dispatches.

Other operations are key to making dispatches on time. Manual case distribution, especially letter case distribution, falls increasingly into this category. Manual letter cases process non-machinable mail and rejects from automated operations. They have a relatively short processing window and represent the last opportunity to sort and dispatch this type of mail on time. The platform is doubly critical, both as a gateway getting mail into the building and then getting mail back out of the facility.

Second, fluctuations in daily mail volume make it difficult to detect actual changes in volume over longer periods (monthly). It can take several months to confirm that a real increase in volume is not just an unusual number of high volume nights occurring together. Delivery volume growth can be due to more pieces per delivery or more delivery points. If it is a pure volume increase without any changes to the mail composition or delivery area, it is relatively easy to handle. Sort runs will be a bit longer, but sort schemes usually need not change and there will be little impact on the allied activities that move mail between sorting operations and the docks. If instead volume growth is due to growth in possible deliveries (i.e. more businesses and households) there will soon be changes in carrier routes and possibly new delivery units that must be reflected in sort schemes and transportation. In this case of increased delivery points, the ancillary setup, takedown, and mail movement activities will increase in near proportion to the

volume increase. To effectively plan staffing, it is important to understand the cause of a volume change by shape or work content, not just the magnitude.

Craft limitations, overtime, casual ratio, breaks, wash-up time, etc. are spelled out in national and local labor agreements. Copies of the national agreements for the APWU and NPMHU are provided in USPS-LR-I-79. Staffing plans must, of course, comply with all these rules.

Normally the complement plan is based on the staffing plan and is developed to establish job assignments in the proper craft (i.e. clerk or mailhandler) with the proper skills, grades and categories (i.e. full time, part time, or casual). Complement plans must construct a capable and economical mix of employees (i.e. trained and consistent with the contracts) to fulfill the staffing plan while complying with rules on seniority, posting, reassignments, PTF conversions, etc. in the same national agreements.

When there is a volume increase, the increase must first be recognized, then a new staffing plan is required and then a new complement plan. Next the new or reassigned jobs in either the staffing or complement plan must be bid. The successful bidders leave vacancies in their previous assignments and those vacancies must then be placed up for bid or reverted. If training is required for the new assignment, it must be provided before the person can work in the new assignment. It can be as much as a year from initiating a staffing change due to a change in volume to the time when staffing has fully adjusted to the shift. If staffing changes are due to new equipment, the process is similar. There is advance notice, but it may still take time to learn how to best manage and staff a new type of equipment or mailflow.

The longer term planning process outlined above is very different from the daily problems of shifting staff to meet the workload. On a daily basis there is uncertainty in both mail volume and the staff that will actually be present after adjusting for sick and unscheduled leave. Subject to the labor agreements, Postal Service supervisors can move personnel from operation to operation as needed, but there is an unavoidable loss in productivity due to lost time in the moves, using people with less skill, and difficulty getting the timing just right given the less than

predictable workload. Employee moves may also be required if a piece of equipment goes down in the midst of processing for an uncertain amount of time. This contrasts with the long term situation outlined above where a volume increase, especially a pure increase without any change in possible deliveries, will result in improved productivity, everything else being equal.

Our planning is geared towards processing mail in the most economical operation while meeting service requirements. One of the indicators operations uses for planning is cost per 1000 pieces. This National figure comes from the NWRS (National Workhour Reporting System) cost per hour by LDC (Labor Distribution Code), multiplied by MODS (Management Operating Data System) hours and divided by TPH (Total Pieces Handled). For AP 13 FY 99 the figures are:

$69.00/1000 manual flats
$51.68/1000 mechanized/automated flats
$58.80/1000 manual letters
$5.41/1000 automation letters

If we can move a letter from manual processing to automation, there are tremendous savings opportunities. Pieces that are prepared as automated flats rather than automated letters are more costly to process. Operationally, we are interested in sending the right rate and make-up signals for mailers to make appropriate decisions in light of our processing costs.

IV. Space Planning

Growth in population, mail volumes, delivery points and processing equipment require continuing investment in facilities to provide needed workspace. In addition, the large inventory of existing facilities must be maintained. When existing facilities can no longer provide adequate working conditions for employees, sustain efficient operations, or be repaired economically, they must be replaced.

The ideal configuration for distribution is centralized distribution within an existing plant, utilizing existing plant space to the fullest. When existing plant space

is inadequate, the second option is to decentralize some processing operations into existing postal space outside of the plant. The third option is to change mail flows to reduce workload and thus space required for the workload. New processing space is obtained only as a last resort. These options are described in more detail below.

Before considering decentralized operations, every effort is made to increase processing space in the plant. For example, the Computerized Forwarding System (CFS) would be moved, and any remaining carrier functions in the plant would be moved out. Administrative and support functions might be relocated outside the plant. The processing operations themselves would be examined to see if any equipment could be removed or rearranged to make better use of space.

When these actions are insufficient, the first concern is the nature of the existing space outside the plant – location, transportation access, available power, square footage, dock facilities, etc. Within these practical constraints, the first priority is to keep Incoming and Outgoing Primary Operations for all classes and shapes housed in the plant. Next, parts of Incoming Secondary processing may be relocated to customer service facilities where employees perform local delivery point sequencing and manual casing for letters, and carrier route sorting for flats and parcels. Automated equipment, such as DBCSs and CSBCSs used to delivery point sequence letters, would then be moved to the customer service facility.

Once existing space is completely exhausted, opportunities to reduce the workload are examined. If service can be maintained, processing responsibility for a 3-digit service area might be moved from a crowded plant to one with more space. This would occur in conjunction with appropriate changes to labeling lists. The change in processing responsibility might apply to all classes of mail or to only selected classes. For example, Priority Mail processing for a two-plant area might be consolidated at one of the plants.

When these options still do not produce enough space, new space must be obtained. There are different kinds of space that can satisfy the same underlying processing needs, and a thorough analysis of cost and service impacts is required for these potential facility investments. Practical questions, such as what is physically and economically possible in a crowded city environment, may well

dominate the analysis. However, the possibilities can be roughly ordered as follows, from most desirable to least desirable:

1. Expand the space at existing customer service facilities to increase local delivery point sequencing and manual casing for letters, and carrier route sorting for flats and parcels. This is frequently the least disruptive and least costly way to free space at the plant.
2. Expand the plant. Many of our plants, especially the newer ones, were sited and designed to be expanded through one wall of the plant. This is an excellent option when available.
3. Build or lease an annex to the plant. Annexes often are used for volume peaks such as the fall mailing season or unusual circumstances like disaster recovery or Desert Storm / Desert Shield. They may also be used to house some operations for a new facility being built or during expansion of the main facility. In choosing operations to relocate, the dominant consideration can be the type of annex space that is actually available in a desirable location. For example, it can be prohibitively expensive to get additional power for heavy sorting equipment in a building with a lease less than 5 years. In choosing among operations that could feasibly be relocated, special circumstances can drive this decision. For example, Priority Mail processing might be moved in the expectation that a Priority Mail Processing Center will soon replace the temporary Priority Mail annex. A change in mail makeup can also be the driver. For example, there has been an increase in bundles of flats that require a LIPS or SPBS for economical sortation. In many cases, this mail can be sorted and dispatched directly from an annex to the carrier units, making it an attractive candidate for relocation. Although these short-term expedients are important when we must resort to an annex, they should not be confused with the long-term goal of centralized distribution. We retain Priority Mail, Periodicals, and Standard Mail (A) within the main plant whenever possible.

4. Replace the main plant. This often occurs when the building is at the end of its useful life and cannot be maintained or expanded economically. It is a major investment and a lengthy undertaking that can be further delayed by public concern over siting decisions and availability. Ideally, any new plant is built to accommodate space needs for the next ten years with a capacity for significant expansion in later years.
5. Build or lease a new customer service facility specifically to delivery point sequence or manually case letters, and carrier route sort flats and parcels for nearby offices. These facilities, commonly called Delivery and Distribution Centers (DDC) and Delivery and Distribution Units (DDU – DDUs are smaller), are the least desirable alternative because they introduce an additional stop in the path between mailer and addressee.