Contract No. GS35F4155D

(Unclassified)

PHASE II REPORT

USAF LOGISTICS PROCESS OPTIMIZATION STUDY

for the

Aircraft Asset Sustainment Process

AFLMA Project LM9731101

Volume I of III

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31 December 1998

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EXECUTIVE SUMMARY

This "USAF Logistics Process Optimization Study for the Aircraft Asset Sustainment Process -- Phase II Report" is the second in a series of technical reports prepared under AFLMA Project LM9731101. It is published as three separate volumes.

Volume I, "USAF Logistics Process Optimization Study for the Aircraft Asset Sustainment Process -- Phase II Report," discusses the result and cost/benefit analysis of testing three initiatives at Langley Air Force Base as possible solutions to several findings discussed in the Phase I Report, "USAF Logistics Asset Sustainment As Is Process."

Volume II, "ACC To Be Model", contains the To-Be Retail Asset Sustainment Process Model displaying the activities and functions related to the improved processes for receipt, storage, issue and delivery of materiel as tested at Langley Air Force Base, Virginia, and recommended for USAF adoption.

Volume III, "Future To Be Asset Sustainment Process Model," is published as a stand-alone volume of this report. Volume III contains a discussion of the Reengineering Team's efforts in the development of a logistics process model for a more distant future retail aircraft asset sustainment scenario unconstrained by today's logistics information systems limitations. It also contains a conceptual process model reflecting the Reengineering Team's vision of the future asset sustainment process.

The following conclusions are explained in this report:

1. Direct Ship can save both manpower and money if implemented properly. Certain criteria should be considered before implementing Direct Ship

2. Direct Receipt can save manpower, money, and asset pipeline time if implemented in locations with the proper facilities. Conceptually, Direct Receipt could apply to any asset, regardless of size or special handling requirements. However, there are some considerations that should be evaluated before implementing Direct Receipt

3. Wrapper Applications have tremendous potential to decrease workload and streamline operations in MICAP sections, as well as many other units. Any task with the potential to be automated or any situation that requires data transfer between systems is a candidate to benefit from wrapper applications.

The Reengineering Team's recommendations are outlined on the following page.

1. Implement Direct Ship (with a scheduled and on-call on base asset movement concept) in units that meet the criteria of being an appropriate Direct Ship site.

2. Implement Direct Receipt (with a scheduled and on-call on base asset movement concept) in units that meet the criteria of being an appropriate Direct Ship site.

3. Pursue further testing and development of the SBSS to D035 Wrapper Application.

4. Adopt the ACC To-Be Model (Volume II of this report) as the baseline USAF To-Be Model for the short term.

5. Use the ACC To-Be Model (Volume II of this report) to further expand process descriptions and/or identify additional areas for improvement studies.

6. Use the Future To Be Asset Sustainment Process Model, found in Volume III, to foster discussions on the future processes and concepts for logistics and establish strategic direction for overarching reengineering efforts.

7. Use the Phase I Logistics Process Optimization Study findings and other reengineering initiatives to develop a prioritized list of reengineering opportunities and a strategy to pursue those opportunities.

8. Pursue development of a solution for the "air gap" between CMOS and SBSS/SATS.

Chapter 1
INTRODUCTION

"People tell the story that reengineering is like taking off in a 727 and landing in a 747. There is no way to land the plane and fix everything. You start from where you are."[1]

The Air Force is being challenged by many different factors such as constrained budgets, smaller force structure, increasing demands for non-traditional missions, and the threat of multiple regional conflicts. Additionally, the Air Force Logistics Strategic Plan includes the goals of improving support to combat units in peace and war, reducing customer wait times, developing a seamless logistics system, and streamlining the logistics infrastructure.

In response to these numerous mandates for logistics changes, including legal and modernization requirements, Headquarters US Air Force Installation and Logistics Plans and Integration Directorate (HQ USAF/ILX) tasked the Air Force Logistics Management Agency (AFLMA) in Feb 1997 to examine Air Force Logistics processes from the highest levels and from a holistic perspective. Specifically, the study had the following objectives:

- Develop a road map to identify opportunities and requirements for logistics process reengineering
- Prioritize those reengineering opportunities and requirements
- Provide recommendations

Due to the breadth of Air Force logistics management, ILX limited the scope of the study to initially focus on Aircraft Asset Management, defining it as selected logistics activities supporting sortie production of operational aircraft.

To accomplish the above objectives, AFLMA contracted with Intergraph Federal Systems, a corporation with a proven track record in Business Process Reengineering. Using DOD-accepted Functional Process Improvement practices, the Reengineering Team and functional experts from Warner Robins Air Logistics Center (WR-ALC), Defense Logistics Agency (DLA), Headquarters Air Combat Command (HQ ACC), and the 1st Fighter Wing (1FW) began developing the "road map" by:

- Building As-Is Activity and Process Models of Aircraft Asset Sustainment
- Identifying reengineering opportunities where redundant or unnecessary processes were observed
- Prioritizing opportunities by estimated level of difficulty and duration of reengineering effort

[1] Caudle, Sharon L., Reengineering for Results: Keys to Success from Government Experience, National Academy of Public Administration, Washington D.C., 1995.

- Providing recommendations for implementation, subject to senior management review and approval

In Dec 1997, Intergraph published the 2-volume "USAF Logistics Asset Sustainment As-Is Process" Report. Volume 1 described the existing Air Force Logistics Asset Sustainment Process, and provided a listing of 29 findings and recommendations, prioritized as near-term, mid-term and long-term reengineering opportunities. Volume 2 of the report captured the existing asset sustainment process as both an Integrated Definition (IDEF) Activity Model (IDEF-0) and a Process Model (IDEF-3).

> ***"The tremendous potential of reengineering business functions prior to automating is also not being fully tapped, unlike successful private sector efforts. For the government to reduce costs, increase service, and raise productivity, new information systems should not be developed simply to automate existing inefficient or ineffective processes. This has been a hard lesson for federal agencies to learn...."***[2]

Recognizing the As-Is process model as a tool for identifying areas for improvements and as the springboard for developing To-Be processes, AFLMA, with HQ USAF/ILX concurrence, extended the contract with Intergraph for a second phase of study. For Phase II, seven near- and mid-term findings were selected as candidates to:

- Design improved or reengineered processes
- Conduct a proof of concept for reengineered processes
- Validate gains attributed to reengineered processes
- Assist in implementation of reengineered processes

In addition, Performance Work Statement tasks were included for development of a To-Be Retail Asset Sustainment Process Model. HQ ACC, in concert with their own reengineering and consolidation efforts, volunteered to assist in developing To-Be processes and participate in the test objectives for all seven findings at Langley AFB, VA. The To-Be Model developed at ACC focused on the near-term future and captured many of the on-going and planned improvement tests at ACC (such as the Shaw Transportation/Supply Merger) in addition to the initiatives AFLMA tested.

[2] GAO Testimony, Committee on Governmental Affairs, United States Senate, February 2, 1995

Chapter 2
BACKGROUND

This report is the second in a series of technical reports prepared under AFLMA Project LM9731101.

In general, this second phase of the USAF Logistics Process Optimization Study for the Aircraft Asset Sustainment Process was to:

- Focus base activity logistics support on readiness and war fighter requirements (i.e., clear prioritization enabling everyone to "do the right thing").
- Create an infrastructure to provide all necessary parts, technical skills, etc., to enable accomplishment of the top priority activities (i.e., enabling everyone to "do the right thing" as fast and efficiently as possible).
- Resolve and improve system support problems with legacy logistics systems, as well as provide a basis for development of new logistics systems, such as the Integrated Logistics System – Supply (ILSS) and the Integrated Maintenance Data System (IMDS).

2.1 SCOPE

2.1.1 Test Initiatives

The Phase II study focused on ACC logistics asset sustainment processes and activities that directly support sortie production of operational aircraft. It also included determining what changes could be made to logistics information technology/systems to support an ACC, followed by Air Force, integrated concept of asset sustainment in the fastest, cheapest, most maintainable fashion.

Specifically, the Phase II study focused on the following seven findings from the Phase I study:

- Unnecessary Asset Handling in Base Shipping Process (Finding 3.2.5)
- Unnecessary Asset Handling in Base Receiving Process (Finding 3.2.4)
- Unnecessary Cargo Movement Operations System (CMOS) Processing (Finding 3.2.9)
- Air Force Contingency Supply Squadron (AFCSS) Potential Capabilities Not Fully Developed (Finding 3.2.12)
- Resource Intensive Mission Capable (MICAP) Off-line Requisitioning Process (Finding 3.2.10)
- Limited Interface Between Legacy Systems (Finding 3.1.5)
- Interface Between the Standard Base Supply System (SBSS) and the Depot Inventory Management System (D035) is Slow and Uncertain (Finding 3.2.6)

The following three initiatives were developed and tested at Langley AFB as possible solutions to the above findings.

- Direct Ship
- Direct Receipt
- Use of Commercial Off-The-Shelf (COTS) software for legacy system integration

The results of these tests and the associated cost/benefit analyses are published in this Volume I report.

2.1.2 To Be Process Model Development

This report includes an IDEF-3 To-Be Retail Asset Sustainment Process Model displaying the activities and functions related to the receipt, storage, issue and delivery of materiel as tested at Langley Air Force Base, Virginia. This To-Be model was developed with ACC assistance and focused on the near-term future. It incorporates many of the on-going and planned improvement tests at ACC (such as the Shaw Transportation/Supply Merger), in addition to the initiatives AFLMA tested. The IDEF-3 model is published as Volume II, ACC To Be Model, of this report.

2.1.3 Future Process Model Development

In March 1998, HQ USAF/ILXI reviewed the Reengineering Team's As Is and To Be process models and requested the team develop a To Be model for a more distant future asset sustainment scenario, unconstrained by today's logistics information systems limitations. The Reengineering Team developed the initial 'distant future' To Be process model after reviewing published Air Force documents regarding vision, future doctrine, and mission forecasts. Reviewed sources included:

- Air Force 2025
- Joint Vision 2010
- Supply 2000
- Quadrennial Defense Review
- Air Force Long Range Plan
- Air Force Logistics Strategic Plan
- DOD Logistic Strategic Plan
- Global Engagement: A Vision for the 21st Century Air Force
- Global Combat Support System Concept of Operations
- 1998 Scientific Advisory Board Report on Air Expeditionary Force (AEF) Concepts

Using these publications, the Reengineering Team merged the presented concepts with current technology and functional momentum. The result was the team's outlined perception of an IDEF-3 future (roughly 10-20 years out) logistics process model. A more in-depth discussion of the development of this future process model and the issues associated with it may be found in Volume III, Future To Be Asset Sustainment Process Model.

2.2 METHODOLOGY

> ***"Only processes can be reengineered. Before you can reengineer your processes, you must identify them."***[3]

The Reengineering Team used an Integrated Definition (IDEF) Process Modeling tool to determine how activities could (or will) be done and to identify the sequence of activities. Using Knowledge Based System Incorporated's (KBSI) ProSim, Version 2.1.5.1, the team developed IDEF-3 To Be process models to test the three initiatives at Langley AFB, VA.

This study followed the standard methodology for Department of Defense (DOD) Functional Process Improvement in accordance with Department of Defense Directive (DODD) 8020.1M:

1. Establish the Framework
2. Document the Baseline (As - Is)
3. Analyze and Design Improvements (To - Be)
4. Develop a Management Plan to Implement Improvements
5. Obtain Approval of the Plan, and
6. Execute the Approved Plan.

The Phase I study accomplished the first two DOD Functional Process Improvement steps with minimum analysis, testing and redesign efforts. The Phase I study provided a road map for change, which identified immediate improvement opportunities and identified areas for further study and analysis. A recapitulation of the findings outlined in the Phase I Report is included in Appendix B.

This Phase II study continued the process improvement methodology by completing step 3 and, through testing the initiatives, developed specific recommendations for accomplishing step 4. This was done by gathering subject matter experts to assist in the development of a To Be process model. Using the As Is process model developed in the Phase I study as a foundation, we capitalized on improvements already tested within the command and incorporated several ACC-sponsored initiatives such as the Dyess Express, the Shaw Transportation/Supply Merger, Supply Asset Tracking System (SATS), and ACC's Contingency Supply Support Squadron. The To Be process model displays those tasks involving actual work accomplishment and information processing. It is illustrative of the typical Supply, Maintenance and Transportation tasks involved in this process at Air Combat Command (ACC) bases and contains appropriate process flows connecting related wholesale logistics activities. This To Be process can be applied, taught, and used Air Force wide.

Specific methodologies used to test the initiatives are discussed within their respective sections of this report.

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[3] Michael Hammer, The Reengineering Revolution, A Handbook, 1995

2.3 REENGINEERING TEAM MEMBERSHIP

Conducting the analysis involved a team effort between AFLMA, Intergraph Corporation, Headquarters Air Combat Command (HQ ACC) and Langley AFB 1st Fighter Wing personnel. Intergraph and core AFLMA team members traveled to Langley Air Force Base (AFB) to interview subject matter experts for the purpose of selecting, developing and testing process improvements. Appendix D lists personnel who provided the team subject matter expertise.

2.3.1 AFLMA Core Reengineering Team: Full-time members of the Logistics Process Optimization Team.

Team Leader and Maintenance Representative (Through May 1998)	Glenn Barney	Major	DSN 596-4581
Team Leader, Maintenance, and Transportation Representative (Effective February 1998)	Dorothy Tribble dorothy.tribble@aflma.gunter.af.mil	Major	DSN 596-4581
Supply Representative	Brad Anderson bradley.anderson@aflma.gunter.af.mil	Captain	DSN 596-4165
Transportation Representative (Through December 1997)	Inez Sookma	Captain	DSN 596-4581

2.3.2 Intergraph Members: The following Intergraph personnel assisted the Logistics Process Optimization Team. (1-800-239-2500 & Extension)

Facilitation/Planning	Anthony Adamson	256-730-7762	aadamson@ingr.com
Technographer	Ellen Parker	207-443-9393	eparker1@ingr.com
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2.3.3 Sponsorship & Oversight: These stewards provided overall scope and guidance.

Project Sponsorship	Robert Wolff	Doctor	AF/ILX	DSN 227-8129
Project Oversight	Richard Bereit	Colonel	AFLMA/CC	DSN 596-4511
Depot Reengineering	Don Klovstad	Colonel	WR-ALC/RE	DSN 468-1274
HQ ACC Supply	James Daup	Colonel	HQ ACC/LGS	DSN 574-3414

Chapter 3
ASSUMPTIONS AND CONSTRAINTS

The results in this report are limited by the scope and application from which they were obtained. Most data was collected from the 1st Fighter Wing's Component Repair Squadron (CRS) Engine Shop. In applying the results of this study across the Air Force, many of the assumptions and constraints listed below need to be considered. Recommendations at the end of this report will attempt to apply this study's results to the appropriate operations and address criteria to be considered before deciding upon implementation of the concepts.

Assumptions:

The 1st Fighter Wing's operations and processes, specifically the CRS Engine Shop Supply Support Section, are representative of operational locations throughout the Air Force.

We assume Traffic Management Flight (TMF) and Supply Receiving are co-located, or TMF personnel will meet arriving property at the receiving location with supply personnel. If these activities are not co-located, additional savings may be realized for any property movement eliminated.

Results from the following reports/documentation are also discussed in this report:

- Report No. SID/17551, Functional Economic Analysis Report on Investment Decision for Using Radio Frequency Technologies in the Standard Base Supply System (a.k.a. Supply Asset Tracking System-SATS)
- Shaw Transportation/Supply Merger documentation
- Reengineering Proof-of-Concept, AFLMA Final Report LM9617100
- Dyess Express documentation

We did not attempt to replicate or validate the reported efficiencies/savings cited in the above reports.

Constraints:

This study did not examine the shipping processes from depot to base-level customers or the parts movement within the local repair process.

The Direct Ship test used a Federal Express (FedEx) terminal installed in the CRS Engine Shop to produce express shipment manifests. As a result, the test results are confined to a single express carrier.

Certain criteria should be considered before implementing the recommendations contained in this report. These criteria are discussed in the Implementation Issues of each section in Chapter 4, Phase II Test, and are reiterated in Chapter 6, Recommendations.

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Chapter 4
PHASE II TEST

SECTION 1 -- DIRECT SHIP

4.1 SHIPPING PROCESS

This portion of the study focused on the off-base evacuation of Not Reparable This Station (NRTS) assets. For the purpose of this study, we defined Direct Ship as the process to ship express carrier-eligible packages directly from non-centralized support section locations at base-level to the designated source of repair. Examination of the shipping processes from the depot to base-level customers and movement within the local repair processes were not included as part of this study.

The Phase I report identified Direct Ship as a potential process improvement for eliminating unnecessary asset handling and data processing. HQ ACC agreed to work with the Reengineering Team to answer the questions: "Will Direct Ship improve the base-level process," and, if so, "What are the benefits?"

HQ ACC's 1st Fighter Wing selected the CRS Engine Shop as the best (representative sample) site for testing Direct Ship based on the number of Not Reparable This Station (NRTS) assets processed daily that were eligible to ship via express carrier. Other factors for choosing the CRS Engine Shop were related to manning considerations and minimizing disruption to customers. Personnel from the Combat Oriented Supply Organization (COSO) were temporarily assigned to CRS to support the test.

Working with HQ ACC and 1st Fighter Wing Maintenance, Supply and Transportation personnel, the Reengineering Team used the As Is process model as the starting point to develop the process changes required to implement Direct Ship. As a result, the Direct Ship To Be process model was developed and used by CRS Engine Shop personnel to test the new Direct Ship process.

Initially, the test plan called for installing a Cargo Movement Operations System (CMOS) terminal in the CRS Engine Shop. However, we discovered CMOS did not have the capability to produce multiple shipping manifests for the same carrier. As a result, a FedEx PowerShip terminal was installed in the CRS Engine Shop. It should be noted that this confined the test results to a single express carrier.

Minor CRS facility changes were made to provide a separate processing area with sufficient storage space to house the PowerShip terminal, an SBSS terminal, and appropriate packing material. Doing so required moving local area network and phone lines to the new area. Additionally, roller top tables were brought in to optimize the movement of packages. Boxes,

tape, bubble wrap, tape guns and other packing supplies were obtained from TMF to support the test.

FedEx trained CRS personnel in the use of PowerShip. Personnel from the Traffic Management Flight (TMF) trained CRS personnel on the requirements of shipping and provided updates on Transportation Account Codes (TAC) and packaging policies as needed. CRS personnel used the To Be Direct Ship process model to insure the test process was implemented as designed.

We hypothesized manpower savings would be realized by eliminating duplicate handling by TMF inspecting and repackaging paperwork and assets. We also hypothesized manpower savings would be realized by eliminating trips by CRS personnel to deliver express carrier-eligible packages to TMF.

To test these hypotheses, time and motion studies were performed to collect data and compare the before and after processes. The process for turning in assets from Maintenance to CRS remained unchanged; however, the CRS Engine Shop currently signs a Maintenance Log to verify receipt of the asset. When SATS is implemented at the 1st Fighter Wing, the practice of signing a log will no longer be necessary.

As Is Shipping

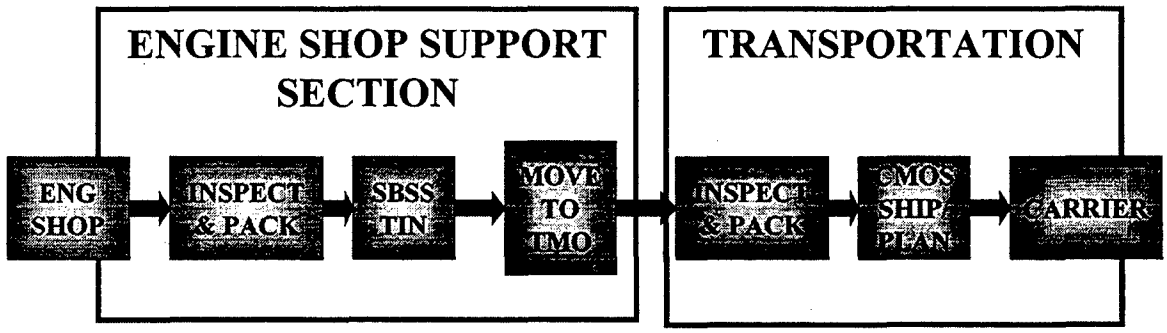

Figure 1 - As Is Shipping Process

4.1.1 As Is Shipping Process

The As Is shipping process begins when an asset is declared Not Reparable This Station (NRTS) by intermediate maintenance or is turned in as a Direct NRTS asset. The paperwork turned in with the asset to the Support Section includes the Due-In From Maintenance (DIFM) copy of the DD Form 1348-1, an AFTO Form 350 Tag, and any applicable Condition Tags.

The Supply technician inspects the asset and paperwork upon receipt. In some cases, the Maintenance technician may require the Supply technician to sign a logbook to show the asset has been turned in.

The Supply technician then processes a Turn-In (TIN) Transaction in the Standard Base Supply System (SBSS) which determines the appropriate repair location based on the SBSS-produced base repair capability assessment. If no local repair capability exists, the asset is processed for shipment to the selected repair location.

The Supply technician uses the SBSS to print the 6-part DD Form 1348-1 for the shipment. Copies 1 and 2 are placed inside the container with the asset. Copy 3 is placed on the outside of the container in a packing list envelope that the Supply technician attaches to the container. Copies 4, 5, and 6 are moved with the asset and Condition Tags to Base Transportation (TMF). The timing of the actual movement of the asset to TMF depends upon the priority of the shipment.

Processing the TIN Transaction automatically generates a Ship (SHP) Transaction when certain conditions are met. When the Ship Transaction is generated, it triggers two actions in SBSS:

1) An Advanced Shipment Notice (ASN) is sent from SBSS to the shipping base's Cargo Movement Operations System (CMOS) through an Interactive Communications Interface (ICI). This ASN is matched to the asset when it is brought to the Transportation function for shipment.

2) The local inventory is adjusted and, when necessitated by stockage policy, a stock order for replenishment is initiated.

When the asset is delivered to TMF, documentation is checked to insure the appropriate paperwork accompanies the asset. Copy 4 of the DD Form 1348-1 is retained in TMF's DD1348-1/DD1149 file. Copy 5 is attached to the commercial carrier's paperwork (FedEx keeps for 10 years) and Copy 6 is destroyed. If there is an error in the paperwork, Supply must correct the problem before the asset will be accepted by Transportation. Once the paperwork is correct, TMF evaluates whether or not a special container is required. If a special container is required and the asset is turned in without one, an AF Form 451, Request for Packaging Service, must be prepared by Supply before Transportation will accept the asset.

The Transportation portion of the NRTS process begins when the SBSS places the ASN in a suspense file. Once the asset and its container have been accepted by TMF, Transportation attempts to match the asset information to an ASN Transaction. If no ASN Transaction exists, the Transportation technician will manually enter the asset documentation into CMOS. If Transportation cannot resolve the discrepancy between an ASN Transaction and the asset information, the asset will be returned to Supply for problem resolution.

TMF inspects and repacks the asset in the container, and either processes a direct shipment or processes the asset for consolidated shipment. TMF determines the mode of transport (commercial carrier, military conveyance, or some combination of both) and arranges for the asset to be moved.

In the commercial express carrier process, the TMF shipment planner will open the transaction in CMOS and initiate booking. Express carriers have almost universally become participants in

the Industry Information Processor (I2P) program, so TMF can book shipments in CMOS and automatically update a carrier's information system. TMF then determines the correct funding for the transportation and prints a shipping label from CMOS. The shipping label is affixed to the container and the package is placed in the appropriate area to await carrier pick up. When the carrier arrives, TMF prints the manifest for that express carrier.

When the ASN Transaction and asset are matched and the shipment is booked for movement, a Shipment Suspense Card (SSC) Transaction is passed from CMOS to SBSS through ICI to show the Transportation Control Number (TCN), mode of shipment, and date shipped in SBSS. At the same time, CMOS will process an update to the Global Transportation Network (GTN) and the Advanced Traceability and Control - Air Force (ATAC-AF) systems.

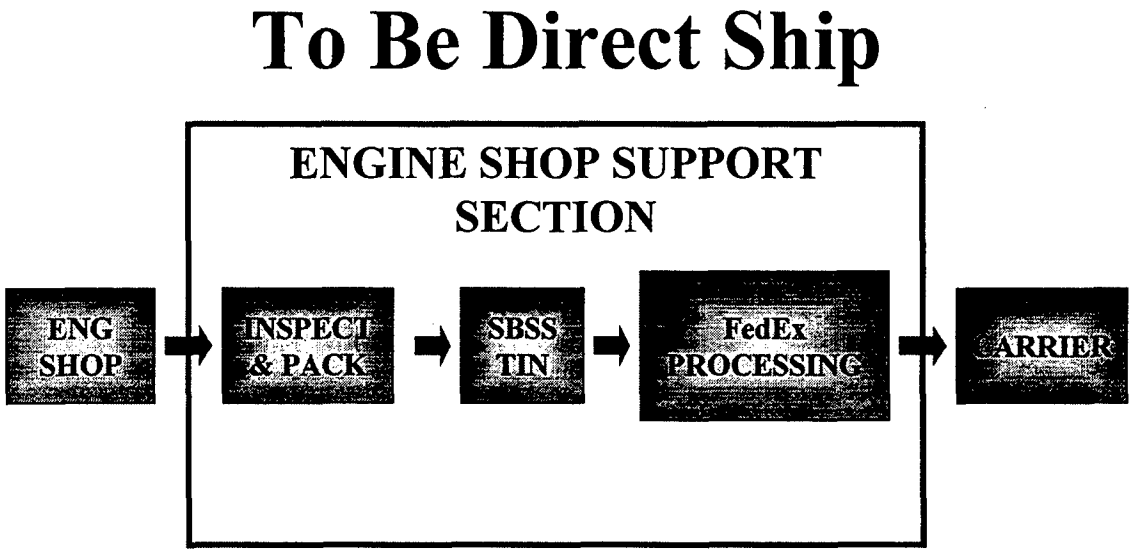

Figure 2 - To Be Direct Ship

4.1.2 To Be Direct Ship Process

The To Be Direct Ship process begins when an asset is declared Not Reparable This Station (NRTS) by intermediate maintenance or is turned in as a Direct NRTS asset. The paperwork turned in with the asset to the Support Section includes the DIFM copy of the DD Form 1348-1, an AFTO Form 350 Tag, and any applicable Condition Tags.

The technician inspects the asset and paperwork when the asset is received. In some cases, the Maintenance technician may require the Supply technician to sign a logbook to show the asset has been turned in. If the unit is equipped with SATS, the technician can scan the bar-coded DD Form 1348-1 into SATS. If the DD Form 1348-1 is not bar-coded, the technician can manually enter the data via the SATS keypad. If the unit is not SATS equipped, the technician will sign Maintenance's copy of the DD Form 1348-1 and/or a logbook kept by Maintenance to record asset turn-in.

At this point, the technician determines whether or not the asset is packaged in a suitable container. If not, the technician either repackages the asset in an available container or completes an AF Form 451 to request an appropriate container from Transportation. Transportation will assist the technician in obtaining the appropriate container.

When the paperwork is correct, and the asset is packaged in the proper container, the technician processes a Turn-In (TIN) Transaction in SBSS or SATS. The TIN also triggers SBSS inventory adjustments, and when required, stock replenishment activity.

Units equipped with SATS can now print the appropriate label and affix it to the asset.

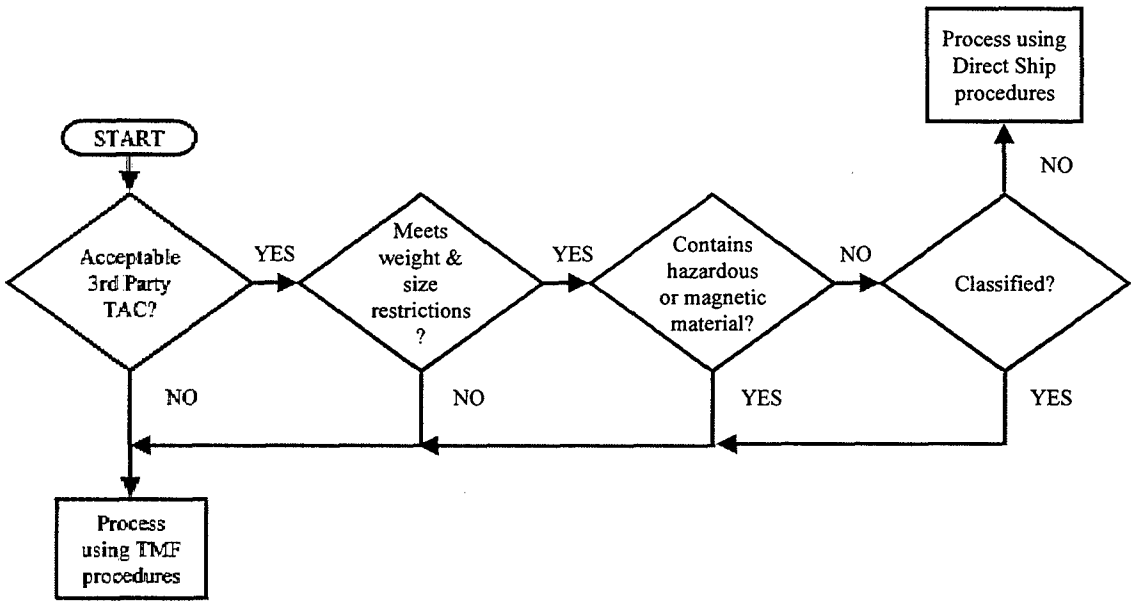

Figure 3- Express Carrier Eligibility Decision Tree

The technician then goes through a decision process to determine if the asset meets express carrier eligibility requirements (See Figure 3). Handling of items not express shipment eligible remains unchanged in the To Be Direct Ship process.

If the asset meets express carrier eligibility requirements, the technician will move the express carrier-eligible asset to the PowerShip Terminal where the asset is weighed and appropriate data is entered into PowerShip. PowerShip processes the shipment and prints the appropriate shipping labels. The technician affixes the shipping labels to the package and moves the asset to the carrier pickup area. The technician then inputs a Shipment Suspense Card (SSC) Transaction into SBSS to delete the Advance Shipping Notice (ASN) from the suspense file that will be sent to CMOS.

For non-SATS units, the technician prints three copies of the TIN image from SBSS, gives one copy to Maintenance to confirm receipt of the asset, sends one copy to document control, and retains one copy which will be destroyed after the retention period expiration date. The TIN

Transaction triggers the creation of the SHP Transaction, printing of the 6-part Ship (SHP) DD Form 1348-1 document, and passing of the SHP Transaction from SBSS, via the ICI, to CMOS. Copy 1 and Condition Tags are placed inside the container with the asset and the container is sealed for shipment. Copies 2 and 3 are placed on the outside of the container in a packing list envelope that the technician attaches to the container. Copy 4 is placed in the shop's files and will be destroyed after the retention period expires. Copies 5 and 6 are destroyed. When SATS is implemented, SATS's automated record keeping will eliminate the need for this "paper trail."

4.1.3 As Is versus To Be Direct Ship Comparison

The asset inspection process and the packing process at CRS remained unchanged.

Under the As Is process, after CRS packed and sealed the container, assets were placed in a holding area for consolidated movement to TMF. The number and timing of trips to TMF were driven by factors such as: shipment priority, consolidation with other trips, workload variances/opportunities, and TMF requirements. Under the As Is process, when assets arrived, TMF opened the sealed container, reinspected the asset and paperwork, and repackaged the asset as required. This part of the TMF process is eliminated by Direct Ship for express carrier-eligible shipments.

Due to several short-comings in the current CMOS program[4], CMOS data entry for production of shipping labels and manifests was replaced by FedEx's PowerShip process during the CRS Engine Shop Direct Ship test. It should be noted that the use of PowerShip instead of CMOS eliminates the competitive carrier selection process. If CMOS were enhanced to include the capability of producing multiple manifests for the same carrier, competitive carrier selection at the shop level would be possible.

The elimination of transporting small, express carrier-eligible assets to TMF and shifting production of shipping labels and carrier manifests to the CRS Engine Shop are the two changes of greatest potential impact.

Analysis shows that moving the process to CRS did not significantly change the actual hands-on time spent processing a parcel for shipment. While this eliminated the need for TMF to verify paperwork and repackage assets, the time savings was offset by FedEx processing steps added to CRS's workload. Therefore, the only potentially significant time saving remaining was in the elimination of movement of the packages to TMF.

To measure this impact, we captured the pre- and post-test number of trips made by CRS personnel to take packages to TMF. Even after test implementation, the CRS Engine Shop was averaging two trips per day to move non-express carrier-eligible property to TMF[6]. While we

[4] The TMF explained that CMOS required a stand-alone computer because the CMOS program crashed when loaded on any computer with other programs, such as Windows and Microsoft Office. However, the primary factor for not using CMOS for our Direct Ship test is that it can only produce one manifest per carrier for the base.

successfully eliminated trips on some days, non-express carrier-eligible package movement was still required on others, thus preventing the total elimination of trips to TMF on a consistent basis.

The Reengineering Proof-of-Concept (AFLMA Final Report LM9617100) and other Dyess Express documentation showed that a scheduled pickup and delivery service successfully reduced vehicle usage. Shaw's Transportation/Supply Merger also demonstrated time-definite delivery with on-call service (as required) could be very successful in reducing the total number of trips made by organizations. Analysis of the Pickup and Delivery Log used to track deliveries from P&D to the CRS Engine Shop showed an average of 2.63 delivery runs per day.[5] This compared to 2.18 average daily trips from CRS to TMF to deliver non-express carrier-eligible cargo. Implementation of such a time-definite pickup and delivery service implemented in concert with Direct Ship procedures will allow full realization of the savings discussed below.

4.1.4 Cost/Benefit Analysis

With the Direct Ship initiative, there are two primary areas of potential savings. One is in reduced manpower, the other in reduced vehicle usage. These potential savings are derived from our test site at the CRS Engine Shop at Langley AFB.

In order to quantify these potential savings, we took time and motion measurements for the following processes:

- Packaging and FedEx Processing
- Package Movement to TMF

4.1.4.1 Packaging and FedEx Processing

The specific time and motion measurements we took to calculate potential manpower savings encompassed locating a box, packing an asset, processing the package in PowerShip, labeling the box, processing an SSC Transaction in SBSS and printing the FedEx manifest. These actions had been transferred from TMF to the CRS Engine Shop. We measured these processes at both TMF and CRS for comparison purposes. Our analysis showed the time it took the CRS Engine Shop to process an asset for shipping with PowerShip was not significantly different from the time it

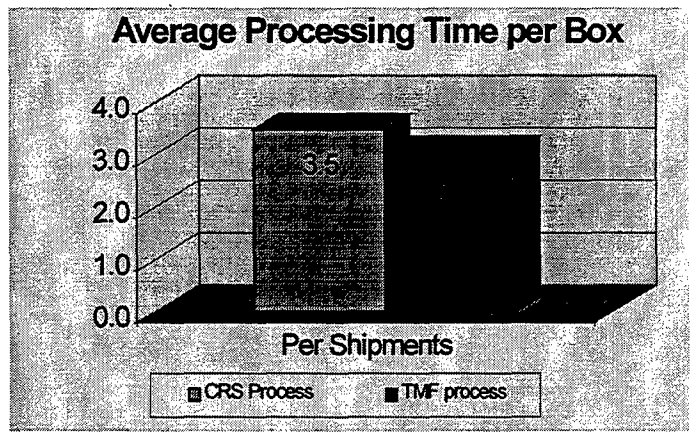

Figure 4 - CRS-TMF Processing Time Comparison

[5] Source Data: Appendix C-1, Tab E - Daily Delivery Analysis

took TMF to process an asset for shipping (packaging, labeling, etc.) with CMOS (Figure 4). Before the Direct Ship test, CRS had an average of two trips per day. During the test period CRS continued to have an average of two trips per day[6] for oversized packages and/or small packages that did not fit the criteria for express shipping.

Table 1 - Manpower Impact Computation

	14.6 packages per day
x	3.5 minutes
	51.1 minutes per day
x	20.99 days
	1073 minutes/month
÷	60 minutes/hour
	17.88 hours/month
÷	151.5 Man-hours Available
	0.118 Workload Increase

As Table 1 shows, during the test period CRS Engine Shop personnel processed an average of 14.6 express carrier-eligible packages per day[7]. The average time to process a single package was 3.5 minutes[8], yielding an average increase in workload of 51 (51.1) minutes per day. Using the manpower standard of 20.99 average working days per month, CRS's monthly increase in workload was 17 hours 53 minutes per month. To determine the manpower impact, we divided the monthly increase in workload by the Air Force Man-hour Availability Factor of 151.5 hours per month, which resulted in a 12 percent of a manpower position increase. Because the CRS-TMF processing time comparison shows there is not a significant difference in the hands-on times spent processing these shipments, this 17.88 hours per month increase for CRS would be offset by a corresponding decrease in TMF processing times for the same packages.

Although the volume of small packages for CRS represents approximately 23 percent of TMF's outbound small package workload,[9] this does not equate to a 23 percent reduction in TMF's manpower requirement. TMF's workload, after elimination of the parcels that would be shipped by CRS, is composed of parcels with more labor-intensive processing requirements, such as hazardous, classified, oversized, overweight, and other items with more complex packaging and transportation needs. Therefore, while the number of small parcels may have been reduced, the complexity of the remaining workload prevents a corresponding decrease in TMF manpower. The need to maintain TMF's specialized expertise to handle these more complex items remains essential, even with units using Direct Ship for express carrier-eligible packages.

4.1.4.2 Package Movement to TMF

Savings for package movement to TMF accrue in the vehicle Operations and Maintenance (O&M) costs (based on mileage reductions) and manpower savings (in terms of movement

[6] Source Data: Appendix C-2, Analysis of Daily TMO Trips Post - Direct Ship

[7] Source Data: Appendix C-3, Number of FedEx Shipments

[8] Source Data: Appendix C-4, CRS-TMF Comparison. These measurements were taken fairly early in the test process. We believe over time, the CRS processing times will normalize to times similar to those observed in TMF (approximately 3.1 minutes per package).

[9] Analysis of Transportation data shows the average workload for Langley AFB's small outbound parcels is 1,350 packages per month. CRS processes an average of 14.6 packages per day. Multiplied by 20.99 average work days per month, this yields 306 packages per month. Therefore 306 divided by 1,350 = 23% of TMO's average total monthly outbound small package workload.

time). We defined the movement time as the time to load the vehicle, drive to TMF, unload the vehicle, wait for TMF acceptance of the property, and return to CRS.

To compute the potential vehicle savings, we used the Consolidated Analysis and Reporting System (CARS) FY 1997 total cost per mile data for a B261, Stake Bed truck (the type used by CRS).

Trips from CRS to TMF are 3.6 miles round trip (see Table 2) and the unit makes approximately 2 trips per day, which equals 7.2 miles per day. Multiplying this by the Operations and Maintenance (O&M) cost for a B261 stake bed truck ($0.23 per mile), we arrive at $1.66 vehicle O&M cost per day.

Table 2 -Vehicle O&M Calculations

	3.6 miles (round trip)
x	2 trips per day
	7.2 miles per day
x	$0.23 O&M Cost per mile
	$1.66 O&M Cost per day
x	20.99 days/month
	$34.76 Cost per month
x	12 Months/year
	$417.11 O&M Cost per year

Multiplying this cost per day by 20.99 average working days per month yields $34.76 per month, or $417.11 in Vehicle O&M cost per year for the CRS Engine Shop. This cost would be eliminated if both trips per day were discontinued.

We also gathered time and motion data for the movement process of delivering property from CRS to TMF. This process required two people per trip.

Table 3 shows the computations for arriving at the daily manpower savings if the daily trips to TMO were eliminated. Two people require 1 hour 47 minutes movement time[10]. Multiplying the resulting 3.56 hours per day by 20.99 average working days per month yields 74 hours 43 minutes per month. Dividing this time by 151.5 hours per month, resulted in a 49% reduction of workload for one manpower position. Therefore, if both daily trips to TMF are eliminated, CRS will gain approximately one-half person who would then be available to work higher priority mission workload at CRS.

Table 3 - Per Day Manpower Savings

	1.78	hours per day
x	2	people per trip
	3.56	hours/day
x	20.99	Avail days per month
	74.72	hours/month
÷	151.5	Man-hours Available
	0.49	

Table 4 - Annual Savings Potential

	Calculated Savings (E-5)	
	74.72	hours saved per month
x	12	months per year
=	896.64	hours per year saved
x	$18.81	hourly rate (E-5)
=	$16,865.80	Annual savings

Table 4 reflects the dollar savings from eliminating two trips to TMO. Multiplying the 74.72 hours per month by 12 produces an annual potential manhour saving of 896 hours 38

[10] Source data: Appendix C-5, CRS-TMF Delivery Times Tab

minutes. Applying the E-5 pay rate[11] (Table 5), which is the average grade of CRS Engine Shop Support Section personnel who perform this task, results in an annual labor savings of $16,866 by eliminating the two trips per day.

Table 5 - E-5 Pay Rates

Military Pay Rates - E5	
Annual	$39,119.00
Monthly	$ 3,259.92
Weekly	$ 752.59
Daily	$ 150.46
Hourly	$ 18.81

Together, the annual Vehicle O&M savings plus the labor savings result in total savings for the CRS Engine Shop of $17,283 per year. Since this savings only represents the CRS Engine Shop, which is 23 percent of Langley's Total Direct Ship Express Carrier Eligible Outbound packages, then Langley's potential Total Annual Savings for direct shipping is $75,143. HQ ACC characterizes its bases as Category 1 (Large Base) or Category 2 (Small Base). According to HQ ACC staff personnel, there are eight Category 1 bases and eight Category 2 bases.[12] When Langley's Direct Ship savings (see Table 6) are multiplied by the 8 Category 1 bases and 2/3 of those savings are multiplied by the eight Category 2 bases, ACC's estimated potential Total Annual Direct Ship Savings is $768,382[13]

4.1.5 Implementation Issues

Certain criteria should be considered before implementing Direct Ship. There needs to be a support section at the shipping location with sufficient manpower to handle the increased workload. Adequate facilities must be available to handle and process any packages to be shipped. The facilities must include materiel handling equipment, LAN lines, SBSS lines, and appropriate holding space. A final consideration is whether there will be sufficient workload at the location to warrant it as an express carrier pickup location, since FedEx requires a minimum of 10 FedEx-eligible packages per day for each area using their PowerShip terminal.

CMOS's inability to produce multiple shipping manifests at a base for the same carrier limited test results to a single express carrier. The

Table 6 -ACC Total Potential Annual Direct Ship Savings

	$17,282.91	Annual CRS Engine Shop Savings for Direct Ship
/	23	CRS has 23% of Langley's Total Direct Shipping
=	$751.43	Savings for Each Percent of Langley's Direct Ship
X	77	Percent Direct Ship from All Others (100 - 23 = 77%)
=	$57,860.18	Potential Savings for All Others (77%)
	$75,143.09	**Total Potential Annual Savings Across Langley (23% + 77%)**
	CATEGORY 1 BASES	
	(Langley, Davis Monthan, Holloman, Shaw, Barksdale, Moody, Mt Home, and Nellis)	
	$75,143.09	Langley's Potential Savings
X	8	ACC has 8 Category 1 Bases like Langley
	$462,881.46	**Total Potential Savings for All Category 1 Bases**
	CATEGORY 2 BASES	
	(Seymore Johnson, Dyess, Minot, Whiteman, Cannon, Ellsworth, Offutt, and Beale)	
	$75,143.09	Potential Savings of a Cat 1 Base
X	0.66	Category 2 Bases are approx. 2/3 size of Cat 1 Bases
	$49,594.44	Savings Potential of a Category 2 Base
X	8	ACC has 8 Category 2 Bases
	$305,501.76	**Total Potential Savings for All Category 2 Bases**
	$768,383.22	**Total Potential Direct Ship Savings for ACC**

[11] Pay rates were extracted from AFI 65-503, Table A20-1, Military Pay Rates per Unit of Time - Air Force based on FY1999 President's Budget, dated 27 Feb 98.

[12] A Category 2 base is approximately 2/3 as large as a Category 1 base.

[13] Source Data: Appendix C-6, Direct Ship Savings Computation

ramifications of limiting the work to a single carrier should be carefully weighed when considering Direct Ship implementation.

4.1.6 Other Observations

Benefits observed from implementing Direct Ship at Langley were limited due to the inability to completely eliminate daily trips to TMF. In order to realize the full potential savings of implementing Direct Ship at a unit, it is necessary to eliminate trips the unit makes to transport non-express carrier-eligible property to TMF. A scheduled pickup and delivery service could accomplish this goal. The use of a scheduled pickup and delivery service much like Dyess Express or that used in the Shaw Transportation/Supply Merger has been successfully demonstrated to produce savings from reduced vehicle use, elimination of unit vehicles, and manpower reductions.

We noted that CRS's workload could be characterized as variable with periods of high and low activity throughout the day. The 12 percent increased workload Direct Ship represents can be accomplished during periods of low activity as long as the workload has been processed before the FedEx pick-up scheduled for 1500 hours each day. Although it is difficult to quantify the benefit, this enables CRS an opportunity to smooth the fluctuations in their workload and focus on higher priority mission requirements as needed.

During the test, we also noticed that the CRS Engine Shop was manually producing an AF Form 2005. Automating the process was relatively simple and we did so at that time. Consequently, TINs are now printed on 3-part paper directly after data input to SBSS. This can yield an unanticipated benefit with savings in time[14] as well as the added benefit of increased data accuracy.

The CRS Engine Shop currently signs a Maintenance Log to verify receipt of assets turned in from Maintenance. When SATS is implemented at the 1st Fighter Wing, the practice of signing a log will no longer be necessary.

[14] Hand printing the 2005 form takes an average of 1.24 minutes. Automated printing takes 21.83 seconds to the time the data is submitted to the printer. If the CRS Engine Shop obtains a new, faster printer, the printing time will be only seconds and the automated process would save time. However, the old printer at CRS took and additional 93.8 seconds to print the TIN on the 3-part paper. The old printer has since been moved and technicians are forced to walk to a printer set up in an adjacent room to retrieve the printed TIN, resulting in minimal savings as of 1 Sep 98.

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SECTION 2 -- DIRECT RECEIPT

4.2 RECEIVING PROCESS

For the purpose of this study, we defined Direct Receipt as the process of receiving packages directly at base-level non-centralized warehouse locations.[15]

The Phase I report, "USAF Logistics Asset Sustainment As Is Process," identified Direct Receipt as a potential process improvement for eliminating unnecessary asset handling and data processing. HQ ACC agreed to work with the Reengineering Team to answer the questions: "Will Direct Receipt improve the base-level process," and, if so, "What are the benefits?"

HQ ACC's 1st Fighter Wing selected the CRS Engine Shop Support Section as the best (representative sample) site for testing Direct Receipt based on the percent of receipts processed. Other factors for choosing the CRS Engine Shop Support Section were related to manning considerations and minimizing disruption to customers.

Working with HQ ACC and 1st Fighter Wing Maintenance, Supply and Transportation personnel, the Reengineering Team used the As Is process model as a starting point to develop the process changes required to implement Direct Receipt. The ACC To Be Asset Sustainment Process Model includes SATS and non-SATS processes as well as the Shaw Transportation/Supply Merger concepts and the Dyess Express Pickup and Delivery concept.

To test the Direct Receipt concept, we needed to change the delivery address assigned to SBSS requisitioned assets. Use of the DD Form 1348-1 is "mandatory for all shipments to DOD customers, including FMS and contractors, from DOD and GSA shipping activities."[16] This form requires a Department of Defense Activity Address Code (DODAAC) to specify both the delivery address and billing address for material ordered. While use of the DODAAC continues to be mandatory, the services will be limited to delivery addresses that have been loaded into the DODAAC directory. Since we were not trying to change the billing address, we requested and obtained a FY DODAAC for the CRS Engine Shop Support Section.

The next requirement involved facilitating the ordering process. Each National Stock Number (NSN) that the base uses is loaded into SBSS with a set warehouse location for inventory. Only one storage location can be loaded per NSN for each base. Therefore, we examined the NSNs that are stored in Warehouse 04, the CRS Engine Shop Support Section. There were over 750 NSNs loaded in SBSS at Langley AFB for storage in Warehouse 04.

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[15] The rationale for using this definition is discussed in Section 4.2.5.1

[16] DOD 4000.25-1-M, Chapter 4, Chapter 5, *Receipt & Release of Materiel,* "A.1. The DOD Single Line Item Release/Receipt Document, DD Form 1348-1, or the Issue Release/Receipt Document, DD Form 1348-1A and the optional APL (Automated Packing List) are prepared by the supply/shipping activity. These documents are used for selecting, packing, shipping, and receiving materiel. They are also used as a record of receipt transaction and/or the data source for preparation of other documents. The DD Form 1348-1 or DD Form 1348-1A is mandatory and the APL is optional for all shipments to DOD customers, including FMS and contractors, from DOD and GSA shipping activities."

A Requisition Exception Code (REX) modifier had to be loaded for each NSN selected for direct delivery to CRS. This REX modifier overrides the delivery destination, and ALL requisitions for the NSN would be delivered to that location, regardless of requestor. (In other words, for our test case, if anyone else at Langley AFB ordered that NSN, the CRS Engine Shop Support Section would receive the part and subsequently have to deliver it {or arrange for its delivery} to the requestor.) To minimize the probability of this occurring, the list of NSNs currently stored in their location (Warehouse 04) was scrubbed to insure only single-user items were identified for REX modification.

As we were preparing to test Direct Receipt, HQ ACC decided to implement improvements identified under the Shaw Transportation/Supply Merger, which included using the Direct Receipt process. Rather than consuming resources collecting and analyzing data to substantiate a process already being implemented, we elected, with ACC concurrence, not to fully test the Direct Receipt portion of our original test objectives. However, we did ask that a test be conducted on one NSN to demonstrate that using the REX modifier to change the DODAAC delivery address from base supply to another location (CRS Engine Shop Support Section) worked.

During this test, an entry error loading the REX modifier caused the address change to be applied to all the NSNs maintained at Warehouse 04, rather than the one sample item. This unfortunate error did enable us to identify some considerations for loading the REX modifiers and made us aware of potential problems in the delivery cycle. For example, when items began arriving at the CRS Engine Shop Support Section, inbound property became co-mingled with outbound property. The result created some confusion and, in the case of one item, resulted in the asset being sent out and returned via Federal Express the same day. Our recommendations include requiring any organization selected to implement Direct Receipt insure they have a method of preventing the co-mingling of inbound and outbound property.

Overall, we were able to capture only a very small sample of data supporting the Direct Receipt process at the 1st Fighter Wing. Analysis of this data is included in this report. Additionally, test results from the Shaw Transportation/Supply Merger, the Dyess Express study, McConnell's Parts Movement Study, and SATS implementation are discussed in this report. These studies provide additional information that supports implementing the Direct Receipt process.

4.2.1 As Is Receiving Process[17]

The As Is Receiving process (Figure 5) begins when an SBSS-requisitioned asset is delivered from off-base to Central Receiving and in-checked by Base Transportation (TMF). TMF technicians inspect the package and paperwork. They either scan or manually collect the asset shipping information for input into CMOS, which in-turn sends receipt notification to GTN and

[17] The As Is Process discussed here does not include SATS procedures since it had not been implemented at the time the model was developed.

ATAC-AF[18]. If package discrepancies exist, such as damaged, over, or short, special actions must be taken. If there are no package discrepancies, the package is turned over to Base Supply (Receiving Section). Once all the carrier's cargo has been in-checked, TMF personnel sign the carrier's bill of lading and keep copies of the Commercial Bill of Lading (CBL) or Government Bill of Lading (GBL) for validation purposes.

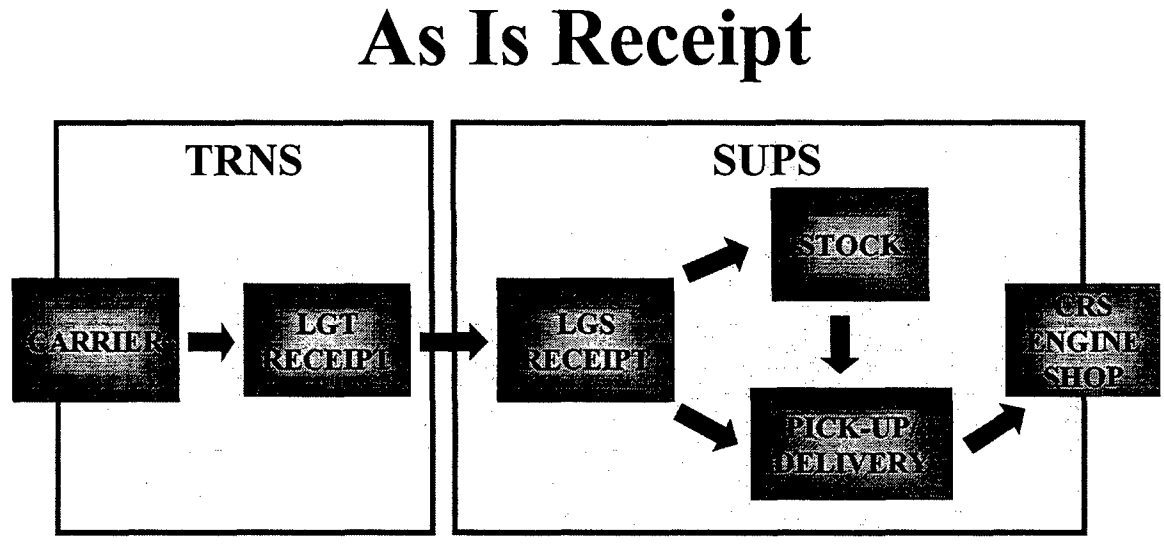

Figure 5 - As Is Receipt

Supply Receiving moves the asset to roller top tables for in-check, where the container, contents, and paperwork are inspected. If discrepancies exist, special actions must be taken. If no discrepancies exist, Supply inputs a receipt transaction for the asset (NSN) in the SBSS. The SBSS sends notification to the Source of Supply (SOS), clears the SOS Due-In Detail, and loads the appropriate information to the item stock record. The SBSS then searches for an existing Due-Out.

If a Due-Out does not exist, the SBSS generates a notice to stock and the asset(s) is placed in a temporary holding area for pickup by that NSN's warehouse personnel. Depending on the volume of receipts, each warehouse has routine pickup schedules for moving received property from Central Receiving to its warehouse storage location (e.g., one or more times a day).

If a Due-Out exists, the SBSS generates a Due-Out Release (DD Form 1348-1). The asset is placed in the Supply Pickup and Delivery holding area and, if the asset is a MICAP, the DD Form 1348-1 is date-time stamped. The Pickup and Delivery Section delivers packages based on priority. They load the package onto their delivery vehicle, move the package to its final destination, and return the proper documentation to the Supply Squadron. The customer receives the asset, signs the DD Form 1348-1, and retains one copy. The signed copy of the

[18] The Dyess Proof-of-Concept report states on page 8, "ATAC-AF, which provides overall visibility of assets in transit, is programmed to automatically default to the SBSS D7 and D6 reports when CMOS data is not available for a shipment."

DD Form 1348-1 is taken to Supply Document Control. Copies 3 and 4 are used for DIFM tracking (if applicable). Remaining copies are destroyed.

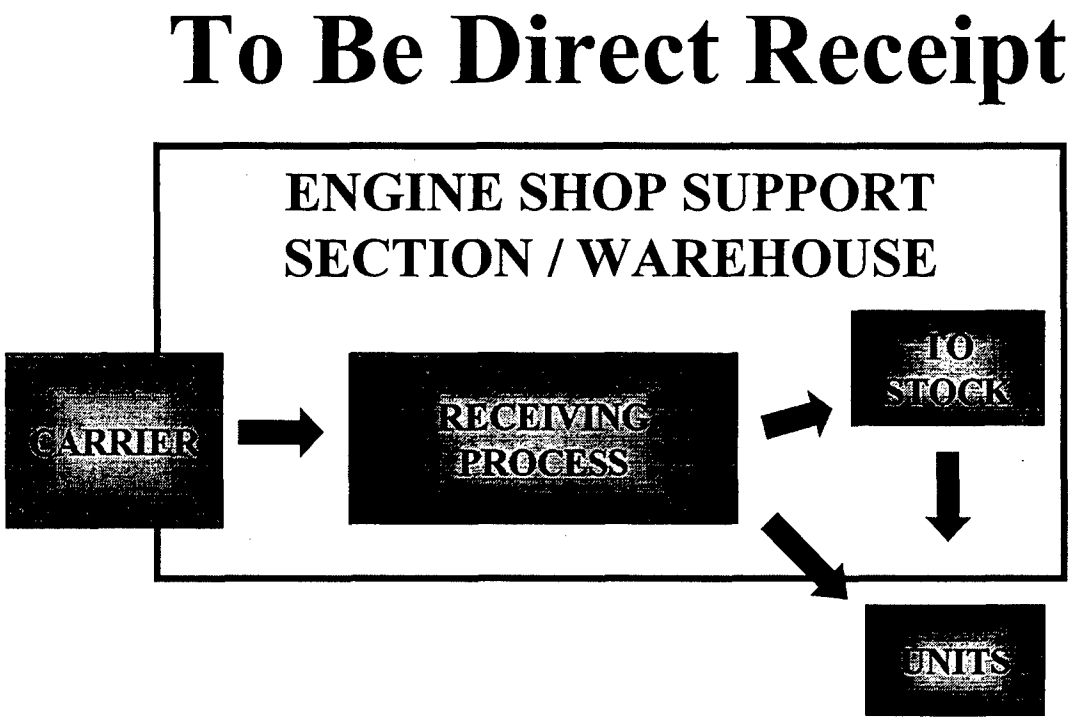

Figure 6 - To Be Direct Receipt

4.2.2 To Be Direct Receipt Process

The To Be Direct Receipt process (Figure 6) begins when the carrier delivers the asset directly to a designated receipt location (bypassing Central Receiving.) When the asset arrives, technicians inspect the package and either forward the data to TMF or input the asset shipping information into CMOS, which sends receipt notification to GTN and ATAC-AF. The asset and paperwork are then inspected. If discrepancies exist, special actions must be taken. If no discrepancies exist, the technician inputs (via SATS or manual entry) receipt of the asset into SBSS. The SBSS sends notification to the SOS, clears the SOS Due-In Detail, and loads the appropriate information to the item stock record. The SBSS then searches for an existing Due-Out.

If a Due-Out does not exist, the SBSS generates a notice to stock and the asset is moved to its storage location for future issue to a customer. If the Direct Receipt location is not the designated storage location, the asset will have to be moved to the final designated location.

If a Due-Out exists, the SBSS generates a Due-Out Release and the asset is taken to or picked up by the customer. For non-SATS units, the customer receives the asset and one copy of the DD Form 1348-1 which the customer signs. One copy of the DD Form 1348-1 is given to Supply Document Control. Copies 3 and 4 are used for DIFM tracking (if applicable) and

remaining copies are destroyed. With SATS, the customer will receive the property using SATS procedures. SATS procedures eliminate the need for the DD Form 1348-1.

4.2.3 As Is versus To Be Direct Receipt Comparison

With Direct Receipt, property bypasses Central Receiving and all of its associated processing, queue, and inter-warehouse transfer times. Some tasks (e.g., TMF in-check and receipt processing in SBSS) are moved to the new receipt location. Because the CRS Engine Shop Support Section already performs asset in-check duties, we eliminated the duplicative processing at Central Receiving.

In the Direct Receipt test, as designed for Langley AFB, the TMF duties of CMOS input and discrepancy resolution were to be transferred from the base TMF to the direct receiving location. CMOS data entry, or the process of transferring data to TMF, was an added task (training required) to the Support Section at the direct receiving location. Transportation discrepancy resolution also represented a workload increase to the Support Section.

In our test, the CRS Engine Shop Support Section, as the customer, had the added workload of processing SBSS data for the receipt. The asset acceptance process, as outlined and modeled in the As Is Process, remains unchanged in the To Be process model.

4.2.4 Cost/Benefit Analysis

With the Direct Receipt initiative, there are several primary areas of potential savings: reduced property receipt cycle time, elimination of repetitive tasks, and reduced vehicle usage.

In our Direct Receipt test, as we designed it, the customer became the warehouse closest to the "true" customer (the ordering entity). In the case of the CRS Engine Shop Support Section, the property was being delivered to the same building as the "true" customer. While some delay is still experienced in getting the property into the "true" customer's hands, it is far less than the delays experienced when the property was processed through a central receiving function.

The process of receiving an asset at Central Receiving can be broken into the following three segments:

1. The time for TMF to in-check the asset
2. The time for Supply to in-check the asset
3. Delivery time to the customer.

Figure 7 - Central Receiving Process shows the various segments in the receiving process as well as the total property receipt cycle time. Property receipt cycle time is defined as the time from carrier arrival to the time the customer's support section signs for delivery of the asset from P&D. There are queue times within each segment as well as queue times between

segments. To determine how much time is consumed, we attempted to measure the average time an asset spent in each segment.

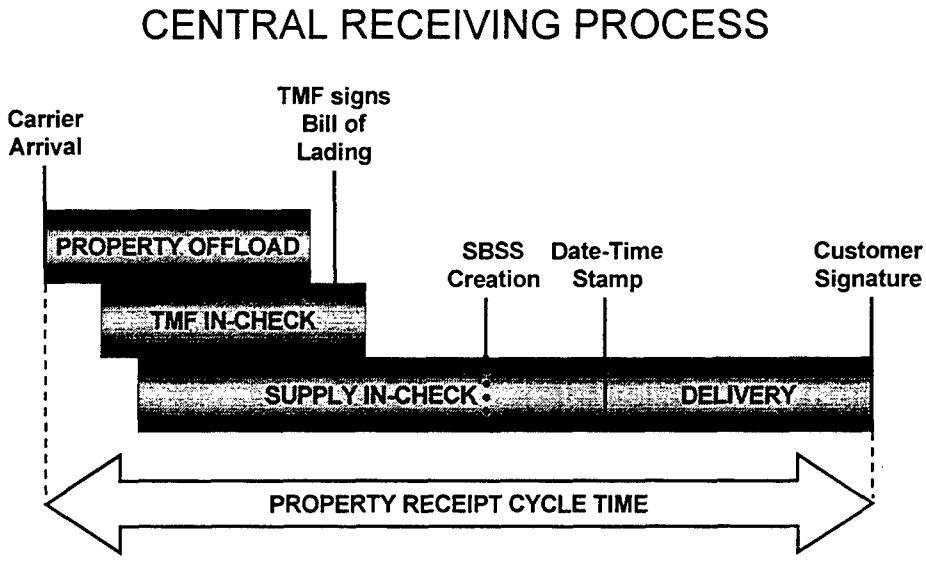

Figure 7 - Central Receiving Process

4.2.4.1 TMF In-Check

When a delivery truck arrives at the Central Receiving dock, Supply, Transportation, and/or the vehicle driver begins off-loading the vehicle. Usually wooden skids are moved to the door to facilitate moving the parcels once off-load is complete. As the property is off-loaded, TMF personnel verify the total package count and look for obvious container damage. Usually two Transportation personnel work the inbound property. One assists with off-loading, while the other begins CMOS in-check of the containers. Once the TMF person, who has been assisting with off-loading, completes verification of the package count and signs the carrier's manifest, he/she will assist the other TMF person in completing the CMOS in-check.

TMF in-check start time was defined as the time the delivery vehicle arrived at the Central Receiving dock. The process included the time to off-load the property, perform the appropriate in-check procedures, and turn the property over to Supply (stop time). Measuring this process proved difficult due to overlapping deliveries of multiple pieces of property to be in-checked by TMF. Often, Supply personnel do not wait for TMF to complete in-check of all the assets before beginning their own in-check process. As soon as TMF indicates they have in-checked an asset, Supply will move it and begin their in-check of that asset. Thus, while it may take TMF 20 minutes to in-check an entire truckload, the Supply in-check process has already begun. Even though a per piece sample of processing times can be taken, these times may be misleading as to the actual queue times of these packages, since they are batch processed.

We collected sample data using both manual and automated (HHT) CMOS in-check procedures. To insure we didn't overstate the case, we used the smaller number of the two in our calculation of total time to in-check an asset. Bear in mind that the benefits of Direct Receipt will be greater if TMF typically uses manual procedures versus automation. As can be seen by Table 7, CMOS in-check averaged less than half a minute per piece.[19] On average, it took 10 minutes from the time the carrier arrived until the last piece was in-checked by TMF.

Table 7 - CMOS HHT In-Check Times (with hand held terminal)

CMOS HHT In-Check Times (In Seconds)	
Mean	20.32
Standard Error	1.53
Median	16.73
Mode	#N/A
Standard Deviation	9.41
Sample Variance	88.54
Kurtosis	3.93
Skewness	1.97
Range	41.97
Minimum	12.06
Maximum	54.03
Sum	772.18
Count	38
Confidence Level(95.0%)	3.09

4.2.4.2 Supply In-Check

As stated earlier, Supply's segment of the in-check often took place concurrently with TMF in-check. Usually, as soon as TMF indicated they were complete with a piece, Supply technicians moved the property to roller top tables and began opening the containers, verifying the contents, entering receipt transactions in SBSS (creation in SBSS), and printing DD Form 1348-1.

Using data collected in the P&D logbook[20], we analyzed the time from SBSS creation to movement of the property to the P&D holding area. Table 8 shows that the average time from SBSS creation to the time an asset was date-time stamped at the P&D section was about 9 minutes. Note that this ignores any Supply in-check processing time that occurred before the transaction was created in SBSS. Table 9 shows that the average time for P&D (from date-time stamp) to deliver to the customer (customer signature) was approximately 21 minutes (Table 9). From this we can conclude that at least 30 minutes in Supply processing time can be eliminated from the customer wait times when we bypass Central Receiving.

Table 8 - Descriptive Statistics SBSS Creation to P&D Time-Stamp

Time from SBSS Creation to P&D	
Mean	9.17
Standard Error	0.40
Median	7
Mode	5
Standard Deviation	8.03
Sample Variance	64.44
Kurtosis	8.65
Skewness	2.55
Range	56
Minimum	1
Maximum	57
Sum	3694
Count	403
Confidence Level(95.0%)	0.79

[19] Source Data, Appendix C-7, HHT In-Check Times
[20] Source Data, Appendix C-1, Tab E -Daily Delivery Analysis

Time from P&D to Customer	
Mean	21.51
Standard Error	0.62
Median	20
Mode	19
Standard Deviation	12.39
Sample Variance	153.56
Kurtosis	0.25
Skewness	0.62
Range	67
Minimum	1
Maximum	68
Sum	8645.6
Count	402
Confidence Level(95.0%)	1.22

Table 9 - Descriptive Statistics P&D to Customer Times

Table 10 - Direct Receipt Processing Times

CRS Direct Receipt Samples	
Time	Items
2.45	1 box
2.97	1 pkg - 4 items
6.15	1 pkg - 735 small items
2.00	4 pkgs
2.00	1 box
2.00	1 box
2.00	1 box
2.80	**AVERAGE**

Comparatively, our analysis of the limited data sample collected to support the Direct Receipt process at the 1st Fighter Wing showed it took an average of 2 minutes 48 seconds (Table 10) processing time per package. This processing time was for Supply in-check only and did not include any CMOS processing. Therefore, we see a reduction in the time from SBSS creation to Customer signature from 30 minutes in Central Receiving to less than 3 minutes for Direct Receipt.

For the total property receipt cycle time, we know the TMF segment averaged 10 minutes, while the segment from SBSS creation to customer signature averaged 30 minutes. This means an average of at least 40 minutes is consumed in the cycle without accounting for the Supply property in-check times. Assuming all the property described in the P&D logbook arrived at 0900 hours via express carrier, we concluded the earliest average delivery time to the customer was approximately one hour. Thus we concluded an average of 20 minutes was consumed in the supply in-check segment of the property receipt cycle.

4.2.4.3 Customer Delivery

Contractually, express carrier delivery trucks must arrive at Langley's TMF Central Receiving between 0900 and 1100 hours. During the test period, when the express carrier delivery truck arrived at TMF at 0900 hours, the CRS Engine Shop assets were processed and delivered to CRS within an average of one to four hours.[21] Implementing Direct Receipt allows CRS to receive their express carrier-eligible assets on or about the same time of day the express carrier is contractually obligated to deliver those assets to TMF. As a result, CRS could receive these assets as early as 0900 hours. The only delay between receipt at the CRS Engine Shop Support Section and delivery to the customer will be the standard in-check processing time consumed when the item is delivered.

[21] Source Data: Appendix C-1, Tab F - Early-Late Analysis

Under the Shaw AFB Transportation/Supply Merger initiative, inbound property was redirected from Central Receiving at the main Supply warehouse to both the Aircraft Parts Store (APS) and the Flight Service Center (FSC). Shaw reported that prior to redirecting receipts, the APS made two trips daily to the main Supply warehouse to pick up inbound property going to stock. This resulted in a 6.7 hour average put-away time (the time from when a receipt was processed and when it was put in its storage location). The FSC made only one trip per day, resulting in property often remaining at the main Supply warehouse overnight (averaging 20 hours). During the 12-week test at Shaw AFB, put-away times were reduced to an average of 1.04 hours in the APS and to 28 minutes for the FSC.

Improving put-away times does not in and of itself improve response time to the customer. Figure 8 - Langley AFB Receipt Data, illustrates the volume of receipts flowing through the various warehouses at Langley AFB. Currently, 64 percent of all receipts at Langley AFB are Due-Out Releases (DORs). The remaining receipts are Notices to Stock (NTS). Of these, the Main Supply Warehouse receives 17 percent and the Aircraft Parts Store receives 8 percent. The Jet Engine Warehouse (CRS Engine Shop) receives 5 percent.

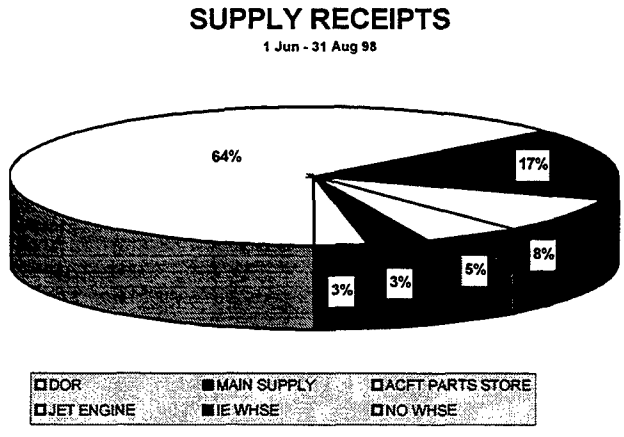

Figure 8 - Langley AFB Receipt Data

As Inventory Reduction initiatives reduce the amount of property being kept in stock, more and more orders will become DORs. As these DORs increase, the percent of property arriving to be delivered to the customer will also increase, so any reduction in the property receipt cycle time will improve customer response time. With Direct Receipt, as more and more receipts, including DORs, arrive at the warehouse/support section, the customer should see improved response times.

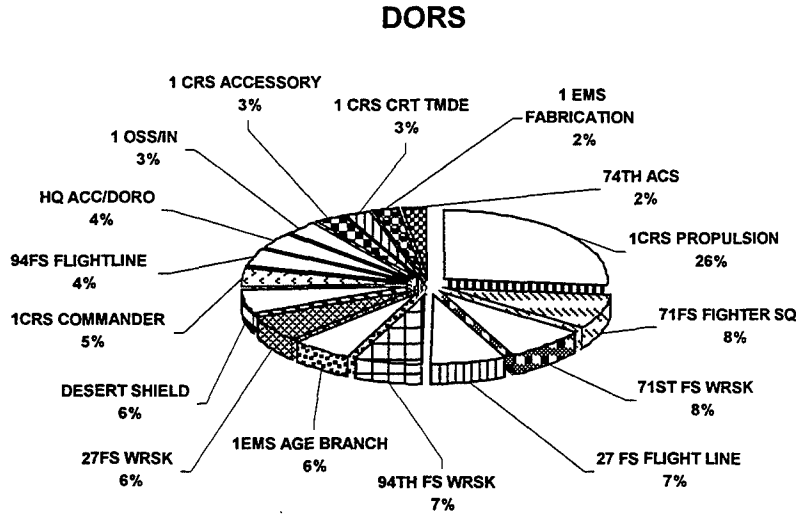

Figure 9- Langley AFB Due-Out Release Recipients

To calculate the potential annual savings from implementing Direct Receipt at Langley AFB, we added the total time it took one person from the P&D section to deliver property to the CRS Engine Shop Support Section (20 minutes). We did not include the time spent with the customer to receipt for the property. From our analysis of the P&D

Logbook (Table 12), we determined that P&D made an average of 2.6 trips per day to the CRS Engine Shop. Multiplying this by the time per trip, we arrive at a total of 52 minutes per day for one person in P&D to deliver parts to CRS. Using the standard manpower computations results in a total of 218.3 hours per year to perform this function. When this is multiplied by the E-5 Hourly pay rate, we arrive at a total annual savings from implementing Direct Receipt in the CRS Engine Shop of $4,106.15.

Analysis of DORs for Langley during the period of 1 June - 31 August 1998 shows that the CRS Propulsion shop received a total of 21 percent of the DORs. Using this as a baseline, we can state that other organizations must then account for the remaining 79 percent of DORS. If implementing Direct Receipt at the CRS Engine shop as 21 percent of the receipts saves $4,106.15 annually, then implementing Direct Receipt for the remaining organizations would save an additional $15,446.95, yielding a total annual savings of $19,553.10 at Langley AFB. Langley is one of eight Category 1 bases, which would mean if all eight implemented Direct Receipt, potential savings of $156.424.76 could be realized. Adding the eight Category 2 bases, which are 2/3 the size of a Category 1 base, would increase the annual savings potential by $103,240.34. The total potential annual savings from implementing Direct Receipt across all bases in ACC are $259,665.

4.2.4.4 Other Benefits

The benefits of bypassing TMF are not limited to reduced property receipt cycle time. Manpower is reduced, since the in-

Table 12 - Annual Savings from Direct Receipt

+	3.5	minutes	Avg P&D Load Time
+	13	minutes	Avg Round Trip to CRS
+	3.5	minutes	Avg P&D Unload Time
	20	Total Min	Total Time for One Person to Make One Round Trip Delivery
X	2.6	Trips/ Day	
	52		Total Minutes per day for Deliveries to CRS (One Person)
/	60		Minutes in a hour
	0.87		Hours Per Day
X	20.99		Days Per Month
	18.19		Hours Per Month
X	12		Months Per Year
	218.30		Hours Per Year
X	$18.81		E-5 Hourly Pay Rate
	$4,106.15		**Total Annual Savings for Direct Receipt**

Table 11 - Total ACC Potential Direct Receipt Annual Savings

	$4,106.15	Annual CRS Engine Shop Savings for Direct Receipt
/	21	CRS has 21% of Langley's Total DORs
=	$195.53	Savings for Each Percent of Langley's DORs
X	79	Percent Direct Ship from All Others (100 - 21 = 79%)
=	$15,446.95	Potential Savings for All Others (79%)
	$19,553.10	**Total Potential Annual Savings Across Langley (21% + 79%)**
	CATEGORY 1 BASES	
	(Langley, Davis Monthan, Holloman, Shaw, Barksdale, Moody, Mt Home, and Nellis)	
	$19,553.10	Langley's Potential Total Direct Receipt Savings
X	8	ACC has 8 Category 1 Bases like Langley
	$156,424.76	**Total Potential Savings for All Category 1 Bases**
	CATEGORY 2 BASES	
	(Seymore Johnson, Dyess, Minot, Whiteman, Cannon, Ellsworth, Offutt, and Beale)	
	$19,553.10	Potential Savings of a Category 1 Base
X	0.66	Category 2 Bases are approx. 2/3 size of Category 1 Bases
	$12,905.04	Savings Potential of a Category 2 Base
X	8	ACC has 8 Category 2 Bases
	$103,240.34	**Total Potential Savings for All Category 2 Bases**
	$259,665.10	**Total Potential Direct Receipt Savings for ACC**

check process is performed once only (by CRS), and assets are loaded and unloaded only one time.

Our general observations and conclusions are reinforced by several conclusions delineated in the Shaw Transportation/Supply Merger. Briefly recapitulated, the Shaw Transportation/ Supply Merger reached the following conclusions:

1) Direct delivery of property to the F-16 APS and FSC drastically reduced property receipt cycle time.
2) Moving Supply's P&D function to Transportation Vehicle Operations and developing delivery schedules for routine cargo resulted in significant reductions in vehicle O&M costs, vehicle resources, and manpower requirements.
3) Property receipt cycle time can be reduced and manpower requirements decreased through application of available technologies. Specifically, the SATS and CMOS interface, once developed and made available, will offer significant opportunities for resource reduction.

Additionally, benefits and conclusions delineated in the McConnell AFB Parts Movement Study, the SATS Technical and Functional Economic Analysis Reports, and the Reengineering Proof-of-Concept conducted at Dyess AFB add weight to our recommendations for implementing Direct Receipt.

4.2.5 Implementation Issues

4.2.5.1 Definition of Direct Receipt

During the Phase I study, many areas in the base-level receiving process were identified as potential candidates for improvement. The idea of delivering assets directly into the customers' hands, thereby totally bypassing the central receiving function and its associated delays, looked promising. However, there are several difficulties that impede implementation of this concept of Direct Receipt.

While the capability exists to deliver non-SBSS requisitioned items directly into the customers' hands (such as IMPAC card purchases), SBSS-requisitioned items present special challenges. Among these are: complying with data entry requirements for receiving materiel, limitations imposed by the existing data systems in terms of asset management, and financial constraints. We concluded that until data systems and processes are developed to overcome these impediments, the concept of delivering SBSS-requisitioned assets directly into the customers' hands couldn't be implemented. Therefore, the compromise definition of Direct Receipt used in this report is to deliver assets into the hands of the warehouse closest to the customer. Once data system improvements are made to remove the impediments to deliver directly to the ordering entity, implementing organizations should be able to realize further gains.

4.2.5.2 Determining Methodology

Any attempt to bypass Central Receiving requires insuring accomplishment of data system entry requirements currently in effect [22]. Therefore, moving the point of receipt to the customer requires making arrangements to accomplish requisite data entry. We concluded there are two possible methods to do this: move the data to the point of data input[23], or move the point of data input to the asset's location. With the second method, permutations can be made for moving the people with the terminals to perform data entry and/or training the personnel at the terminal's new location to perform that function[24].

Currently, CMOS must be used on a stand-alone, DOS-based, personal computer (PC). It cannot be run concurrently with any other system, such as SBSS, on the same PC. Therefore, every location selected for direct customer receipt will require a separate PC and communications link for a CMOS terminal. While it is certainly possible to do this, the equipment investment cost of communications connectivity and stand-alone terminals has to be multiplied for each location selected, and can quickly become prohibitive. In this case, economies of scale may be gained by keeping the process centralized.

Conceptually, Direct Receipt could apply to any asset, regardless of size or special handling requirements. However, there are some considerations that should be evaluated before implementing Direct Receipt. These considerations are addressed below.

The receiving location selected should be a designated SBSS warehouse with sufficient manpower to handle the increased workload. For example, the scope of the Shaw effort was restricted to high-volume operations such as the Aircraft Parts Store and the Flight Service Center.

Adequate facilities must be available to handle and process any packages to be received. The facilities must include suitable materiel handling equipment, LAN lines, SBSS lines, and sufficient holding space. Also, Direct Receipt implementation should be considered only at locations that are in close proximity to the requisitioning organization.

Direct Receipt REX modifiers should be applied only to NSNs that are used by a single customer, or to NSNs that are normally picked up by the requisitioning organization(s). Additionally, Direct Receipt REX modifiers should be applied only to NSNs that have the physical characteristics (size, weight, hazardous material, etc.) that the receiving location can handle.

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[22] We did examine the possibility of eliminating data entry into CMOS. In particular, we questioned those cases where TMF personnel were creating new records in CMOS solely to have a record that could be matched with the CMOS receipt data. (This problem is caused by DLA systems that currently do not populate CMOS with a shipping record which the receipt transaction closes out.) We refer to this lack of communications between systems as an "air gap." While data entry into CMOS appears of little added value today due to these "air gaps,"we concluded that system improvements coming on line will reduce the number of these "air gaps," ergo data entry should not be abandoned. Also, unless billing functionality is moved to another system, data entry into CMOS will be required to maintain transportation billing integrity.

[23] The McConnell AFB, Kansas, Parts Movement Study reported changing the process by faxing the receipt data to TMO. This shows data can be collected and moved electronically or manually to the point of data entry without having to move terminals or people.

[24] The Shaw AFB Transportation/Supply Merger moved CMOS terminals and transportation personnel to the new point of receipt. Additionally, they trained Supply technicians to perform CMOS data entry tasks.

4.2.6 Other Observations

The potential exists to change existing data system(s) to allow data entry via either an existing system terminal or a new system's input device. As SATS is fielded, we recommend modifying its software (and/or the SBSS replacement software) to accept transportation data so it can be passed to the transportation system.

Currently, receipt data must be entered into both CMOS and SBSS. Various methods to accomplish data entry into these systems exist. At Langley AFB, for example, shipping receipt information can be hand-written on an ACC Form 41 and keyed into CMOS at a later time; or the CMOS hand-held terminal (HHT) can be used to scan or key data to be downloaded from the HHT into CMOS. With SATS at Shaw AFB, SBSS data entry can be done by keying the data into the SBSS terminal, or the SATS HHT can be used to scan the pertinent information into the system for radio frequency (RF) transmission. This transmission will update SBSS or be held for subsequent update via download of the HHT. (Note: Langley AFB is scheduled for SATS installation in late FY98, adding this capability to 1FW organizations.) Neither SATS improvements nor CMOS updates are currently in progress to allow one system or the other to accept the data from a HHT and pass it to the other system to update appropriate data elements. This "air gap" between SATS and CMOS prevents deletion of at least one step in the process and necessitates more than one person to accept the property from the carrier. Merging the data collection requirements and developing a link between these two systems could eliminate the need for separate terminals at each customer's location. The cost of developing a link between SATS and CMOS would most likely be equal to or less than the costs of purchasing additional computer equipment. Creating the link could be accomplished by modifying CMOS, SATS, and/or SBSS system programs. However, modifying legacy system programming codes has proven to be a lengthy, resource consumptive process. Until such time as the system modifications are made to these legacy systems, we believe Wrapper technology could be used as an interim measure to achieve the same functionality and allow savings to be experienced sooner.

As it stands today, the use of CMOS is technologically limited. CMOS must be used on a stand-alone, DOS-based, personal computer (PC). It cannot be run concurrently with any other system, such as SBSS, on the same PC. Therefore, every location selected for direct customer receipt will require a separate PC, scales for weighing packages, and a communications link for a CMOS terminal. While it is certainly possible to do this, the equipment investment cost of communications connectivity and stand-alone terminals has to be multiplied for each location selected, and can quickly become prohibitive.

CMOS should be enhanced or replaced by a more efficient system to address/resolve the following:

1) Allow production of a Bill of Lading per unit (shop) rather than one per base.
2) Allow communications with SATS and other systems such as SBSS and the Defense Logistics Agency's (DLA's) Distribution Standard System (DSS).

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4.3 MICAP REQUISITIONING PROCESS

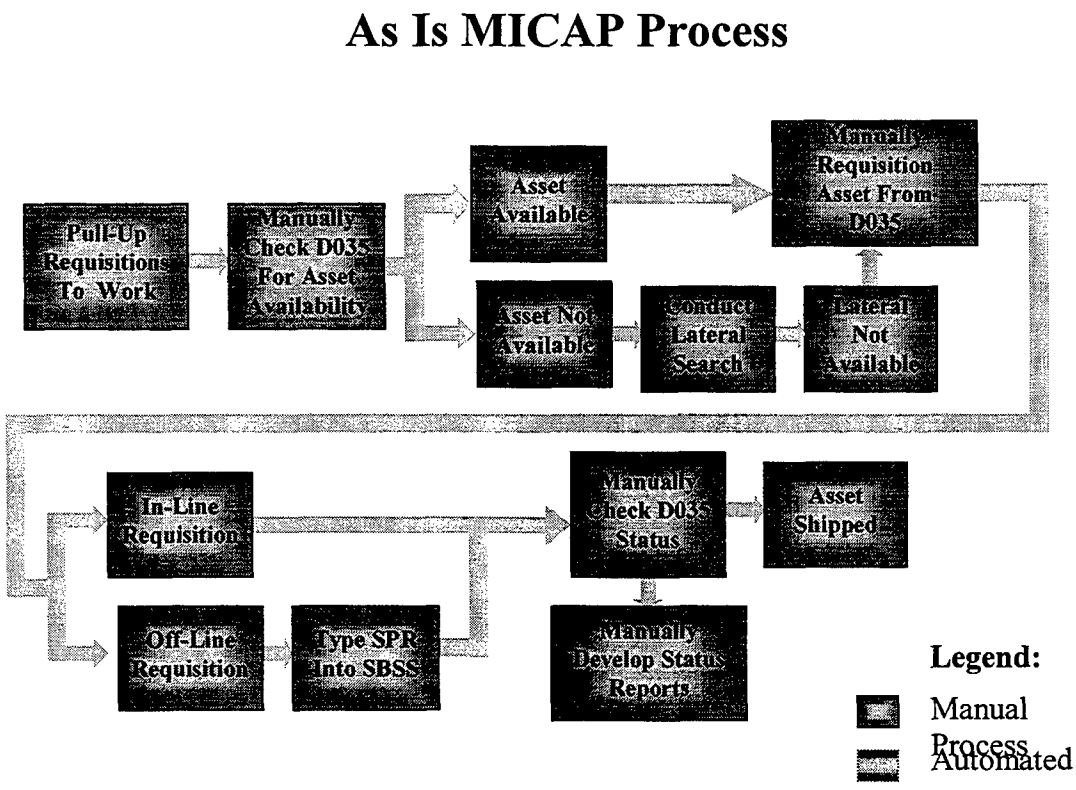


Figure 10 - As Is MICAP Process

4.3.1 As Is MICAP Process

The MICAP Section is responsible for special fast-track handling of all high priority aircraft asset requisitions, commonly referred to as MICAPs. Current MICAP Section procedures (see Figure 10) can be broken into seven distinct processes:

1) Log-On to SBSS/MASS and Pull Up Requisitions to be Worked
2) Check D035 for Asset Availability
3) Requisition Asset from D035
4) Generate a Special Requisition (SPR) to SBSS
5) Check D035 Requisition Status
6) Check DLA Shipping Status
7) Status Reporting

The current As Is method for accomplishing these seven steps is outlined below.

4.3.1.1 Log-On SBSS/MASS and Pull Up Requisitions to be Worked

The MICAP process begins when the MICAP technician logs into the MICAP Asset Sourcing System (MASS) and pulls up all the pending requisitions to be worked, sorts those requisitions, and prints the MICAP Status Report. The MICAP Status report is a list of requisitions which is commonly referred to as the MICAP board. The MICAP technician reads through the items listed on the board to find requisitions for which the bases have requested help.

4.3.1.2 Check D035 for Asset Availability

MICAP technicians contact the Depot to check asset availability in D035. They do this by telephone connection to the Defense Supply Expert System (DESEX). Connecting to DESEX and responding to automated prompts enables the MICAP technician to determine whether or not there is a serviceable balance in the Depot Inventory Management System (D035). Using DESEX to obtain asset availability requires 33 keystrokes. The technician can also log onto D035 to obtain asset availability using the Telnet system. Accessing Telnet requires 39 keystrokes.

4.3.1.3 Requisition Asset from D035

If the asset is available in D035, the MICAP technician can work the requisition through DESEX by entering two more keystrokes to reach the DESEX Depot Customer Service Operator. If it is an off-line requisition[25], the MICAP technician tells the DESEX Depot Customer Service Operator all the information needed to enter the new requisition in D035. The DESEX Depot Customer Service Operator keys the new requisition (all 80 characters of data) into the Item Manager Wholesale Requisition System (D035A). Requisitioning an asset through DESEX requires an additional 82 keystrokes.

If an asset is not available in D035, the MICAP technician attempts to source the asset from other bases (lateral). If the lateral search is successful and the item had already been backordered (BB) in D035, the MICAP technician must call the DESEX Depot Customer Service Operator to cancel the backorder in D035.

If the asset can not be found laterally and had not been ordered from D035, the MICAP technician must again telephone the DESEX Depot Customer Service Operator (10 keystrokes) to process a new requisition. The MICAP technician tells the DESEX Depot Customer Service Operator all information required for the new requisition and the DESEX Depot Customer Service Operator keys that 80 characters of data into D035A. Processing a new requisition through DESEX requires 90 keystrokes in addition to the keystroke requirement of paragraph 4.3.1.1 above.

4.3.1.4 Generate a Special Requisition (SPR) to SBSS

If the MICAP technician has been successful in establishing a new requisition in D035 (that is not yet in SBSS), the MICAP technician keys in a Special Requisition (SPR) into the SBSS.

[25] An off-line requisition is one that does not exist in SBSS.

The SPR notifies SBSS that a requisition was made, and creates a Due-Out requisition to match with the Due-In requisition in D035. Generating a SPR requires 68 keystrokes.

4.3.1.5 Check D035 Requisition Status

MICAP technicians periodically contact the depot to obtain status on all open requisitions. There are three ways a MICAP technician can check D035 status on open requisitions:

1) Status can be obtained through DESEX (28 keystrokes)
2) Status can be obtained by logging onto the Telnet system (38 keystrokes)
3) Status can be obtained by calling the Item Manager (9 keystrokes). However, Item Manager phone lines are frequently busy and can involve calling several times before finally getting through.

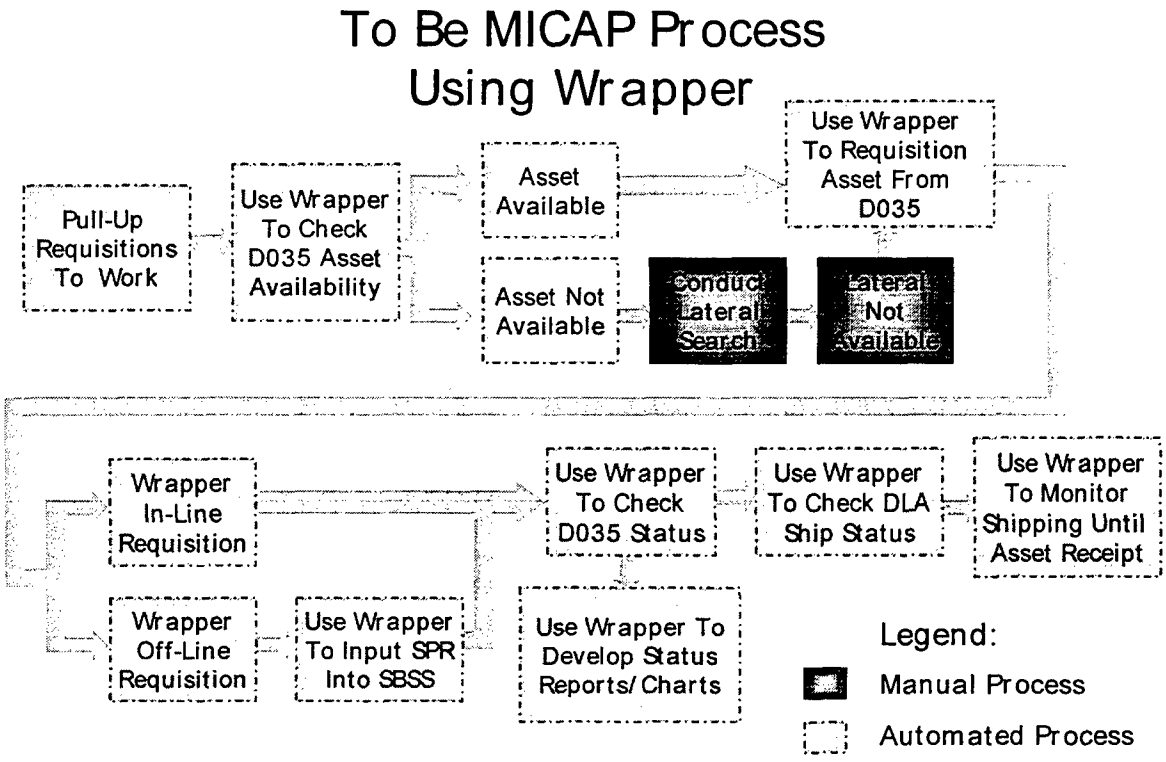
4.3.1.6 Check DLA Shipping Status

MICAP technicians have the capability to check the status of assets released for shipment by connecting to the DLA's World Wide Web site. Connecting to this web site requires 17 keystrokes; however, the MICAP technicians seldom access this source. Instead, they use DESEX, Telnet, or call the Item Manager directly, as outlined in paragraph 4.3.1.5 above.

4.3.1.7 Manual Status Reporting

Currently, MICAP technicians must answer daily phone calls and respond to questions from the wings regarding asset status. In addition, they periodically provide data and briefings to the wings and HQ ACC staffs. This is currently a very labor-intensive process and can result in conflicting data, depending on the person collecting the data and how that data is presented.

Figure 11 - To Be MICAP Process



4.3.2 To Be MICAP Process Using SBSS to D035 Wrapper

The term "wrapper" is used to denote a computer software application written using Commercial Off the Shelf (COTS) software to bridge the gap between existing legacy systems and provide easy access to data and information in a user-friendly Windows environment. The wrapper solution is only an interim solution intended to fill the interval between legacy system replacement or enhancement. One disadvantage of wrappers is that the wrapper application will be disabled if any change is made to the legacy system after the wrapper application is implemented. This can be easily anticipated and prevented with good communication between the wrapper user and the legacy system design center. The major advantage of using wrapper technology is it provides near real-time information to managers. Developing a wrapper application can be done quickly at a relativity low cost.

This To Be MICAP process utilizes a wrapper application to connect the legacy systems SBSS/MASS and D035A. The wrapper allows the sharing of information between the legacy systems, while presenting it to the user in an easy-to-use Windows format. User Instructions for the SBSS to D035 Wrapper can be found in Appendix E.

The seven MICAP To Be processes involved in handling high priority aircraft asset requisitions can be accomplished with the SBSS to D035 Wrapper application, as illustrated in Figure Figure 11 and outlined below.

4.3.2.1 Log-On SBSS/MASS and Pull-Up Requisitions to be Worked

The To Be MICAP process begins when the MICAP technician logs-on to SBSS/MASS through the Wrapper application.

At the wrapper's main menu, "Request Form" (Figure 12), the MICAP technician clicks on the "Get Tex 7/Tex M" button then checks locations to bring in requisitions for review. The MICAP technician can scroll through the list and view comments, etc. to find requisitions for which the bases have requested help and/or requisitions that require monitoring.

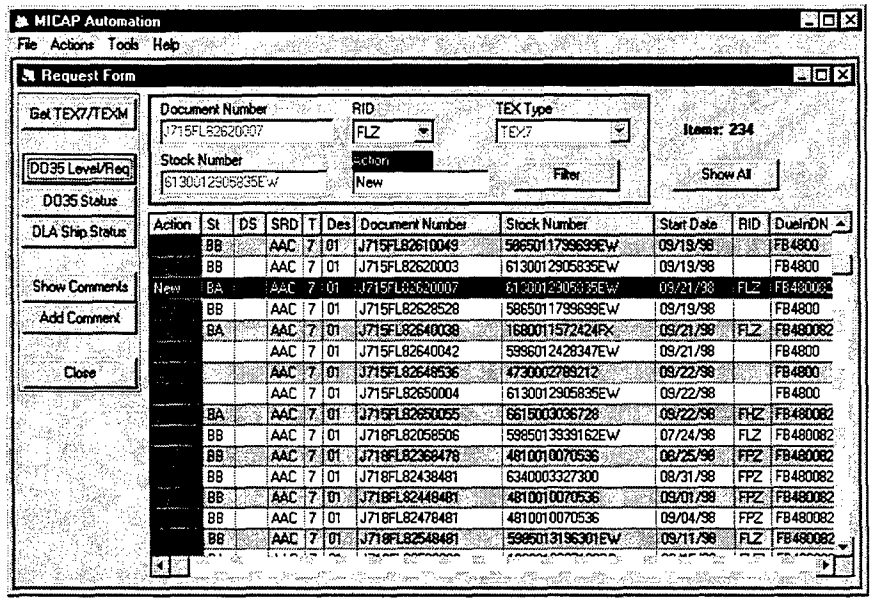


Figure 12 - Request Form

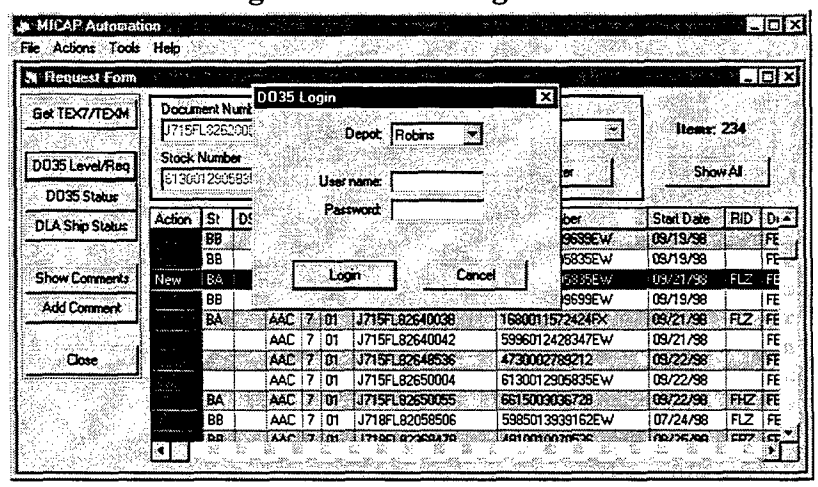
4.3.2.2 Check D035 for Asset Availability

To access and bring up the D035 balance for the asset being requisitioned, the MICAP technician highlights any requisition on the "Request Form" clicks on the "D035 Level/ Requisition" button, and then clicks on the "Login" button (see Figure 13). The D035 login requires MICAP technicians to type in their User Names and D035 Passwords only the first time they log on that day. Using the wrapper to access asset availability requires three keystrokes (excluding the initial login to D035).

4.3.2.3 Requisition Asset from D035

When the MICAP technician clicks on the "D035 Level/Requisition" button, the "Stock Level" Screen appears and shows what assets are on-hand at the depot. The MICAP technician can highlight any asset and click on the "Request" button to reach the "D035 Item Request Form" screen. At that point, the MICAP technician can click on the "Request Item" button to

Figure 13 - D035 Login Form



requisition an asset from D035. Using the wrapper to requisition an asset requires an additional three keystrokes. The MICAP technician can use this wrapper application to requisition an asset whether or not it is available in D035. If the asset is not available, it will create a backorder in D035.

4.3.2.4 Generate a Special Requisition (SPR) to SBSS

When the MICAP technician requisitions the asset from D035, the wrapper application will automatically load the requisition number created by SBSS. If no requisition number was previously generated by SBSS, the wrapper application will automatically generate an off-line requisition number and submit a SPR to SBSS. After the MICAP technician generates a requisition for an asset through the "D035 Item Request Form" screen, the "SBSS Request" screen appears. This screen shows any off-line requisitions (those with numbers of 9000 or greater). At that point, the MICAP technician clicks on the "Submit" button. Submitting the SPR Transaction to SBSS requires one additional keystroke.

4.3.2.5 Check D035 Requisition Status

To obtain status on all open requisitions, the MICAP technician highlights the requisition, clicks on the "D035 Status" button, and then clicks on the "Login" button. Using the wrapper to check status requires three keystrokes. (MICAP technicians type in their user names and passwords only once a day when they log onto D035.)

4.3.2.6 Check DLA Shipping Status

The MICAP technician can obtain Distribution Standard System (DSS) status updates for any requisition by highlighting the requisition and clicking on the "DLA Ship Status" button at the wrapper's main menu "Request Form". This To Be Wrapper application provides automated access to DLA's web site (Figure 14) for specific carrier tracking numbers and delivery dates. Using the wrapper to check shipping status requires two keystrokes.

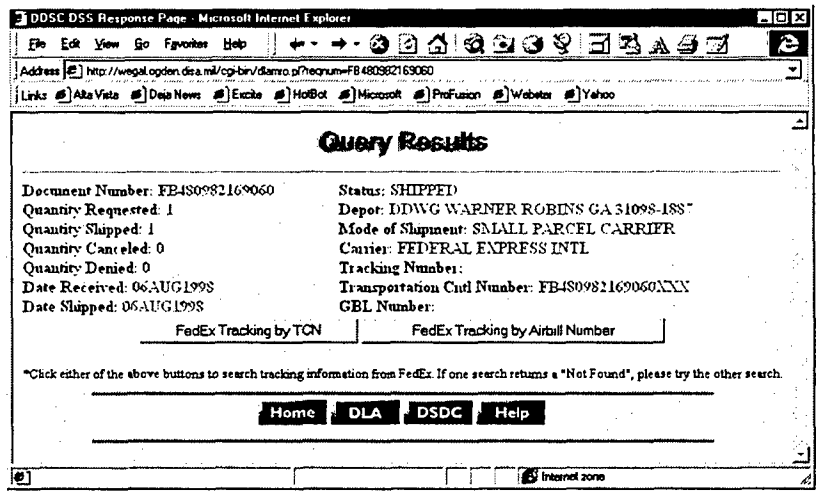


Figure 14 - Querying the DSS Requisition Tracking web site

4.3.2.7 Automated Status Reporting

The SBSS to D035 Wrapper application can produce charts and graphs of requisition and status data. The MICAP technician can display requisition status data from the wrapper's main menu

"Request Form" by clicking on the appropriate column to sort and display the data, then clicking on "Tools" from the menu bar and then clicking on the appropriate graph icon. Using the wrapper to produce automated reports requires three keystrokes.

The wrapper application also provides the capability to automatically print, e-mail, or export requisition status data in various formats such as Excel, PowerPoint, or as text files. From the wrapper's main menu, the MICAP technician can click on "File" (at the menu bar) then click on "Print." When the Print Report Menu appears, the MICAP technician can click on the "Preview" button and then click on the applicable button at the bottom of the window to either print, e-mail, or export the file. Any of these options can be performed with four keystrokes.

4.3.3 As Is versus To Be Comparison

The SBSS to D035 Wrapper automates all seven key MICAP processes outlined under paragraph 4.3.1, As Is Process. Note however, the process of conducting a lateral requisition (locating and requisitioning an asset from another base versus from a depot) was not included in this wrapper application. It can be included in a future update if needed, but at the time of this wrapper application development, it was felt automating this process could conflict with EXPRESS's prioritization and distribution of assets.

In all the following comparisons between the current As Is MICAP processes and the To Be Wrapper processes, data for certain processes were intentionally omitted from the spreadsheet totals.[26] For instance, whenever a specific process (e.g., Check D035 Asset Availability and Check D035 Requisition Status) had more than one method for accomplishing it, both methods were shown for comparison purposes. However, only one method was included in the totals. This way, the totals represent the total sum of the keystrokes it takes to accomplish all the key processes of a MICAP Section (see Figure 15).

Process	As Is # Key Strokes	To Be # Key Strokes	Key Strokes DIFF	To Be Percent Improved
Log-On to SBSS/MASS	Same	Same	0	0
Pull-up Requisitions	Same	Same	0	0
Check D035 Asset Availability- Through Automated DESEX	33	3	30	91%
Check D035 Asset Availability Status- Through Telnet *	39	3	36	92%
Requisition in D035- If still in Automated DESEX Phone Call	82	3	79	96%
Requisition in D035- Call Automated DESEX Phone System *	90	3	87	97%
Generate a SPR to SBSS	68	1	67	99%
Check D035 Requisition Status- Through Automated DESEX	28	3	25	89%
Check D035 Requisition Status- Call Item Manager Directly using DSN ***	9	3	6	67%
Check D035 Requisition Status- Through Telnet *	38	3	35	92%
Check DLA Shipping Status	17	2	15	88%
Produce PowerPoint Charts of Requisition & Status Data **	Not Available	3	No Compare	No Compare
Print, E-Mail, or Export to File Data in Various Formats,e.g., Excel, PowerPoint, Text **	Not Available	4	No Compare	No Compare
TOTAL	228	12	216	95%

* All Column Totals exclude these rows since an alternate method with less key strokes is also presented in the table and already included in the totals

** All Column Totals exclude these rows since there is no current As Is comparison

*** All Column Totals exclude this row since after checking status by automated sources, calling IM is still the last source

Figure 15 - Current and Future Keystroke Comparison

[26] Source Data: Appendix C-8, Tab B - AsIs vs ToBe Process

"Check D035 Status - Call Item Manager Directly using DSN" was excluded from the totals. After a MICAP Technician has used all the automated methods of obtaining system requisition status information but more information is still needed, the Item Manager remains the final source for obtaining asset status (even when using the wrapper). By excluding the data for this method, the totals represent a conservative comparison of the As Is process to the To Be Wrapper process.

The wrapper also automates two other processes not normally performed on a daily basis by a MICAP technician. One of these is providing customers with DLA Shipping Status. This could be done manually with a web browser but would require 15 more keystrokes for each request. Using the automated wrapper eliminates the manual process and yields an 88 percent saving. The second process not normally performed on a daily basis is producing reports and graphs of requisition and status data for management decision making. Under the As Is process, this is labor-intensive and produces various results. However, with the To Be Wrapper process, the data is always collected the same way and can be accomplished with only 3 keystrokes.

Table 13 - Wrapper Time Comparison

Process	As Is Execute Time (Sec)	To Be Execute Time (Sec)	Time DIFF (Sec)	To Be Percent Improved	Time Saved/Day (Sec)
Log-On to SBSS/MASS	Same	Same	0	0	0
Pull-up Requisitions	Same	Same	0	0	0
Check D035 Asset Availability-Through Automated DESEX	41	3	38	93%	1976
Check D035 Asset Availability Status-Through Telnet *	43	3	40	93%	18152
Requisition in D035- If still in Automated DESEX Phone Call	180	5	175	97%	9100
Requisition in D035-Call Automated DESEX Phone System *	300	5	295	98%	15340
Generate a SPR to SBSS	35	1	34	97%	1768
Check D035 Requisition Status- Through Automated DESEX	40	3	37	93%	14867
Check D035 Requisition Status- Call Item Manager Directly using DSN ***	237	3	234	99%	94021
Check D035 Requisition Status- Through Telnet *	43	3	40	93%	16072
Check DLA Shipping Status	55	2	53	96%	21295
TOTAL	351	14	337	96%	49006

* All Column Totals exclude these rows since an alternate method with less key strokes is also presented in the table and already included in the totals

*** All Column Totals exclude this row since after checking status by automated sources, calling IM is still the last source

Table 13 - Wrapper Time Comparison contains a process-by-process comparison of the As Is MICAP process to the SBSS to D035 Wrapper process.[27] There is no measurable difference in the process of initially logging onto SBSS/MASS and pulling up the requisitions to be worked. However, all other processes the MICAP technicians perform numerous times a day are significantly different.

[27] Source Data: Appendix C-9

The smallest saving achieved by using the wrapper is for "Checking D035 Requisition Status - by Calling the Item Manager" which is a keystroke reduction of 67 percent. As previously mentioned, the wrapper will not totally replace telephone calls from the MICAP technician to the Item Manager, but it can significantly reduce the number of those calls by providing updated information directly from D035A. The largest reduction of keystrokes is 99 percent to "Generate a Special Requisition (SPR) to SBSS."

These comparisons show how enhancements to seemingly insignificant processes that must be performed numerous times a day have a significant impact on workload. Overall the SBSS to D035 Wrapper reduces keystrokes for the MICAP technician by 95 percent.

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Current & Future MICAP Wrapper Time & Dollar Savings

Process	As Is Execute Time (Sec)	To Be Execute Time (Sec)	Time DIFF (Sec)	To Be Percent Improved	As of 30 Sep 1998 Approx. Time Saved/Day (Sec)	As of 30 Sep 1998 Approx.$ Saved **** Per Day	As of 30 Sep 1998 Approx.$ Saved **** Per Year	As of 31 Dec 1999 Approx. Time Saved/Day (Sec)	As of 31 Dec 1999 Approx. $ Saved **** Per Day	As of 31 Dec 1999 Approx. $ Saved **** Per Year
Log-On to SBSS/MASS	Same	Same	0	0	0	$0	$0	0	$0	$0
Pull-up Requisitions	Same	Same	0	0	0	$0	$0	0	$0	$0
Check D035 Asset Availability-Through Automated DESEX	41	3	38	93%	1976	$10	$2,601	14166	$74	$18,644
Check D035 Asset Availability Status- Through Telnet *	43	3	40	93%	18152	$11	$2,737	14912	$78	$19,625
Requisition in D035- If still in Automated DESEX Phone Call	180	5	175	97%	9100	$48	$11,976	65240	$341	$85,861
Requisition in D035- Call Automated DESEX Phone System *	300	5	295	98%	15340	$80	$20,189	109976	$575	$144,736
Generate a SPR to SBSS	35	1	34	97%	1768	$9	$2,327	12675	$66	$16,681
Check D035 Requisition Status-Through Automated DESEX	40	3	37	93%	14867	$78	$19,566	111038	$580	$146,135
Check D035 Requisition Status-Call Item Manager Directly using DSN ***	237	3	234	99%	94021	$491	$123,739	702243	$3,669	$924,204
Check D035 Requisition Status-Through Telnet *	43	3	40	93%	16072	$84	$21,152	120042	$627	$157,984
Check DLA Shipping Status	55	2	53	96%	21295	$111	$28,026	159055	$831	$209,328
Produce PowerPoint Charts of Requisition & Status Data **	Not Available	3	No Compare	No Compare	No Compare	No Compare	No Compare	No Compare	No Compare	No Compare
Print, E-Mail, or Export to File Data in Various Formats,e.g., Excel, PowerPoint, Text **	Not Available	4	No Compare	No Compare	No Compare	No Compare	No Compare	No Compare	No Compare	No Compare
TOTAL	351	14	337	96%	49006	$256	$64,495	362175	$1,892	$476,649

* All Column Totals exclude these rows since an alternate method with less key strokes is also presented in the table and already included in the totals

** All Column Totals exclude these rows since there is no current As Is comparison

*** All Column Totals exclude this row since after checking status by automated sources, calling IM is still the last source

**** Dollar Savings are calculated using E-5 rates from SAF/FMBOP FY98 Military Rates Per Unit of Time - Air Force Based on FY 1999 President's Budget, in AFI 65-503 Table A20-1, 27 Feb 98

Figure 16 - Wrapper Time and Dollar Savings

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4.3.4 Cost/Benefit Analysis

The AFCSS MICAP Section workload consists of New Starts and In-Work MICAP Requisitions. Table 14 - AFCSS MICAP Section Workload, is a summary from a daily sample of MICAPs processed by the AFCSS MICAP Section at Langley. Using this data along with projections of future workload gathered by the AFCSS MICAP Section, daily savings from using the wrapper were developed. The sample shows, as of 30 Sep 98, there was a daily average of 626 MICAPs consisting of 52 (8%) New Starts and 574 (92%) In-Work Requisitions. The ACC MICAP Section works all New Start and In-Transit requisitions everyday.

Table 14 - AFCSS MICAP Section Workload

	TOTAL AFCSS MICAP SAMPLE				
BASE	**TOTAL MICAPS**	**NEW ***	**TEX 7**	**TEX M**	**DATE**
Total Deployed Units	1678	190	190	0	
Daily Avg Deployed Units	336	38	38	0	
Total OFFUTT	291	29	13	16	
Daily Avg Offutt	58	6	3	3	
Total BEALE	132	16	15	1	
Daily Avg Beale	26	3	3	0	
Total LANGLEY	1027	27	14	13	
Daily Avg Langley	205	5	3	3	
Total Samples	3128	262	232	30	
Avg Total Samples /Day	626	52	46	6	
Avg Total Sample minus Avg New Starts/Day		626 - 52 =	**574**	**# MICAPs In-Work**	
		574/626 =	**92%**	**% MICAPS In-Work**	

* New = New Starts. The data in the "New" Start Column is already counted in the "Total MICAPS" Column. Hence, MICAPs worked on prior to this date are equal to "Total MICAPS" minus "New" Starts. New Start Column data is a sum of Tex 7 plus Tex M data.

Figure 15, Current & Future MICAP Wrapper Keystroke Savings spreadsheet, shows these keystroke savings by day. Figure 16, "Current & Future MICAP Wrapper Time and Dollar Savings" shows time and dollar savings by day. Savings were based on E-5 rates from the FY 98 Military Pay Rates Per Unit of Time – Air Force (see Table 5 - E-5 Pay Rates). The "Current & Future MICAP Wrapper Time and Dollar Savings" spreadsheet (Figure 16 - Wrapper Time and Dollar Savings) uses As Is time measurements from the AFCSS, except for the "Check DLA Shipping Status," which was timed using a web browser. It also uses To Be times (second column in spreadsheet) taken from programmers versus actual AFCSS MICAP technician times using the wrapper, since Headquarters ACC was unable to obtain passwords to the Depot D035 systems.

Figure 16 shows daily savings as of 30 September 1998 (current time frame) and projects savings to 31 December 1999, when all of HQ ACC wings will be regionalized and working their MICAPs through the AFCSS MICAP section at Langley. The In-Work Requisitions (non-New Starts) consist of Backorders and In-Transit Requisitions. According to the data collected by the AFCSS MICAP Section Chief, they work more than 70% of all In-Work (non-

New Start) MICAP Requisitions and 100% of the New Start Requisitions every day. Therefore, 70% of 574 total In-Work MICAPs equates to 402 In-Work MICAPs per day worked by the AFCSS MICAP Section as of 30 Sep 98. The 402 In-Work MICAPs plus 52 New Start MICAPs equals 454 Total MICAPs worked each day by the AFCSS MICAP Section as of 30 Sep 98. Savings were calculated by measuring the difference in keystrokes and time between the As Is and the To Be processes. As of 30 Sep 98, if this workload were accomplished by using the SBSS to D035 Wrapper it would have saved 25,224 keystrokes per day or $64,495 per year at ACC.

The AFCSS MICAP Section estimated the 31 December 1999 workload after calling all the other ACC MICAP sections for their input. Based on the result of their queries, they estimated the total ACC MICAP workload to be 4,660 MICAPs per day, a 744 percent growth in AFCSS workload. Using the same ratio of New Starts to In-Work requisitions as in our 30 Sep 98 sample, 8 percent of the 4,660 (373) would be New Starts and 92 percent (4,287) would be In-Work requisitions. Therefore, if the MICAP section work 70% of these 4,287 In-Work requisitions (3001) and 100% of the New Start (373), it will work on a total of 3,374 requisitions per day after 31 Dec 99. If this post-31 Dec 99 workload is accomplished by using the SBSS to D035 Wrapper, it can save 185,654 keystrokes per day or $476,649 per year at ACC.

For the "Check D035 Asset Availability, Requisition in D035," and "Generate a SPR to SBSS" processes, the differences between the As Is and To Be processes were multiplied by the New Starts figure (52 for 30 Sep 98 and 373 for 31 Dec 99). For the "Check D035 Requisition Status and "Check DLA Shipping Status" processes, the differences were multiplied by 70% of the In-Work figure (402 for 30 Sep 98 and 3,001 for 31 Dec 99).

Overall, the SBSS to D035 Wrapper reduces keystrokes for the MICAP technician by 95%. In addition, savings are also experienced at the depots. The Depot Customer Service Operator or Item Manager's time is freed each time the wrapper is used to create a requisition or to obtain requisition status. We did not attempt to quantify these savings to the depot.

Since we were unable to obtain actual AFCSS MICAP Section To Be times when using the wrapper, we may need to conduct a test of the wrapper being used by MICAP Technicians in their daily work environment at a later date. Regardless, the SBSS to D035 Wrapper, as it is today, adds great value to any MICAP function, but it has far greater potential which can only be achieved by obtaining access to the five depot D035A systems for further testing and enhancement.

4.3.5 Potential Future Improvements for the SBSS to D035 Wrapper Application

The wrapper can further automate and improve the MICAP process, as well as enhance the management of MICAPs and improve MICAP technician effectiveness. Although the Wrapper was successfully tested and has demonstrated its potential value, there are several opportunities for further improvement.

Essential updates to the SBSS to D035 Wrapper include:

- Obtaining access to the other depot D035 systems to further test the wrapper. Requires password access to the five Air Force depots.

- Enabling the wrapper to pull requisitions from the other HQ ACC locations. Now that the wrapper works with Langley, add the other ACC wings that are being regionalized within ACC (regionalization to be completed by 31 December 1999).

- Making the wrapper a 32-bit application to speed up and putting it on a LAN server to allow use by the entire MICAP section simultaneously, sharing one database. The wrapper was initially developed as a desktop 16-bit application due to lack of 32-bit software at ACC. ACC now has the software to accommodate this update.

The following enhancements will further improve the SBSS to D035 Wrapper's functionality and user interface:

- Allowing highlighting of multiple requisitions to be worked at the same time

- Automating the "pulling in" of MICAP requisitions from SBSS, and further checking D035 asset availability prior to the MICAP technician's arrival at work

- Adding Tables to convert acronyms and error messages into plain English.

- Adding a menu button to send comments, data and reports directly to a web page or LAN server

- Adding the capability to produce other types of reports and charts

- Automating the use of a User's login and password for access to SBSS and D035 to speed-up the wrapper's processing time.

Another opportunity for improvement is in the use of a new D035 Stock Control Web site, developed by Ms. Jo-Ann Tudor, HQ AFMC/LGNM. This web site will have the capability to display asset balances, requisition status, and Item Management/Item Manager data, as well as part number, stock number, and cross-reference information for any Air Force Depot requisition made in D035. There are future plans to allow requisitions to the depots from the web site. When this web site becomes available, a hot link could be added to the SBSS to D035 Wrapper.

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Chapter 5
STUDY COST/BENEFIT ANALYSIS

5.1 DIRECT SHIP

In order to realize the full potential savings of implementing Direct Ship at a unit, it is necessary to eliminate trips the unit makes to transport non-express carrier-eligible property to TMF. Direct Ship at Langley provided limited benefits due to the inability to eliminate these trips. We believe a scheduled pickup and delivery service could accomplish this goal. The Dyess Express demonstration at Dyess AFB, TX, the movement portion of the Shaw AFB Transportation/Supply Merger, and the Parts Movement Power Team Study at McConnell AFB KS demonstrated that the use of consolidated, scheduled and on-call pickups from individual units saved on vehicle cost and maintenance. We did not attempt to validate the efficiencies/savings contained in these reports; however, we believe that implementing a scheduled and on-call express-type on-base asset movement concept would enable full realization of the benefits of Direct Ship.

If trips are eliminated, the annual Vehicle O&M savings plus the labor savings result in a total saving for the CRS Engine Shop of $17,283 per year. Since this savings only represents the CRS Engine Shop, which is 23 percent of Langley's Total Direct Ship Express Carrier Eligible Outbound packages, then Langley's potential Total Annual Savings for direct shipping is $75,143. ACC's estimated potential Total Annual Direct Ship Saving is $768,382.

Additionally, during the Direct Ship test, we noticed that the CRS Engine Shop was manually producing an AF Form 2005. Automating the process was relatively simple and we did so at that time. Consequently, TINs are now printed on 3-part paper directly after data input to SBSS. This was an unanticipated benefit with savings in time as well as the added benefit of increased data accuracy.

5.2 DIRECT RECEIPT

Limited Direct Receipt samples were collected at Langley Air Force Base, Virginia, due to the Shaw Transportation/Supply Merger. The Langley Direct Receipt test data we did collect supported the Shaw findings and recommendations. We did not attempt to validate the efficiencies/savings contained in the Shaw Transportation/Supply Merger report. Implementing Direct Receipt at the CRS Engine shop potentially saves $4,106 annually, and, if implemented for the remaining organizations, would save an additional $15,447. Langley's total annual savings potential is $19,553. ACC's total potential annual savings from implementing Direct Receipt across all bases in ACC are $259,665.

5.3 SBSS TO D035 WRAPPER

The SBSS to D035 Wrapper application, as developed for ACC, adds value to the MICAP function in terms of easier and quicker access to much-needed data. However, it has far greater value that can only be achieved after obtaining access to the five depot D035A systems and further automating and enhancing the capability of this wrapper application.

Table 15 - Summary of Potential Savings

Direct Ship Savings	$17,283	$75,143	$768,382
Direct Receipt Savings	$4,106	$19,553	$259,665
Wrapper Savings*			$64,495
Wrapper Savings**			$476,649
Total Potential Savings*	**$21,389.00**	**$94,696.00**	**$1,092,542**
Total Potential Savings**			**$1,504,696**

** As of 30 Sep 98*
*** As of 31 Dec 99*

Because we were unable to actually install the wrapper application in the ACC MICAP Section, savings were derived based on the number of keystrokes required to perform the MICAP processes both manually and electronically, rather than the actual time to perform those processes. In addition to the keystroke savings, we captured the times it took to complete each MICAP process using the wrapper in a lab then compared these to current MICAP Section times to quantify potential time savings.

Wrapper savings were calculated based on two points in time. If implemented before ACC has regionalized all it's bases, the SBSS to D035 Wrapper can save $64,495 per year at ACC. After 31 December 1999 when ACC has regionalized all it's bases, the SBSS to D035 Wrapper savings will grow to $476,649 per year at ACC. If other commands across the Air Force also regionalize their MICAP activities, savings from using the SBSS to D035 Wrapper could also be achieved in their regional Supply Squadrons.

5.4 TOTAL POTENTIAL SAVINGS

The potential impact of implementing Direct Receipt and Direct Ship at the CRS Engine Shop Support Section alone would be $21,389 annually or, if implemented in all sections at Langley AFB, could yield an annual savings of $94,696. From the HQ ACC perspective, adding the 30 Sep 98 AFCSS savings from using the Wrapper and implementing Direct Ship and Direct Receipt at all of its bases produces a total potential annual savings of $1,092,542. Were ACC to implement the SBSS to D035 Wrapper when it has regionalized all it's bases, the total potential annual savings across ACC would be $1,504,696. While we did not attempt to extrapolate these savings for AF-wide implementation, clearly savings would be generated at similar rates if Direct Ship, Direct Receipt, and MAJCOM use of the SBSS to D035 Wrapper were implemented across the Air Force.

Chapter 6
CONCLUSIONS

Direct Ship can save both manpower and money if implemented properly. Certain criteria should be considered before implementing Direct Ship.

- There needs to be a support section at the shipping location with enough manpower to handle the increased workload, if required. A manpower study of both Central Shipping and any organizations using direct ship should be conducted to determine manning requirements.

- Adequate facilities must be available to handle and process any packages to be shipped. The facilities must include materiel handling equipment, LAN lines, SBSS lines, and appropriate holding space.

- Another consideration is whether there will be sufficient workload at the location to warrant it as an express carrier pickup location. FedEx requires a minimum of 10 FedEx-eligible packages per day for utilization of their PowerShip terminals.

Direct Receipt can save manpower, money, and asset pipeline time if implemented in locations with the proper facilities. Conceptually, Direct Receipt could apply to any asset, regardless of size or special handling requirements. However, there are some considerations that should be evaluated before implementing Direct Receipt.

- The receiving location selected should be a designated SBSS warehouse with sufficient manpower to handle the increased workload.

- Adequate facilities must be available to handle and process any packages to be received. The facilities must include suitable materiel handling equipment, LAN lines, SBSS lines, and appropriate holding space.

- Any area selected to implement Direct Receipt should have a method for preventing the co-mingling of inbound and outbound property.

- Direct Receipt implementation should be considered only at locations that are in close proximity to the requisitioning organization.

Additionally, Direct Receipt REX modifiers should be applied only to NSNs that are used by a single customer, or to NSNs that are normally picked up by the requisitioning organization(s). Direct Receipt REX modifiers should be applied only to NSNs that have the physical characteristics (size, weight, hazardous material, etc.) that the receiving location can handle.

Wrapper Applications have tremendous potential to decrease workload and streamline operations in MICAP sections, as well as many other units. Any task with the potential to be automated or any situation that requires data transfer between systems is a candidate to benefit from wrapper applications.

Even though the inability to obtain password access to D035 meant we were unable to actually install the wrapper application in the AFCSS MICAP Section, we were able to derive savings based on programmers' performance of each task using the wrapper, versus actual AFCSS MICAP Technician times.

Therefore, to effectively implement use of the SBSS to D035 Wrapper, the following steps must be taken:

- Obtain access to the other four depot D035 systems to further test the wrapper. Requires AFMC provide appropriate password access to the five Air Force depots D035 systems.
- Make the Wrapper a 32-bit application and install it on a LAN server.
- Install the Wrapper and validate its use by technicians at AFCSS.
- Enable the Wrapper to pull requisitions from the other HQ ACC locations that are being regionalized within ACC (regionalization to be completed by 31 December 1999).

Chapter 7
RECOMMENDATIONS

These recommendations pertain only to the findings selected from the Phase I Logistics Process Optimization Study for further study under this project. Additional opportunities for improvement are identified in the Phase I report and recapped in Appendix B. The ACC To Be Process Model found in Volume II of this report can be used to expand process descriptions and/or identify additional areas for improvement studies. The Future To Be Asset Sustainment Process Model, found in Volume III, can be used to encourage discussions on the direction which future processes and concepts for logistics should move.

It is the recommendation of the AFLMA Reengineering Team that the USAF should:

1. Implement Direct Ship (with a scheduled and on-call on base asset movement concept) in units that meet the criteria of being an appropriate Direct Ship site. (OPR: HQ USAF/IL)

2. Implement Direct Receipt (with a scheduled and on-call on base asset movement concept) in units that meet the criteria of being an appropriate Direct Ship site. (OPR: HQ USAF/IL)

3. Pursue further testing and development of the SBSS to D035 Wrapper Application, to include:

    a. HQ AFMC must provide appropriate password access to the depot D035 systems to further test the wrapper (OPR: HQ AFMC. OCR: HQ ACC/LGS)

    b. Enhance, install and validate technician use of the SBSS to D035 Wrapper at AFCSS. (OPR: HQ ACC/LGS)

4. Adopt the ACC To-Be Model (Volume II of this report) as the baseline USAF To-Be Model for the short term. (OPR: HQ USAF/IL)

5. Use the ACC To-Be Model (Volume II of this report) to further expand process descriptions and/or identify additional areas for improvement studies. (OPR: HQ USAF/IL)

6. Use the Future To Be Asset Sustainment Process Model, found in Volume III, to foster discussions on the future processes and concepts for logistics and establish strategic direction for overarching reengineering efforts. (OPR: HQ USAF/IL)

7. Use the Phase I Logistics Process Optimization Study findings and other reengineering initiatives to develop a prioritized list of reengineering opportunities and and a strategy to pursue those opportunities. (OPR: HQ USAF/IL)

8. Pursue development of a solution for the "air gap" between CMOS and SBSS/SATS whether through development of a new wrapper application as an interim solution and/or through changes to existing systems. (OPR: HQ USAF/ILS and HQ USAF/ILT)

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Appendix A

Appendix A

LIST OF ACRONYMS AND GLOSSARY

A.1 Acronyms:

NOTE: Some of the acronyms listed may not appear in this report.

A/C	Aircraft
ACA	Air Clearance Authority
ACC	Air Combat Command
AEF	Air Expeditionary Force
AFB	Air Force Base
AFCDD	Air Force Corporate Data Dictionary
AFCSS	Air Force Contingency Supply Squadron
AFLMA	Air Force Logistics Management Agency
AFLSP	Air Force Logistics Strategic Plan
AFM	Air Force Manual
AFMC	Air Force Materiel Command
AGE	Aerospace Ground Equipment
AGS	Aircraft Generation Squadron
AI0WIN	Function Modeling and Activity Analysis Tool - Copyright by KBSI
ALC	Air Logistics Center
AMARC	Aircraft Maintenance and Regeneration Center
AMC	Air Mobility Command
AME	Alternate Mission Equipment
AMU	Aircraft Maintenance Unit
API	Application Programming Interface
APL	Automated Packing List
APOD	Aerial Port of Debarkation
APOE	Aerial Port of Embarkation
APS	Aircraft Parts Store
AREP	Aircraft Repair Enhancement Program
ASDC3I	Assistant Secretary of Defense for Command, Control, Communications and Intelligence
ASN	Advanced Shipment Notice
ATCMD	Advanced Transportation Control Movement Document
AWM	Awaiting Maintenance
AWP	Awaiting Parts
AWS	Awaiting Supplies
BOM	Bill of Material
BRAC	Base Realignment and Closure
BT	Aerospace Vehicle Transfer status
C2	Command and Control

CAAS	Contract Advisory and Assistance Service (at Langley AFB)
CBL	Commercial Bill of Lading
CEME	Centralized Equipment Management Element
CIM	Corporate Information Management
CINC	Commander In Chief
CNG	Compressed Natural Gas
COA	Course of Action
CONUS	Continental United States
COSO	Combat Oriented Supply Organization
COTS	Commercial Off-the-Shelf
CREP	Contract Repair Enhancement Program
CRI	Consolidated Reparable Inventory
CSEP	Contract Support Enhancement Program
CSI	Consolidated Serviceable Inventory
CSRD	Communications - Computer Systems Requirements Document
CSS	Contingency Supply Squadron
CULT	Common User Land Transportation
DAO	Defense Accounting Office
DBOF	Defense Business Operations Fund
DCC	Dedicated Crew Chief
DDN	Defense Data Network
DESEX	Defense Supply Expert System
DFSC	Defense Fuels Supply Center
DIFM	Due In From Maintenance
DII	Defense Information Infrastructure
DISA	Defense Information Systems Agency
DJ	Depot Level Maintenance Possession Status
DLA	Defense Logistics Agency
DLR	Depot Level Reparable
DMBA	Depot Maintenance Business Area
DMRD	Defense Management Review Decision
DOC	Designed Operational Capability
DOD	Department of Defense
DODAAC	Department of Defense Activity Address Code
DODD	Department of Defense Directive
DOR	Due-Out Release
DPEM	Depot Purchased Equipment Management
DREP	Depot Repair Enhancement Program
DRMO	Defense Reutilization and Marketing Office (changed to DRMS)
DRMS	Defense Reutilization Marketing Service (formerly DRMO)
DUSDL	Deputy Under Secretary of Defense for Logistics
eAF	Expeditionary Aerospace Forces
EDI	Electronic Data Interchange
EMS	Equipment Management Section
EOQ	Economic Order Quantity
EOR	End of Runway

EP	Enhancement Program
ER	Exceptional Release
ESOC	Emergency Support Operations Center
FCC	Fuels Control Center
FedEx	Federal Express
FLL	Forward-based Logistics Location
FMS	Foreign Military Sales
FSC	Flight Service Center
FSL	Forward Support Location
FYDP	Future Years Defense Program
GBL	Government Bill of Lading
GPRA	Government Performance and Results Act
GSA	Government Services Administration
GSD	General Support Division
GUI	Graphical User Interface
HHT	Hand-held Terminal
I2P	Industry Information Processor (CMOS module)
ICI	Interactive Communication Interface
ICOM	Inputs, Controls, Outputs and Mechanisms
ICP	Inventory Control Point
IDEF	Integrated Definition for Information Modeling (Structured analysis & design methodology)
IL	Integration Laboratories
IM	Item Manager (Materiel Manager)
IMPAC	International Merchants Purchase Authorization Card
IPB	Illustrated Parts Breakdown
IREP	Intermediate Repair Enhancement Program
ISU	Issue Transaction (SBSS)
ITV	In-Transit Visibility
JCN	Job Control Number
JCS	Joint Chiefs of Staff
JEIM	Jet Engine Intermediate Maintenance
KBSI	Engineering, modeling, and systems/software development company
LAN	Local Area Network
LFA	Large Frame Aircraft
LMA	Logistics Management Agency
LMR	Land Mobile Radio
LOX	Liquid Oxygen
LPP	Local Purchase Program
LPS	Local Purchase Status
LRU	Line Replaceable Unit
LTL	Less Than Truckload
MACA	Military Airlift Clearance Authority
MAJCOM	Major Command
MASO	Munitions Accountable System Officer
MC	Mission Capability/Mission Capable

MDS	Mission Design Series
MICAP	Mission Capable
MILSTRIP	Military Standard Requisitioning and Issues Procedures
MISTR	Maintenance Item Subject to Repair
MM	Materiel Manager (Item Manager)
MOC	Maintenance Operations Center
MRRB	Management Review Board
MRSP	Mobility Readiness Spares Package
MSA	Munitions Storage Area
MSC	Military Sealift Command
MSG	Materiel Systems Group
MTMC	Military Traffic Management Command
NMC	Not Mission Capable
NMCM	Not Mission Capable - Maintenance
NMCS	Not Mission Capable - Supply
NPR	National Performance Review
NRTS	Not Reparable This Station
NSN	National Stock Number
NTS	Notice To Stock
O&M	Operations and Maintenance
OBMS	On-Board (Weapon System) Monitoring System (Future Concept)
OCM	Overseas Cargo Movement (ETADS front-end processor)
OCONUS	Overseas Continental United States
OCR	Office of Collateral Responsibility
OPR	Office of Primary Responsibility
OS&D	Over, Short and Damaged
P&D	Pickup and Delivery
PAA	Primary Authorized Aircraft
PDM	Programmed Depot Maintenance
PIN	Personal Identification Number
PMA	Portable Maintenance Aid
PMC	Partial Mission Capable
POL	Petroleum, Oil and Lubricants
POS	Peacetime Operating Stock
ProSim	Processed-Based Simulation Design tool - Copyright by KBSI
PSI	Parts Supportable Inventory
QAF	Quality Air Force
QPM	Quality Performance Measurement
RAM	Reparable Asset Management
RAPP	Readiness Aircrew Pilot Program
RBL	Readiness-Based Leveling
RCM	Reliability Centered Maintenance
RDD	Required Delivery Date
RDO	Redistribution Order
REC	Receipt
REX	Requisition Exception Code

RF	Radio Frequency
ROD	Report of Discrepancy
RPS	Remote Processing Site
RSP	Readiness Spares Package
SAF	Secretary of the Air Force
SCC	Sortie Control Center (Future Concept)
SDT	Second Destination Transportation
SHADE	Shared Data Environment
SHP	Supply Shipment Transaction (SBSS)
SIFS	Supply Interface (file)
SNUD	Stock Number User Directory
SOR	Source of Repair
SOS	Source of Supply
SPI	Special Packaging Instruction
SRU	Shop Replaceable Unit
SSC	Shipment Suspense Card
SSC	Shop Service Center
SSG	Standard Systems Group
T.O.	Technical Order
TA	Table of Allowances
TAC	Transportation Account Code
TAV	Total Asset Visibility
TCN	Transportation Control Number
TEX Code	Transaction Exception Code
TFM	Transportation Financial Management
TIN	Turn-in
TMF	Traffic Management Flight (formerly TMF). Also known as Central Receiving.
TMO	Traffic Management Office (changed to TMF)
TNB	Tail Number Bin
TRAP	Tanks, Racks, Adapters, and Pylons
TWRAPS	Traffic Management Workload Reporting and Productivity Summary
UND	Urgency Need Designator
USAF	United States Air Force
UTC	Unit Type Code
VIL	Vehicle Integrated Link
VIR	Vehicle Integrated Reader
VPV	Virtual Prime Vendor
WCA	Water Clearance Authority
WCE	Work Center Event
WPOD	Water Port of Debarkation
WPOE	Water Port of Embarkation
WR-ALC	Warner Robins Air Logistics Center
WRSK	War Reserve Spares Kit
WSA	Weapons Storage Area
WSSC	Weapon Systems Support Center

A.2 Standard Organizations:

CC	Command Element
CRS	Component Repair Squadron
EMS	Equipment Maintenance Squadron
FM	Comptroller; Financial Management
IL	Installations and Logistics
LG	Logistics
LGC	Contracting (Base)
LGM	Weapons, Weapon Systems, and Support Equipment Maintenance
LGS	Supply
LGT	Transportation
LY	Avionics Commodities
OG	Operations Group
PK	Contracting (Depot)
RACC	Reparable Asset Control Center
RE	Reengineering
SPO	System Program Office

A.3 Forms/Documents/Reports:

ACC Form 41	Shipment Tally Sheet (In-check form)
AF Form 9	Request For Purchase
AF Form 451	Request for Packaging Service
AF Form 616	Fund Cite Authorization (FCA) also known as an "Account Book"
AF Form 1235	Physical Inventory (fuels, missile propellants)
AF Form 1297	Equipment Receipt
AF Form 1994	Fuels Receipt (for DOD A/C)
AF Form 1995	Fuels Receipt (for Non-DOD A/C)
AF Form 2005	Supply Part Issue Request
AF Form 2434	Munitions Configuration and Expenditure Document
AFTO Form 134	Aviation Breathing Oxygen Servicing Trailer Log (liquid/gaseous)
AFTO Form 350	Reparable Item Processing Tag
AFTO Form 781	Aerospace Vehicle Flight Report and Maintenance Document (series documents)
CA/CRL	Custodian Authorization/Custody Receipt Listing ("R-14")
D-6	Receipt Report
D-7	Shipment Report
D-18 Report	Priority Monitor Report
DD Form 250	Bill of Lading
DD Form 1149	Requisition and Invoice/Shipping Document
DD Form 1348-1	Issue Release/Receipt Document
DD Form 1348-6	DOD Single Line Item Requisition System Document (Manual - Long Form)
M30	Due Out Status Listing

R-14	Custodian Authorization/Custody Receipt Listing (CA/CRL)
R-15	Organization Visibility List
SF 361	Transportation Discrepancy Report (TDR)
SF 364	Report of Discrepancy (ROD)
TDR	Tonnage Distribution Roster
TDR	Transportation Discrepancy Report (SF 361)
Waybill	Commercial Shipping Document

A.4 Systems:

ADRSS II	Automated Data Reports Submission System II
AFEMS	Air Force Equipment Management System
AIS	Automated Information System
ATAC-AF	Advanced Traceability and Control - Air Force
AWS	Automated Warehouse System
BCAS	Base Contracting Automated System
CAFVIMS	Consolidated Air Force Vehicle Integrated Management System
CAMS	Core Automated Maintenance System
CAPS II	Consolidated Aerial Port Subsystem II
CARS	Consolidated Analysis and Reporting System
CAS-B	Combat Ammunition System - Base Level
CEMS	Comprehensive Engine Management System
CFM	CONUS Freight Management System
CFRS	Computerized Fault Reporting System
CMOS	Cargo Movement Operations System
D035	Depot Inventory Management System
D035A	Item Manager Wholesale Requisition System (world-wide inventory)
D035K	Depot Retail Supply Accounting System/Wholesale & Retail Receiving and Shipping System
D072	Other War Reserve Materiel Requirements
DAAS	Defense Automated Addressing System
DAMMS-R	Department of the Army Movements Management System - Redesign
DEPRA	Defense Program for the Redistribution of Assets
DFAMS	Defense Fuels Automated Management System
DFAS	Defense Finance and Accounting System (-DA: Dayton; -DE: Denver; -IN: Indianapolis)
DMAS	Dyna-Metric Microcomputer Analysis System
DSS	Distribution Standard System
EPS	Exchangeable Production System
ETADS	Enhanced Transportation Automated Data System
EXPRESS	Execution and Prioritization of Repair Support System (Asset Management and Dist System)
FAMS-A	Fuels Automated Management System - Air Staff
FAS	Fuels Automated System
G009	Government Furnished Material Transaction Reporting System

GCSS	Global Combat Support System
GTN	Global Transportation Network
HOST	Headquarters On-Line System for Transportation
ILSS	Integrated Logistics System-Supply
IMDS	Integrated Maintenance Data System
M024B	Intersite Gateway System
MACA	Military Airlift Clearance Authority
MADS	Message Accountability Delivery System
MASS	MICAP Asset Sourcing System
METS	Mechanized Export Traffic System
MTS	Material Tracking System
OLVIMS	On-Line Vehicle Integrated Management System
SAMMS	Standard Automated Materiel Management System
SATS	Supply Asset Tracking System
SBSS	Standard Base Supply System
SEMR	Senior Executive Management Review
SIFS	Supply Interface
TC AIMS II	Transportation Coordinators Automated Information for Movement System. This DOD System will eventually replace CMOS. Until then, TC AIMS II will interface with CMOS. Used by SEMR.
UMMIPS	Uniform Materiel Movement Issue Priority System
VAN	Value Added Network
VLIPS	Visual Logistics Information Processing System
WPS	Worldwide Port System
WSMIS	Weapon System Management Information System
WSSP	Weapon System Support Program

Appendix B

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.1.1	MC Goals Not Linked to Sustainment Funding	Overall	Air Staff/MAJCOM Focus - Mission Capability (MC) Goals Are Not Linked to Sustainment Funding	Command-established weapon system MC goals are not directly linked to asset sustainment funding levels. Warfighter expectation of the logistics system is totally disconnected from the realities of funding. The warfighter assumes the logistics system is designed to immediately provide everything ordered. If items are not immediately provided when ordered, the warfighter concludes the logistics system is "broken." The reality is that the depot is funded to buy enough materiel to achieve an 85% MC rate. Historically, the logistics system can repair enough materiel to maintain the AF at close to 85% MC. However, Air Staff establishes MC goals for the wings which are not directly related to depot funding levels.	Link MC Goals to Sustainment Funding	Procedures should be established to address the above disconnect between goals and funding and the incentive for wings to exceed established goals. Ensure Commands will not establish MC goals that cannot be met within the funding levels provided to the depots.	Maximum Improvement	Long-Term
3.1.2	Exceeding MC Goals	Overall	Wing Focus - Wings Are Incentivized to Exceed MC Goals	Operational wings are incentivized to exceed Command-established weapon system mission capability goals. The ability of a wing to exceed the Air Staff-established MC goals is based on that wing's ability to procure resources and not necessarily based on highest priority mission requirement. Because total resources are finite and limited, when one wing procures resources necessary to exceed its MC rate, it has done so at the expense of other wings.	Remove Incentives for Exceeding MC Goals	Identify and remove incentives that reward a wing for exceeding standards, and perhaps establish disincentives.	Maximum Improvement	Mid-Term
3.1.3	Depot Focus on Wing MC Goals	Overall	Depot Focus - Depot Output Is Not Focused On Wing MC Goals	The Logistics Asset Sustainment Process is fragmented, with each activity recognizing only the next activity in the process as its customer with little focus on the ultimate goal. Many of the existing metrics focus activity attention on internal goals and isolate activities from the total over-arching process goal. As a result, many internal activities pursue behaviors counter-productive to the total over-arching process goal.	Depot Ownership of Not Mission Capable - Supply (NMCS) Aircraft	1. Develop incentives which will focus all Logistics Asset Sustainment Process activities on the ultimate goal of producing mission capable weapon systems. The white paper at Appendix F further discusses one concept for achieving this objective. 2. Following the redesign of the total process, existing metrics will be re-evaluated and new metrics developed to ensure internal activities are incentivized to support the over-arching process goal.	Maximum Improvement	Long-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.1.4	Unnecessary Express-Shipping	Overall	Unnecessary Express-Shipping of Carcass-Long Assets	Current Air Force policy directs all carcasses to be shipped by express transportation regardless of need. Only carcass-short items need fast transportation. We may be spending money unwisely. All reparable carcasses are express-shipped from bases to depots without regard or knowledge as to whether assets are carcass-long or carcass-short. All serviceable assets are routine-shipped from depots to bases with the exception of MICAPs. MICAPs are express-shipped without regard for immediate need. Many times, MICAP assets are not immediately installed on the aircraft but are placed in tail number bins awaiting installation.	Express-Ship Only Carcass-Short Assets	Develop a tool to provide retail shippers visibility of carcass-short assets. Change AF policy to allow retail managers to express-ship only carcass-short assets to the depot. Change AF policy to allow depots to express-ship serviceable assets only when it improves MC at the wing	Moderate Improvement - saves shipping costs on carcass-long assets.	Mid-Term - requires development of visibility tool and USAF policy change.
3.1.5	Legacy System Interfaces	Overall	Limited Interface Between Legacy Systems	There is a lack of real time interfaces between legacy systems. Most legacy systems are batch systems and were developed as closed systems within each functional stovepipe organization. Some interfaces have been developed, however many involve passing data through multiple nodes. Each node causes delays and information losses often occur. For example, there is no direct link from the Standard Base Supply System (SBSS) to the Depot Inventory Management System (D035), or direct access to D035 data from the retail bases. Currently this interface requires transmitting information from the SBSS through the Automated Data Reports Submission System II (ADRSS II), to the Defense Automated Addressing System (DAAS), to the Defense Program For Reutilization of Assets (DEPRA), back to DAAS, then to the Inventory Control Point (ICP), to the Intersite Gateway System (M024B), and then to the Item Manager Wholesale Requisition System (D035A). New systems in development, such as Global Combat Support System (GCSS) and Integrated Maintenance Data Systems (IMDS), should provide long-term solutions to these problems.	Employ Wrappers for Legacy Systems Interface	1. Mid-Term: Develop and provide real-time links between legacy systems, such as SBSS and D035, using Modem, Internet, and/or Wrapper technology. Appendix G contains a white paper regarding Wrapper technology. Such technologies could operate in parallel with current legacy system interfaces, minimizing implementation difficulty.	Maximum Improvement	Mid-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.1.6	Asset Shipment Priorities		AF Asset Shipment Priorities are not Standard	AF assets shipped between bases and depot are processed through DLA. The Air Force has fifteen Uniform Materiel Movement Issue Priority System (UMMIPS) priorities for requisitioning (procure, repair, and ship) assets. However, DLA utilizes only two shipment priorities: express and routine. The depot DLA evaluates the UMMIPS priority, MICAP or routine status, and Required Delivery Date (RDD) shown in DD Form 1348-1 Issue Release/Receipt Document, and selects shipping priority accordingly. If the RDD is missing or has expired, DLA selects routine shipping, regardless of UMMIPS or MICAP priority shown on DD Form 1348-1. The Air Force is the only Service for whom DLA overrides requested priority based on RDD.	Air Force Designate Shipment Priority	1. Air Force standardize with other Services and direct ship according to priority code rather than UMMIPS priority and RDD. 2. Air Force pre-determine shipment priority for asset return from the depot, and code it as express or routine on DD Form 1348-1 before forwarding to DLA for follow-through.	Minimum Improvement	Mid-Term - involves action and agreement between Air Force and DLA.
3.1.7	Barcoding Systems	Overall	Barcoding Systems are not Standardized	There are numerous barcode systems used throughout the logistics pipeline. Each of these systems creates a unique barcode for its segment of the logistics process. As a result, there are disconnects between barcode systems which create requirements for manual entry of data that reside elsewhere. For example, barcodes on DD Form 1348-1 are not used by DLA's Automated Warehouse System (AWS). After the asset is in-processed by DLA personnel, AWS creates a file to track the asset and assigns it another unique bar code. This AWS file number and barcode are different from the document number and barcode that are already on the asset's DD Form 1348-1. There is no link between the two sets of file numbers and barcodes. AWS will be replaced with the Distribution Standard System (DSS).	Reevaluate Non-Standardized Barcoding Systems-Pending DSS Implementation	After installation of DSS, reevaluate to determine if the implementation of DSS has resolved this problem.	Minimum Improvement	Mid-Term - contingent upon DSS implementation.

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.2.1	MICAP Requisition Status	Retail (Base/Wing Activities).	MICAP Requisition Status is not Based on MC Goals	Currently, MC goals are established by higher headquarters for each squadron's aircraft fleet. These MC goals recognize that some of each squadron's aircraft will not be mission capable at any given time, due to part shortages or maintenance requirements. However, current requisitioning directives require the squadron to requisition those parts causing any aircraft to be non-MC, in MICAP status, regardless of the overall fleet MC. The MICAP requisition status causes the base supply to take extraordinary management actions to procure the part. If the Base Supply were successful in all the procurement actions, satisfying all MICAP requisitions instantly, the squadron's fleet MC goal would be exceeded. However, the sustainment system is not funded at 100%. Therefore, any one squadron exceeding its MC goal has done so at another squadron's expense.	Link MICAP Status to MC Goals	Develop a process by which the extraordinary management actions taken to satisfy a MICAP requisition are taken based on the relationship between a unit's current fleet MC rate and the HQ-established MC goal, rather than on each individual aircraft's MC status. Additionally, new terminology should be developed to prevent confusion between an individual aircraft's MC status and an operational unit's MC status.	Maximum Improvement	Mid-Term
3.2.2	Aircraft Scheduling Directives	Retail (Base/Wing Activities).	Aircraft Scheduling Directives Drive Unnecessary Cannibalizations	Aircraft flying scheduling directives require identification of specific aircraft for daily flying schedules up to one week in advance. If the identified aircraft becomes Not Mission Capable - Supply (NMCS) on a day when it is scheduled for flight, another mission capable aircraft cannot be substituted without incurring a "scheduling deviation." Quality Performance Measures (QPMs) have been developed which incentivize Maintenance Managers to minimize "scheduling deviation" occurrences. To minimize "scheduling deviations," Maintenance Managers will direct cannibalization of parts from an aircraft that is not scheduled to fly in order to repair the aircraft that is scheduled to fly. This will occur even when other unscheduled MC aircraft are available to fly. This practice consumes resources and occasionally results in damaged parts, without improving overall MC.	Change Aircraft Scheduling Directives/Methods	An ACC Reengineering Team (Maintenance and Supply) should be formed to reevaluate the QPMs (which result in cannibalization rather than substitution of MC aircraft when meeting daily flying schedules).	Moderate Improvement	Mid-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.2.3	Shipping Addresses	Retail (Base/Wing Activities).	Some Reparable Assets Shipped to Depot are Mis-addressed	Retail shippers send some Lean Logistics items to the incorrect Department of Defense Activity Address Codes (DoDAACs). As a result, assets with incorrect DoDAACs are received at the depot DLA Central Receiving rather than at their ultimate destination warehouse. This results in additional handling and delay following the receipt of the asset at the depot DLA Central Receiving. There are several possible DoDAACs for delivery destinations at each depot which may exacerbate the situation. The DoDAAC database is contained in D035T (distribution), however, this data is not readily available to shippers.	Develop Direct Shipping	1. Ship reparable assets directly to final repair/storage location. a. Establish a database of separate DoDAACs or street addresses for all repair/storage locations. b. Link stock numbers to DoDAACs or addresses. c. Ensure the database is readily accessible to the shippers. 2. Make existing DoDAACs more easily available to shippers. 3. Encourage shippers, through incentives, to use correct DoDAACs.	Minimal Improvement	Mid-Term
3.2.4	Unnecessary Asset Handling - Base Receiving	Retail (Base/Wing Activities).	Unnecessary Asset Handling in Base Receiving Process	All retail requisitions to the depot include instructions for the depot to ship assets back to base Central Receiving (TMF). Following initial receipt at base Central Receiving, the asset must be moved to its final storage/issue location. This results in additional handling and delay.	Develop Direct Shipping	Request shipment of serviceable assets directly to final storage/issue locations. a. Establish separate DoDAACs or use street addresses for all storage/issue locations. b. When requisitioning assets, use the SBSS storage location database to request shipment to final storage location. The Aircraft Generation Squadron (AGS) Parts Stores would become the asset receipt, inspection, storage, and issue point for all express-shipped aircraft assets.	Moderate Improvement - little impact on asset processing time but reduced handling requirements will have a significant impact on resource requirements.	Near-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.2.5	Unnecessary Asset Handling - Base Shipping	Retail (Base/Wing Activities).	Unnecessary Asset Handling in Base Shipping Process	Base resources are unnecessarily expended moving Not Reparable This Station (NRTS) assets to a central outbound shipment location (e.g., base TMF).	Develop Direct Shipping	Install FedEx PowerShip terminals at all base locations meeting minimum daily shipment volume requirements. Ship all assets meeting carrier's size and weight criteria directly from these locations. Base TMF would ship all other assets (those not meeting carrier's criteria).	Moderate Improvement - little impact on asset processing time but reduced handling requirements will have a significant impact on resource requirements.	Near-Term
3.2.6	SBSS and D035 Interface	Retail (Base/Wing Activities).	Interface Between SBSS and D035 is Slow and Uncertain	The interface between SBSS and D035 consists of numerous transmissions through multiple nodes. Each node uses batch processes to execute edits on data being transmitted. These batch processes delay the transmission of information and some information is lost. As a result, there is no real time or direct access to D035 data from SBSS. Additionally, requisition status data transmission problems occur in the reverse process. A finding by AFLMA study LS9601800, "Analysis of the Supply Requisitioning System" shows that only 17% of SBSS mail traffic are initial requisitions. Approximately 14% of these initial requisitions are lost in transmission, resulting in numerous re-transmissions and follow-ups.	Develop SBSS and D035 Wrapper Links	Develop real-time links between SBSS and D035, using Wrapper technology. Appendix G contains a white paper regarding Wrapper technology. This technology could operate in parallel with the current SBSS/D035 interfaces.	Moderate Improvement - shortening the process (from days to minutes) of placing a requisition to the depot and receiving the status, will allow bases to make timely aircraft management decisions. Direct interface to D035 will also help eliminate transmission losses.	Near-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.2.7	Unnecessary Inventories	Retail (Base/Wing Activities).	Bases Maintaining Unnecessary Inventories	Base Supply is unnecessarily maintaining inventories of assets that are readily available from other sources. If Base Supply no longer stocks assets readily available through other sources, then inventory, holding, and resource costs would be reduced. Currently, Shaw AFB Supply Squadron is testing an inventory reduction plan. This test is intended to reduce Base Supply inventory to weapon system related assets which are not readily available from other sources.	Implement Base Supply Inventory Reduction Program	1. Base personnel could use the International Merchants Purchase Authorization Card (IMPAC) to purchase materiel directly from commercial vendors. 2. Use the Virtual Prime Vendor (VPV) Program for direct vendor to user resupply. Currently, VPV Programs are developed through DLA. DLA awards contracts to vendors to provide specific parts in accordance with vendor performance guidelines. According to how the contract is written, you can use existing contracts, modify existing contracts or develop new contracts. Under the VPV Program, the vendor is responsible for materiel inventory and delivery. 3. Examine the results of Shaw AFB Stock Reduction Plan. 4. Streamline Local Purchase process. Refer to 3.2.15, Local Purchase Programs, for further discussion on this recommendation.	Impact: Moderate Improvement - depends on degree of implementation.	Long-Term
3.2.8	Managing Due In From Maintenance (DIFM) Assets	Retail (Base/Wing Activities).	Unnecessary DIFM Management of Field-Condemnable Assets	There is a significant amount of Supply and Maintenance resources expended managing DIFM assets. The financial accountability for these assets is necessary to provide the incentive for responsible activities to track and control the assets. DIFM assets are divided into two distinct categories, XD and XF. XD assets, if unrepairable at the base, are transferred to the depot and clears the base of DIFM (financial) accountability. XF assets, if unrepairable at the base, are condemned at the base and replaced with base O&M funds. The requirement to replace XF assets with O&M funds provides financial incentive for responsible units to track and control these assets without use of the DIFM management process.	Discontinue DIFM Management of XF Assets	Investigate deleting the requirement to manage XF assets as DIFM items.	Moderate Improvement	Near-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.2.9	Unnecessary Cargo Movement Operations System (CMOS) Processing	Retail (Base/Wing Activities).	Overall CMOS Finding: CMOS processing may not be necessary for every shipment or receipt. CMOS is not currently used by DLA. As a result, shipments from DLA to a base are not entered into CMOS prior to shipment, and shipments to the depot from a base are not cleared from CMOS upon receipt. Because the depot DLA does not enter the data into CMOS prior to shipment, when depot shipments are received by a base Traffic Management Flight (TMF), TMF personnel must enter shipment data into CMOS and then process the receipt. This practice delays processing of the receipt, consumes resources, and adds no apparent value to the process. DLA is converting from AWS to the Distribution Standard System (DSS) in the near future. When DSS is implemented, it will interface with CMOS. When commercial shippers are able to provide in-transit visibility, CMOS should not be used to duplicate the commercial shippers' in-transit visibility capability. Subsections 3.2.9.1 through 3.2.9.8 represent different facets of the direct shipment concept.					
3.2.9.1	DLA to Base TMF (Pre-DSS Implementation)	Retail (Base/Wing Activities).	Shipments from DLA to Base TMF	Current timeframe: pre-DSS implementation. Currently, the DLA AWS does not interface with CMOS therefore, DLA shipments and receipts are not recorded in CMOS by DLA. TMF does not have advance notification through CMOS of inbound shipments from DLA. When DLA shipments are received by base TMF, TMF personnel must manually enter the shipment data into CMOS and then process the receipt. This practice delays processing of the receipt, consumes resources, and adds no apparent value to the process.	Develop Direct Shipment	Deliver shipments directly to final issue storage location or base end user, thereby eliminating the requirement for TMF to record receipts and processing information in CMOS for the purpose of creating accountability records.	Moderate Improvement	Near-Term
3.2.9.2	DLA to Base End User (Pre-DSS Implementation)	Retail (Base/Wing Activities).	Shipments from DLA to Base End User	Current timeframe: pre-DSS implementation. Currently, the DLA AWS does not interface with CMOS therefore, DLA shipments and receipts are not recorded in CMOS by DLA. Currently, most retail bases have Traffic Management Flights (TMFs) established as central receiving points for all receipts, including DLA shipments. TMF personnel receive shipments and process them for delivery to base end users. Even though most shippers have the capability to deliver directly to the final storage/issue location, the established procedure requires TMF and Base Supply to serve as intermediary handlers in the shipment process.	Develop Direct Shipment	Eliminate intermediary handlers in the shipment process and implement direct delivery of assets from DLA to the final storage/issue location.	Moderate Improvement	Near-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.2.9.3	Base TMF to DLA (Pre-DSS Implementation)	Retail (Base/Wing Activities).	Shipments from Base TMF to DLA	Current timeframe: pre-DSS implementation. Currently, the DLA AWS does not interface with CMOS therefore, DLA shipments and receipts are not recorded in CMOS by DLA. DLA does not have visibility of inbound shipments through an AWS/CMOS interface. Currently, the receipt is manually entered in D035 by DLA. D035 transmits the receipt acknowledgment to the shipping base SBSS as a "D6 receipt report" and then the base SBSS transmits that information to the sending CMOS. Since DLA is not aware of overdue shipments, they cannot expeditiously initiate tracer actions.	Develop Direct Shipment	Further study is required to determine how, or if, tracer actions are initiated by DLA when an asset is overdue.	Minimal to Moderate Improvement	Mid-Term
3.2.9.4	Base End User to DLA by Express Carrier (Pre-DSS Implementation)	Retail (Base/Wing Activities).	Express Carrier Shipments from Base End User to DLA Current timeframe: pre-DSS implementation. Currently, the DLA AWS does not interface with CMOS therefore, DLA shipments and receipts are not recorded in CMOS by DLA.	Express carrier shipments can be made directly from a base end user to DLA. When the base end user does not have a CMOS terminal, the shipment data is not entered into CMOS. The express carrier provides the required intransit visibility between the base end user and DLA.	Develop Direct Shipment	When the base end user has the capability to make direct shipments to DLA, discontinue processing those direct shipments through TMF and discontinue entering that shipment data into CMOS.	Moderate Improvement	Near-Term
3.2.9.5	DLA to Base TMF (Post-DSS Implementation)	Retail (Base/Wing Activities).	Shipments from DLA to Base TMF	When DSS is implemented, DSS will interface with CMOS. Therefore, DLA shipments will be automatically recorded in CMOS by DSS. As a result, base TMFs will have advance notification through CMOS of inbound shipments from DLA. Additionally, all SBSS users will have shipment visibility through the CMOS/SBSS interface.	Develop Direct Shipment	Evaluate effectiveness of the intransit visibility following implementation of DSS.	Minimal Improvement	Long-Term
3.2.9.6	DLA to Final Base Storage/Issue Location (Post-DSS Implementation)	Retail (Base/Wing Activities).	Shipments from DLA Directly to Final Base Storage/Issue Location	When DSS is implemented, DSS will interface with CMOS. Depot DLA shipment data will be automatically entered in CMOS through DSS. This will give base end users inbound shipment visibility through the CMOS/SBSS interface.	Develop Direct Shipment	Since most end users will not have a CMOS terminal, further study is required to determine if manual CMOS receipt processing at TMF will be required and, if so, determine the best way to accomplish the CMOS processing.	Moderate Improvement	Mid-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.2.9.7	Base TMF to DLA (Post-DSS Implementation)	Retail (Base/Wing Activities).	Shipments from Base TMF to DLA	When DSS is implemented, DSS will interface with CMOS. Therefore, DLA receipts will be automatically recorded in CMOS by DSS. Additionally, DLA will have visibility of inbound shipments through CMOS/DSS interface, will be aware of overdue shipments, and could expeditiously initiate tracer actions.	Develop Direct Shipment	Further study is required to determine how, or if, tracer actions will be initiated by DLA when an asset is overdue.	Moderate Improvement	Mid-Term
3.2.9.8	Base End User to DLA by Express Carrier (Post-DSS Implementation)	Retail (Base/Wing Activities).	Express Carrier Shipments from Base End User to DLA	Express carrier shipments can be made directly from a base end user to DLA. When DSS is implemented, DSS will interface with CMOS. However, when the base end user does not have a CMOS terminal, the shipment data is not entered into CMOS. The express carrier provides the required intransit visibility between the base end user and DLA.	Develop Direct Shipment	Further study is required to ensure DLA has direct visibility of inbound express carrier shipments and tracer actions for overdue shipments are expeditiously initiated.	Moderate Improvement	Mid-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.2.10	MICAP Off-Line Requisitioning	Retail (Base/Wing Activities).	Resource Intensive MICAP Off-Line Requisitioning Process	The MICAP off-line requisitioning process is cumbersome and resource intensive. The automated on-line requisitioning and status notification response time can take as long as two days due to multiple nodes (SBSS/SIFS/ADRSS II/DAAS/M024B/D035) which batch process the data. Emerging data systems, such as IMDS and GCSS, will not provide near-term solutions. To accelerate this process, MICAP section personnel conduct "off-line" requisitions (phone Depot Customer Service and request manual input of a requisition to D035 and receive immediate status). Off-line requisitioning is a "work around" process conducted in parallel with the automated on-line requisitioning system. When the automated on-line requisition (placed through SBSS) arrives at the depot, D035 will recognize it as a duplicate of the off-line requisition and cancel it. This demonstrates D035's capability to successfully handle duplicate requisitions. Although the off-line requisition "work-around" consumes resources at both the base and the depot, it does provide immediate, rather than delayed, requisition status. The difference between immediate and delayed requisition status is of marginal value to the customer. Even though the off-line requisition "work around" may save time by avoiding the batch system processing, it may not affect actual asset shipment time because shipments depart the depot at fixed intervals.	1. Discontinue manual off-line MICAP requisitions and allow the automated SBSS/D035 interface to transmit requisition and status data. 2. Automate the off-line requisitioning process with a Wrapper application providing a direct link between SBSS and D035. This Wrapper application would work in parallel with existing systems, yet provide accelerated requisitions to the depot and accelerated status information to the customer. Since D035 can handle duplicate requisitions, it does not require disconnecting or modifying any existing interfaces between SBSS and D035. The white paper at Appendix G further discusses Wrapper applications.		Moderate Improvement	Near-Term
3.2.11	MICAP Validation Process	Retail (Base/Wing Activities).	Redundant MICAP Validation Process	The current process requires Base Supply to validate that a MICAP condition exists before processing a customer's backorder requisition to the Source of Supply as a MICAP. This validation consists entirely of Base Supply calling the customer to confirm the MICAP. Calling the customer who initiated the requisition is redundant and only provides an illusion of verification.	Terminate MICAP Validation Process	Eliminate Base Supply validations of MICAP status and accept the customer's initial requisition prioritization.	Moderate Improvement	Near-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.2.12	Air Force Contingency Supply Squadron (AFCSS) Potential Capabilities	Retail (Base/Wing Activities).	AFCSS Potential Capabilities not Fully Developed	HQ ACC/LGS founded the AFCSS at Langley AFB, VA. The AFCSS was initially implemented to provide supply support to deployed supply units worldwide. Due to the success of the AFCSS, and because of command-wide supply manning cuts, the AFCSS is now phasing-in the workload from MICAP, Stock Control, Computer Support, Funds Management, and Records Maintenance of all ACC CONUS-based supply squadrons throughout Calendar Year 1998. The AFCSS provides centralized visibility of the overall distribution process at command-level. This centralized visibility provides an opportunity to exercise centralized control of the asset distribution system. Procedures to exercise this potential capability have not been explored or developed.	Identify and Develop Potential AFCSS Capabilities and Tools	1. Conduct a study to assess feasibility of incorporating other functions (e.g., Transportation, Maintenance, Finance, Contracting) into the AFCSS. 2. Automate current management tools, and develop new tools, to facilitate centralized control of the total asset distribution process throughout the Command. This takes full advantage of the new AFCSS centralized visibility. The following provide examples of existing technology: a. Wrapper applications provide single-point access to retrieve data in multiple systems, process the data, and produce management reports. b. Worldwide Web technology provides the capability to post standard reports on a web site for access by multiple users.	Moderate Improvement	Mid-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.2.13	Asset Distribution Management	Retail (Base/Wing Activities).	Management of Asset Distribution is Decentralized and Fragmented	Currently, UMMIPS and the Asset Management and Distribution System (EXPRESS) provide an automated prioritization for distribution of assets. In a resource-constrained environment, UMMIPS and EXPRESS will distribute available assets to highest priority units at the expense of lower priority units. Each individual Base Supply establishes a MICAP section to take exceptional management actions to satisfy customer requisitions, regardless of priority. The net effect of the MICAP sections' exceptional management actions is the active circumvention of the UMMIPS and EXPRESS distribution priorities. Therefore, scarce resources may be allocated to units that do not have the highest priority requirement and the central control function is circumvented.	Establish and Test a Weapon Systems Support Center (WSSC) in AFCSS	Establish and test a WSSC in the Air Force Contingency Supply Squadron at HQ ACC. Adopt the WSSC concepts currently used at the depots, to improve management and distribution of assets at the retail level. The command-level WSSC will make centralized manual intervention in asset distribution decisions based on daily changes in command priorities as defined by the priorities established by the command headquarters. The WSSC consists of the right people working together with a central goal of distributing assets to the Command's highest priority asset requirements. The WSSC typically includes members from Supply, Maintenance, Transportation, Finance, and Contracting. The WSSC members work for one individual who is responsible for the process outcome. The WSSC concept removes the idle time and separate goals of different offices working individually and improves communication for resolution of resource issues. It also eliminates the individual management actions taken by Base Supply MICAP sections to meet their individual wing priorities which may defeat over-all command priorities.	Moderate Improvement	Mid-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.2.14	Supply Assistance Program	Retail (Base/Wing Activities).	Ineffective Supply Assistance Program	The Supply Assistance Program provides a means for the base to alert the Item Manager of a difficulty in obtaining support. Current developments such as EXPRESS and Readiness-Based Leveling (RBL) eliminate the Item Manager's ability to take action based on the Assistance Request. Because no action can be taken, the request is ineffective, and consumes resources at the base to generate it and resources at the depot to answer it.	Eliminate Supply Assistance Program	Priorities are already established through other means. The Supply Assistance Program has no impact on the requisition/distribution process.	Minimum Improvement	Near-Term
3.2.15	Local Purchase Programs	Retail (Base/Wing Activities).	Local Purchase Programs are Cumbersome	The current Local Purchase Program (LPP) appears to be a candidate for streamlining. The LPP is managed by Base Supply and ensures funds are expended from the proper, congressionally mandated, appropriated fund categories. Base Supply provides an interface between base customers who order materiel to be procured from local providers, and Base Contracting, which procures materiel from the local providers. Furthermore, it is not clear as to when alternatives to the LPP (such as IMPAC) are appropriate.	Streamline Local Purchase Programs	Develop a streamlined local purchase program that ensures funds are expended from the proper, congressionally mandated, appropriated fund categories, and is user-friendly. Some options may include: a. Eliminating the Local Purchase Program as it currently exists. b. Consolidating all local purchase methods (e.g., Virtual Prime Vendors, IMPAC) into a single, new local purchase program. c. Transferring management of the current, or reengineered, Local Purchase Program to Base Contracting or Financial Management, thus eliminating Base Supply as the "middle man" in the process.	Moderate Improvement	Long-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.2.16	Supply and Transportation Merger Opportunities	Retail (Base/Wing Activities).	Opportunities for Supply and Transportation Merger	During development of the As-Is process flowchart, AFLMA identified several areas of redundancy between base supply and base transportation functions (e.g., receiving cargo). Concurrently, HQ ACC Supply and Transportation divisions directed a joint 90-day test merging three processes between supply and transportation at Shaw AFB, SC. The 90-day test focuses on Receiving (TMF and Supply Receiving), Moving (Vehicle Operations and Supply Pickup and Delivery), and Shipping (TMF and Supply Distribution Flight). Data system inputs are contingent upon implementation of an interface between Supply Asset Tracking System (SATS) and CMOS, so that only one input for receiving property is necessary.	Form an ACC/AFLMA To-Be Process Team -- Incorporate Shaw Consolidation Results	Form a team at ACC consisting of AFLMA, HQ ACC, AFCSS and base level representatives from Supply, Maintenance, and Transportation, to develop improved To-Be processes. This team will evaluate the results of the Shaw consolidation project during the development of a To-Be Air Force logistics process. This To-Be process will focus on the total Air Force logistics process encompassing Supply, Transportation and Maintenance functions at wholesale and retail levels.	Maximum Improvement	Long-Term
3.3.1	Unnecessary Manual Data Entry Requirements	Wholesale	Unnecessary Data Entry for Depot Asset In-processing	In processing of assets at DLA is delayed by manual entry of data into the Deport Wholesale and Retail Receiving and Shipping System (D035K) that already exists in D035A. D035A contains DD Form 1348-1 data, "D7 shipment report," of inbound assets. However, when an asset is received, DLA receiving personnel must re-input the same DD Form 1348-1 data to create a "D6 receipt report," because D035K does not give DLA visibility of the "D7 shipment report" data.	Long-Term: The AFLMA Logistics Process Optimization Team should ensure new systems coming on-line (DSS and GCSS) resolve this problem.		Minimum Improvement	Long-Term
3.3.1-Con't	Unnecessary Manual Data Entry Requirements	Wholesale	Unnecessary Data Entry for Depot Asset In-processing		Interim: The AFLMA Logistics Process Optimization Team to assist DLA in submitting a Computer System Requirement Document (CSRD) to the Material Systems Group (MSG). The CSRD is for reprogramming D035K to provide visibility of the "D7 shipment report" to DLA personnel processing inbound shipments, and reprogramming D035K to use "D7 shipment report" data to populate the "D6 receipt report" immediately upon input of the document number.		Minimum Improvement	Long-Term
3.3.1-Con't	Unnecessary Manual Data Entry Requirements	Wholesale	Unnecessary Data Entry for Depot Asset In-processing		Interim: Develop a wrapper application to provide visibility of the "D7 shipment report" to DLA personnel processing inbound shipments, and use "D7 shipment report" data to populate the "D6 receipt report" immediately upon input of the document number.		Minimum Improvement	Near-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.3.2	EXPRESS Response Time	Wholesale	EXPRESS Processing Delays Repair of MICAP Assets	There is a time lag between the time a requisition reaches D035 and the time the EXPRESS prioritized repair and distribution lists are generated and distributed to shops and DLA. Currently, it takes at least two days from the time a requisition is entered into D035 until EXPRESS produces the final prioritized repair list for the depot.	WR-ALC EXPRESS Review Team to Continue Efforts To Improve EXPRESS Response Time	Continue to let the EXPRESS review team at WR-ALC work on improving the response time.	Minimum Improvement	Long-Term
3.3.3	Asset Repair Funds	Wholesale	The Distribution of Assets is not Tied to Weapon System Funding for Common Assets	Asset repair funds are separated by Weapon Systems. Repair, within each Weapon System, is prioritized by Aircraft Availability. For common assets, money is spent to repair parts that improve Aircraft Availability for a specific weapon system. Subsequently, the asset may be distributed to a different weapon system. This indicates a possible disconnect problem between "repair EXPRESS" and "distribution EXPRESS" prioritizations.	WR-ALC/RE and /FM Team to Continue Work Funding Issues for Common Assets	Continue to let the WR-ALC/RE and /FM EXPRESS team work this issue.	Moderate Improvement	Long-Term
3.3.4	Hours of Operation - Depot Repair Shop and DLA	Wholesale	Depot Repair Shop and DLA Delivery Hours of Operation may not Correspond	Depot repair shops are not always open to accept express-shipped carcasses delivered from DLA. DLA provides 24-hour coverage Mondays through Fridays, and day shift on Saturdays. DLA performance is evaluated by the depot based on elapsed time from the DLA receipt of the requisition/asset to the receipt (not delivery) of the carcass/asset by the depot repair shop.	WR-ALC/RE Study and Resolve Disconnect between Depot Repair Shop and DLA Hours of Operation	Warner Robins RE Office should undertake a study to: 1. Change depot evaluation criteria to hold DLA accountable only during the times the shops are open, and 2. Hold depot shops accountable for being available to accept express shipments.	Minimum Improvement	Mid-Term

Phase I Findings

NUMBER	TITLE	APPLICABILITY	FINDING	EXPLANATION	RECOMMENDATION	EXPANSION	IMPACT	DURATION
3.3.5	Materiel Managers	Wholesale	Unclear Roles and Limited Tools and Training for Material Managers (MMs)	Material Managers' current activities may not significantly improve logistics support to the Air Force mission. MMs' actions are not directly governed by prioritized Air Force logistics requirements. Material Managers are tasked to support items within a stock class rather than items required to improve logistics support to the Air Force mission. MMs are provided limited training and their roles and responsibilities are not well defined. Additionally, MMs are not provided the automated tools necessary for clear visibility of assets in the pipeline. Automated tools would allow MMs to determine if a pipeline is populated and flowing correctly and, if not, to take any appropriate corrective actions.	Form a Combined Depot and AFLMA Team to Study Roles and Tools for MMs	Form a combined Depot and AFLMA team to research the future role of MMs and: 1. Revise/rewrite the role of the MM. Potential outcomes may include: a. Reorganize or discontinue the current role of the MM. b. Form Material Manager Teams. c. Create a WSSC-type organizational structure. 2. Develop automated tools/techniques to: a. Give MMs asset visibility throughout the logistics pipeline. b. Provide the capability to intervene as necessary to ensure proper movement of assets. 3. Ensure MMs are properly trained and qualified to perform all required tasks.	Moderate Improvement	Long-Term (contingent upon 3.1.3, Depot Focus on Wing MC Goals)

Appendix C

P & D Logbook
Raw Data

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J738JE80560128	6150013111150				7	27	1001	8-May-98
J738JE80770077	6150013111150				9	25	1003	8-May-98
J738JE80840009	6150013111150				9	24	1004	8-May-98
J738JE81260034	2840003437627				11	22	1005	8-May-98
J713FL81270047	2915013307831				9	24	1006	8-May-98
J738MR81210070	3040003612783				8	3	1006	8-May-98
J738MR81210071	3040003612783				7	54	1006	8-May-98
J738MR81250101	2840012543054				4	57	1006	8-May-98
J738MR81210072	3040003612783				10	19	1007	8-May-98
J738MR81210071	3040003612783				8	3	1009	8-May-98
J738MR81270098	2840014282576				4	25	1010	8-May-98
J738JE81270032	1650003679578				4	22	1010	8-May-98
J738QB80790053	6150013111150				6	21	1014	8-May-98
J718FL81258496	2840012543054				7	16	1015	8-May-98
J738JE81260031	2840003437627				11	43	1022	8-May-98
J738JE81200110	5340010562695				10	40	1022	8-May-98
J738JE81260157	2840003214566				10	37	1023	8-May-98
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J738JE71188111	2915013307831				19	2.6	1036	8-May-98
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B738JE81190015	5306003921621					2.6		8-May-98
B738JE80300503	5320002643353					1.6		8-May-98
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FB480081110036	5310003589327					1.4		8-May-98
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FB480081250102	6150010685284					1.4		8-May-98
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J738MR81180027	2840014434069				3	30	1410	11-May-98
J738M481260168	2840011559148				5	26	1411	11-May-98
J738JE81260122	3120014318614				9	5	925	12-May-98
J738MR81250107	2915002842526				7	29	1211	12-May-98
J738JE81330009	5331001651941				12	42	748	13-May-98
J738JE81270116	3040012149733				8	30	950	13-May-98
J738MR81260180	2840011802941				9	23	952	13-May-98
J738JE81260160	3040012149733				9	22	953	13-May-98
J738JE81200047	3040012149733				6	30	955	13-May-98
J738MR81310008	2840014282576				26	16	1004	13-May-98
J738MR81270104	2840014282576				26	16	1004	13-May-98
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FB480081140027	4730010805815						1033	13-May-98
J738MR81310023	2840013323439				2	20	1055	13-May-98

P & D Logbook
Raw Data

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J738JE81270029	3040003650248				10	16	1104	13-May-98
J738JE81310072	2840003437627				10	16	1104	13-May-98
J738JE81310041	2840003437627				38	19	1116	13-May-98
J738JE81310088	2840003437627				37	19	1116	13-May-98
J738JE81310078	2840003437627				38	19	1116	13-May-98
J738JE81310071	2840003437627				29	19	1116	13-May-98
J738MR81320045	5320010347597				40	9	1136	13-May-98
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J713FL81510001	6685073233451					57	938	14-May-98
J738JE81310077	2915003275452				7	50	1110	14-May-98
J738JE81310036	2915003275452				6	50	1110	14-May-98
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J738JE81340004	5310003854218				13	12	1018	15-May-98
J738MR81260170	2915002842526PT				3	24	836	18-May-98
J738MR81260187	2915002842526PT				3	24	836	18-May-98
J738JE81358106	1650003779578				8	25	952	19-May-98
J738JE81200043	1650003775916				7	23	954	19-May-98
J738JE81330174	5306003733291				6	22	955	19-May-98
J738MR81380126	2840013131813PT				2	8	941	20-May-98
J738MR80340027	2840011802935PT				7	3	945	20-May-98
J738JE81320035	2915002842526				7	10	952	20-May-98
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J738MR80510107	2840011802935PT				2	23	957	20-May-98
J738JE81380015	2915011800246PT				11	33	957	20-May-98
J738MR81380131	2840012543054PT				13	22	958	20-May-98

P & D Logbook
Raw Data

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B738JE81320669	4730003650769				6	4.25	1034	20-May-98
J738ES81400052	6135008357210				5	5.32	1425	20-May-98
X738JE81403701	9150002617899				5	5.2	1425	20-May-98
J738MR81380130	2840014282576						1425	20-May-98
J738MR81350053	2840005167788PT				2	24	1430	20-May-98
J738ES81400051	9150011977693							20-May-98
X738JE81413704	9150002732388				5	4.37	853	21-May-98
J738JE81000044	1650003679578				7	14	919	21-May-98
J738JE81358108	1650003679578				3	14	919	21-May-98
J738JE81170099	1650003715916				6	10	920	21-May-98
J738MR81260134	2840003479686				7	13	920	21-May-98
J738JE81340064	1650003679578				5	13	920	21-May-98
J738MR81400034	2840013131813				3	26	1014	21-May-98
J738MR81400034	2840013131813				14	26	1014	21-May-98
J738MR81390084	2840012543054				9	26	1014	21-May-98
J738MR81400034	2840013131813				4	25	1015	21-May-98
J738JE81390068	4730010360264				3	19	1021	21-May-98
J738MR81380128	2840013323439				6	16	1024	21-May-98
J738MR81380141	5350010723528				5	15	1025	21-May-98
J738MR81380137	5340010723528				6	15	1025	21-May-98
J738JE81380054	4710011712257				4	28	1027	21-May-98
J738MR81390083	2840014282576				4	28	1027	21-May-98
J738MR80760135	2840011802935				2	28	1027	21-May-98
J738MR80970134	2840011802935				5	30	1027	21-May-98
J738MR81040121	2840011802935				5	25	1030	21-May-98
J738MR81390160	5306003827571				5	22	1033	21-May-98
J738MR81390164	5306003827571				5	22	1033	21-May-98
J738JE81390090	4730010360164				6	22	1033	21-May-98
J738JE81390076	2840003352832				4	22	1033	21-May-98
J738MR81390163	5306003827571				5	16	1039	21-May-98
J738MR81390160	5306003827571				5	16	1039	21-May-98
J738MR81390165	5306003827571				5	16	1039	21-May-98
J738MR81380101	3120012745416				8	16	1039	21-May-98
J738JE81390113	2840003437627				3		1039	21-May-98
J738JE81260142	2995010995028				4	10	1045	21-May-98
J738JE81200041	2995010995028					10	1045	21-May-98
J738MR81400034	2840013131813PT				2	21	1159	21-May-98
J738MR81300135	2840010039017				2	36	1209	21-May-98
J738MR81380142	2840010039017				1	35	1209	21-May-98
J738JE81283702	7930013146133							21-May-98
J738ES81400150	9160002852044							
J738MR81380149	3940010039017				4	20	750	22-May-98
J738MR81410071	2840010039017				4	20	750	22-May-98
J738MR81410070	2840010039017				4	20	750	22-May-98
J738MR81390100	2840003479686				8	18	917	22-May-98
J738MR81390067	2840003479686				8	18	917	22-May-98

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J738MR81400172	2840003326683				4	13	922	22-May-98
B738JE81400173	5310003827593					3	945	22-May-98
B738JE81400173	5310003827593				5	2.11	950	22-May-98
J872TC81398103	4710014159576				7	4.35	950	22-May-98
J738MR81400092	2840014282576					51	953	22-May-98
J738JE81390046	4730003586376				19	40	1004	22-May-98
J738JE81390188	4710010654868				14	39	1012	22-May-98
J738JE81380070	5340003438460				11	28	1012	22-May-98
J738MR81406124	2840003901162				13	31	1012	22-May-98
J738MR81400170	3110011372472				8	33	1012	22-May-98
J738MR81390084	2840012543054				9	26	1014	22-May-98
J738MR81400034	2840013131813				14	26	1014	22-May-98
J738MR81400034	2840013131813				3	26	1014	22-May-98
J738MR81400034	2840013131813				4	25	1015	22-May-98
J738MR81380128	284001332349				1	22	1018	22-May-98
J738JE81390051	2840003479491				2	26	1019	22-May-98
FB480081400017	2840003479491						1020	22-May-98
J738JE81390068	4730010360264				3	39	1021	22-May-98
J738MR81380141	5340010723528				5	15	1025	22-May-98
J738MR81380137	5340010723528				6	15	1025	22-May-98
J738MR80760135	2840011802935				2	28	1027	22-May-98
J738MR8070134	2840011802935				5	22	1027	22-May-98
J738MR81390083	2840014282576				4	28	1027	22-May-98
J738JE81380054	7410011712257				4	28	1027	22-May-98
J738MR81400030	2840003437627				26	20	1029	22-May-98
J738MR80200086	2840011951084				29	21	1030	22-May-98
J738MR81400138	5330003652977				32	15	1030	22-May-98
J738JE81310076	2915010819055				28	15	1030	22-May-98
J738MR81040121	2840011802935				5	25	1030	22-May-98
J738JE81260143	1650003715916				32	14	1031	22-May-98
J738JE81390076	2840003352832				4	18	1033	22-May-98
J738JE81390090	4730010360264				6	18	1033	22-May-98
J738MR81390164	5306003827571				5	18	1033	22-May-98
J738MR81390160	5306003827571				5	18	1033	22-May-98
J738JE81390113	2840003437627				3	14	1039	22-May-98
J738JE81380101	3120012745416				8	14	1039	22-May-98
J738MR81390160	5306003827571				5	18	1039	22-May-98
J738MR81390165	5306003827571				5	18	1039	22-May-98
J738MR81390163	5306003827571				5	18	1039	22-May-98
J738MR72250061	2840011951084				45	0	1041	22-May-98
J738JE81200041	2995010995028				4	10	1045	22-May-98
J738JE81260142	2995010995028				4	10	1045	22-May-98
FB480081350039	5310003827593					0	1133	22-May-98
X719ST81288553	9535002320519				3	1.05	1350	22-May-98
J718FI581400029	2840012543054				3	9	910	26-May-98
J738JE81380017	2915011076177				8	11	929	26-May-98
J738JE81380119	4710002835001				3	9	931	26-May-98
J738JE81390091	4710002835001				10	7	938	26-May-98

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J738JE81400134	4730003613289				17	5	940	26-May-98
J738MR81400038	2840012543054				5	10	950	26-May-98
J738MR81410072	2840010039017				3	27	1103	26-May-98
J738MR81410074	2840010039017				4	25	1105	26-May-98
J738MR81410073	2840010039017				5	25	1105	26-May-98
B738JE81320900	6515013648554					1.5	1205	26-May-98
J738ES81328101	9330014263782					1.5	1205	26-May-98
J738MR81410075	2840010039017				4	35	1610	26-May-98
J738MR81410084	2840005167788				2	40	1615	26-May-98
J738MR81410085	2840005167788				2	40	1615	26-May-98
J738MR81410082	2840005167788				2	40	1615	26-May-98
J738MR81410083	2840005167788				2	40	1615	26-May-98
J738JE81470006	5340013405205				13	3	757	27-May-98
J738MR81400122	5330012153824				3	10	1005	27-May-98
J738MR81400126	2840003438336				13	36	1014	27-May-98
J718FI51428578	4320013327069				18	37	1015	27-May-98
J738JE81400090	1650003715916				14	36	1015	27-May-98
J738JE80970078	6150003292296				15	34	1015	27-May-98
J738MR81260141	2840011802941				6	23	1020	27-May-98
J715FL81400194	2840012323282				7	23	1020	27-May-98
J738MR81260166	2840011802941				12	31	1020	27-May-98
J738JE81390032	4710003694546				10	30	1020	27-May-98
J738JE81270036	4710003694546				10	26	1020	27-May-98
J738JE81280026	1650003715916				10	25	1021	27-May-98
B738JE81400560	4710003325598				1	2.31	1106	27-May-98
B738JE71810253	2840010895273				3	2.24	1107	27-May-98
B738JE81400021	5306003991328				2	2.27	1107	27-May-98
J738MR81410076	2840010039017				2	3	1127	27-May-98
J738MR81460066	2840003479686				24	9	951	28-May-98
J738MR81390171	2840014332716				18	9	951	28-May-98
J738MR81460082	2840003479686				15	9	951	28-May-98
J738MR81470068	2840013131813				2	30	958	28-May-98
J738MR81460080	2840013131813				3	29	958	28-May-98
J738MR81460079	2840013323439				4	22	958	28-May-98
J738MR81460072	2840013131813				2	31	958	28-May-98
J738JE81490023	4730002785000				24	32	958	28-May-98
J738MR81390169	2840014332716				5	19	1015	28-May-98
J738MR81390170	2840014332716				5	19	1015	28-May-98
J738MR81390172	2840014332716				5	19	1015	28-May-98
J738MR81390168	2840014332716				5	19	1015	28-May-98
B738JE70340418	2840014332716				5	19	1015	28-May-98
J738MR81390165	5306003827571				10	22	1018	28-May-98
J738MR81390166	5306003827571				10	22	1018	28-May-98
J738MR81460076	2840014282576				15	21	1019	28-May-98
J738MR81460065	2840014282576				15	20	1020	28-May-98
J738JE81460012	6150010792129				18	19	1021	28-May-98
J738JE81480159	4730005418296				6	15	1501	28-May-98

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DOC #	STOCK #	TCN			REC TO P&D	P&D TO CUST	TIME	DATE
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J738JE81480156	4730002870116				8	16	1504	28-May-98
J738JE81480154	4730002212127				9	16	1504	28-May-98
J738JE81480158	5365002890431				7	15	1505	28-May-98
J738JE81480160	4730002784998				9	6	1509	28-May-98
J738MR81400032	2840013323429				3	3	1015	29-May-98
X738JE81493700	6810002865435						1015	29-May-98
J738MR81390101	2840011559148				4	5	1015	29-May-98
J738MR81460081	2840011559148				4	5	1015	29-May-98
J738MR81410039	6685013233451				9	3	1015	29-May-98
J738MR81470071	2840014282576				3	5	1015	29-May-98
J738MR81460068	2840011449148				6	3	1017	29-May-98
J738MR81470078	2840003479686				10	5	1019	29-May-98
X738JE81493701	8030002523391						1030	29-May-98
J738MR81400038	2840012543054				5	25	1035	29-May-98
J715IS81498580	2840011802941				2	5	1035	29-May-98
J715IS81498580	2840011802941				2	5	1035	29-May-98
J738MR81470094	2840014282576				2	16	1036	29-May-98
J738MR81390069	2840013323439PT				3	32	1038	29-May-98
J738JE81470007	6685013233451				9	28	1040	29-May-98
J738MR81470077	2840003479686				10	28	1042	29-May-98
J738MR81470090	2840003479686				4	19	1042	29-May-98
J713FL81460063	6150010792129				16	26	1045	29-May-98
B738JE81260034	53060103356960				3	3.27	1047	29-May-98
J738MR81190069	2840003479686PT				12	3.2	1048	29-May-98
J738MR81040121	2840011802935				POST	POST (8)	1052	29-May-98
J738JE813300657	2840010135155				2	5	1057	29-May-98
J738MR81410081	2840005167788				4	5	1057	29-May-98
J738MR81040035	2840005167788				4	5	1058	29-May-98
J738MR81380140	2840005167788				4	5	1058	29-May-98
J738MR81410079	2840005167788				4	5	1058	29-May-98
B738JE81460645	5340011740741				2	3.04	1104	29-May-98
B738JE73370640	5340003613510				16	2.48	1112	29-May-98
J738MR81460069	2840013323439PT				4	30	1139	29-May-98
J738JE81520021	5331001651941				11	31	909	1-Jun-98
J738JE81520022	5340003485978				9	29	911	1-Jun-98
J738JE81520023	5340003485078				9	28	912	1-Jun-98
J738JE81520026	5310003678770				6	27	913	1-Jun-98
J738JE81520027	3120003141497				5	27	913	1-Jun-98
J738MR81470076	2840013323429PT				4	48	914	1-Jun-98
J738MR81470088	2840013323439PT				4	41	916	1-Jun-98
J738MR81470070	2840012543054PT				6	42	917	1-Jun-98
J738MR81480145	2840013131813PT				4	44	920	1-Jun-98
J738MR81460064	2840012543054PT				8	47	922	1-Jun-98
J738MR81480176	2840014282576PT				7	18	922	1-Jun-98
J738MR81470069	2840011550148PT				11	43	923	1-Jun-98
J715IS81498578	2840011028596PT				3	17	923	1-Jun-98
J738MR81460074	2840012543054PT				3	17	923	1-Jun-98

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J738MR81390075	2840011559148PT				10	17	923	1-Jun-98
J738MR81480171	2840013131813PT				9	46	925	1-Jun-98
J738JE81480127	4730003650284				5	42	929	1-Jun-98
J738MR81390082	2840011559148				7	10	930	1-Jun-98
J738JE81470085	4710011852980				5	37	940	1-Jun-98
J738JE81470084	4710011882611				10	16	1003	1-Jun-98
J738MR81490053	5360003773974				5	23	1027	1-Jun-98
J738MR81410080	2840005167788				1	10	1439	1-Jun-98
J738JE80420073	2840013410066				2	21	1525	1-Jun-98
J738JE81520101	5342005859276				3	8	1525	1-Jun-98
J738MR81190017	2840011802935				11	41	943	2-Jun-98
J738MR81190017	2840011802935				10	59	945	2-Jun-98
J738MR81190017	2840011802935				10	43	946	2-Jun-98
J738MR80260028	5340014350354				10	42	947	2-Jun-98
J738MR81490071	2840014282576				6	8	947	2-Jun-98
J738MR81190017	2840011802935				10	56	948	2-Jun-98
J738MR81490071	2840014282576				3	12	948	2-Jun-98
J713FL81100071	6150013111150				3	10	949	2-Jun-98
J738MR81190017	2840011802935				9	39	950	2-Jun-98
J738MR81190017	2840011802935				11	29	950	2-Jun-98
J738MR81190017	2840011802935				8	44	950	2-Jun-98
J738MR81190017	2840011802935				11	39	950	2-Jun-98
J738MR81190017	2840011802935				10	44	950	2-Jun-98
J738MR81480191	2840012543054				11	39	950	2-Jun-98
J738MR81190017	2840011802935				12	30	950	2-Jun-98
J738MR81190017	2840011802935				11	30	950	2-Jun-98
J738MR81480172	2840011559148				4	38	951	2-Jun-98
J738MR81470091	2840011559148				5	37	952	2-Jun-98
J738JE81520010	6685013233451				13	37	952	2-Jun-98
J738JE81480057	6150003276216				13	51	953	2-Jun-98
J738MR81190017	2840011802935				15	34	956	2-Jun-98
J738MR81490061	2840014282576				1	31	957	2-Jun-98
J738MR81480062	2840012543054				11	51	957	2-Jun-98
J738MR81480170	2840013323439				12	27	1002	2-Jun-98
J738MR81480196	2840011559148				13	27	1002	2-Jun-98
J738MR81490063	2840013323439				13	41	1003	2-Jun-98
J738MR81490047	2840014282576				12	26	1003	2-Jun-98
J738MR81480192	2840011559148				15	40	1004	2-Jun-98
J738MR81490064	2840003479686				14	23	1006	2-Jun-98
J738MR81470087	2840013131813				8	20	1009	2-Jun-98
J738MR81470089	3030003349833				10	16	1013	2-Jun-98
J738MR81490057	5360003773974				9	11	1018	2-Jun-98
J738MR81480179	5310003678805				9	11	1018	2-Jun-98
J738MR81480182	5310003678805				9	11	1018	2-Jun-98
J738JE81520010	6685013233451				7	11	1018	2-Jun-98
J738MR72940101	5120005007944				12	2.41	1107	2-Jun-98
J738MR81490072	2840011559148							2-Jun-98
J738MR81190017	2840011802935							2-Jun-98

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J738ES81328102	4920004949320							2-Jun-98
B738JE73370640	5340003613510							2-Jun-98
J738JE81100034	6150013111150				3	32	956	3-Jun-98
J738JE81520061	4710010446143				7	21	1009	3-Jun-98
J738JE81520029	2840003407343				12	9	1009	3-Jun-98
J738JE81200046	6150013111150				10	20	1009	3-Jun-98
J738MR81490046	2840012543054				2	57	1027	3-Jun-98
J738MR81490073	2840012543054				1	40	1033	3-Jun-98
J738JE81480035	5306004258432				4	5	1610	3-Jun-98
B738JE80370586	6150012446989							3-Jun-98
X738JE81493702	6850000500659							3-Jun-98
J738MR81260144	2840011802935				7	41	948	4-Jun-98
J738MR81190017	2840011802935				8	39	950	4-Jun-98
J738MR81190017	2840011802935				8	38	951	4-Jun-98
J738MR81260144	2840011802935					34	953	4-Jun-98
J738JE81520035	5320013083632				12	7	1023	4-Jun-98
J738JE81530049	2840003437627				10	7	1030	4-Jun-98
J738JE81520054	3120003441497				10	6	1030	4-Jun-98
J738JE81530029	2840003437627				14	15	1038	4-Jun-98
J738JE81480093	3040003650248				9	46	1043	4-Jun-98
J738ES80760015	6650014378423						1045	4-Jun-98
J738JE81400044	6150013111150				4	51	1049	4-Jun-98
J738MR81480182	5310003678805				4	19	1202	5-Jun-98
J738MR81480182	5310003678805				3	13	1202	5-Jun-98
J738MR81480182	5310003678805				6	18	1203	5-Jun-98
	5306003695676	FB4800	8154	0053	18		540	8-Jun-98
J738JE81380026	2840010350596	FB4800	8156	9012	6	13	902	8-Jun
J738MR81460070	30400010353366				13	5	910	8-Jun
	2840005167764	FB4899	8154	0278	11		918	8-Jun-98
	2840003479491	FB4800	8154	0020	10		924	8-Jun-98
J738MR81310022	2840011802941	FB4800	8133	9061	16	2	934	8-Jun-98
J738JE81540004	3130012314602	FB4800	8154	0195	14	10	935	8-Jun-98
J738J381520028	5330003276004	FB4800	8152	0104	12	9	935	8-Jun-98
	2840011826216	FB4800	8153	0294	21		940	8-Jun-98
	5340011826213	FB4800	8154	0098	18		940	8-Jun-98
	2840014282576	FB4800	8153	0013	18		940	8-Jun-98
	5342003945047	FB4800	8063	0070			1004	8-Jun-98
J738MR81400098	3040003349833	FB4800	8149	0282	15	15	1106	8-Jun-98
	53150035695933	FB4800	8154	0068	19	1	1129	8-Jun-98
	5306004258432	FB4800	8106	0188			1129	8-Jun-98
J738MR81400034	2840013131813	FB4800	8153	9061				8-Jun-98
J738MR81400034	2840013131813	FB4800	8141	0060				8-Jun-98
J738MR81330054	2840013131813	FB4800	8153	9062				8-Jun-98
	4710012945138							8-Jun-98
B738JE81261083	312000813131							8-Jun-98

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DOC #	STOCK #	TCN			REC TO P&D	P&D TO CUST	TIME	DATE
		Base	Julian	Seq#				
J738MR81140015	2840013323439PT	FB4800	8148	0696			9:15	11-Jun
J738JE81560055	5310006181849	FB4800	8159	0152			9:15	11-Jun
B738JE71070248	5340013287738PT	FB4800	8154	0364	30		11:00	11-Jun
B738JE81550244	534001340520PT				31		11:01	11-Jun
B738JE71070248	5340013287738PT	FB4800	8154	0364	42		11:02	11-Jun
B738JE72810171	5310003859218	FB4800	8153	0323	40		11:02	11-Jun
J872TC81350024	3040010718325PT	FB4800	8173	9005	10	24	9:31	15-Jun
J738MR81590037	2840011559148PT	FB4800	8161	0175	3	13	9:32	15-Jun
J713FL81620042	6685013233451PT				14	20	9:35	15-Jun
J738MR81590037	2840011559148PT	FB4800	8161	0175	3	12	9:43	15-Jun
J738JE81620009	6685013233451PT				18	10	9:45	15-Jun
J738MR81630044	2840011559148PT	FB4800	8181	9063	3	10	9:45	15-Jun
J738JE81590080	6150003276216PT	FB4800	8159	0143	18	7	9:46	15-Jun
J738ES81678103	4730000504203				6	20	12:45	15-Jun
J738ES81678102	2530011431368				6	17	12:48	15-Jun
X718FL80970760	5315013746493	FB4800	8097	0450			9:38	16-Jun
J738MR81630045	2840014282576				9	12	11:12	16-Jun
J738MR81600026	2840013323439	FB4800	8160	0215	9	12	11:12	16-Jun
J738MR81630076	2840014282576	FB4800	8166	0029	8	7	11:18	16-Jun
J7383S81678104	9150011977693					31	13:29	16-Jun
J738MR81590013	2840013323439	FB4800	8159	0103	6	20	9:39	17-Jun
J738MR81630074	2840013323439	FB4800	8166	0017	12	15	9:44	17-Jun
J738MR81380030	3040012677734	FB4800	8138	0081	7	15	9:44	17-Jun
J738JE81660034	6685013233451	FB4800	8166	0123	8	15	9:44	17-Jun
J738MR81630049	2840011559148	FB4800	8166	0031	5	23	9:57	17-Jun
J738MR81630046	2840013323439	FB4800	8166	0016	3	18	10:01	17-Jun
J738MR81630078	2840011559148	FB4800	8166	0032	4	18	10:01	17-Jun
J738MR81630070	2840011559148	FB4800	8166	0033	13	16	10:03	17-Jun
J738MR81630072	2840013131813	FB4800	8166	0015	12	16	10:03	17-Jun
J738MR81630047	2840013131813	FB4800	8166	0014	11	16	10:03	17-Jun
J738JE81560009	5340003733559	FB4800	8166	0171	9	13	10:06	17-Jun
J738JE81660071	6685013233451	FB4800	8166	0178	9	13	10:06	17-Jun
J738JE81540030	2915011076177	FB4800	8154	0215	6	13	10:06	17-Jun
J738JE81170061	2840010350596	FB4800	8115	0402	5	8	10:12	17-Jun
J738JE81660061	6150010359498	FB4800	8166	0138	5	8	10:12	17-Jun
J738JE81358105	2840010350596	FB4800	8135	0222	6	8	10:12	17-Jun
J738JE81550080	3040012149732	FB4800	8155	0267	2	11	11:12	17-Jun
J738JE81660003	5315003678829	FB4800	8166	0078	5	13	10:31	18-Jun
J738MR81670081	2840003479686	FB4800	8167	0270		10	10:34	18-Jun
J738MR81680005	2840010039018	FB4800	8166	0168	2	10	11:20	18-Jun
B738JE81461080	3120005557041	FB4800	8147	0015	9	42	12:00	18-Jun
B738JE81550126	5305003678768	FB4800	8159	0100	5	68	12:00	18-Jun
B738JE81620366	5330003678763				6			18-Jun
J738JE81248103	8145003946673					2.4		18-Jun

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DOC #	STOCK #	TCN			REC TO P&D	P&D TO CUST	TIME	DATE
		Base	Julian	Seq#				
J738JE81248104	8145003946673					2.4		18-Jun
B738JE81660688	5306013955114	FB4800	8167	0082	17	13	9:57	19-Jun
B738JE81660690	5310012181467	FB4800	8167	0087	19	13	9:57	19-Jun
B738JE81620161	5101010381124				17	13	9:57	19-Jun
J738MR81670079	2840011559148	FB4800	8167	0275	24	21	10:44	19-Jun
J738JE81670095	6685013233451	FB4800	8168	0191	7	25	10:45	19-Jun
J738MR81670080	2840013206432	FB4800	8167	0269	6	30	10:46	19-Jun
J738MR81490074	2840011028596	FB4800	8162	0116	7	30	10:46	19-Jun
J738MR81460067	2840011802935	FB4800	8146	0180	13	44	10:49	19-Jun
J738MR81390079	284001802935				12	30	11:00	19-Jun
J738SE81678110	3040008036716	FB4800	8167	0294	13	30	11:00	19-Jun
J738MR81630089	5306004328560	FB4800	8166	0069	4	28	11:02	19-Jun
J738JE81680121	2840003479575	FB4800	8168	0326	6	27	11:03	19-Jun
J738MR81600027	2840003479686	FB4800	8160	0213	5	27	11:03	19-Jun
J738MR81630092	5306004328560	FB4800	8166	0072	4	23	11:03	19-Jun
J738MR81630067	5306003827571	FB4800	8166	0039	3	23	11:03	19-Jun
J738JE81670059	2840012430309	FB4800	8167	0290	38	25	11:05	19-Jun
J738MR81310025	2840011802935	FB4800	8131	0109	38	24	11:06	19-Jun
J738MR81630066	5306003827571	FB4800	8162	0368	4	23	11:07	19-Jun
J738MR81630067	5306003827571	FB4800	8166	0038	4	23	11:07	19-Jun
J738MR81590012	2840003479686	FB4800	8159	0104	39	23	11:07	19-Jun
J738MR81630093	5306004328560	FB4800	8166	0077	17	23	11:07	19-Jun
J738MR81630068	5306003827571	FB4800	8166	0040	12	23	11:07	19-Jun
J738MR81630066	5306003827571	FB4800	8162	0368	9	23	11:07	19-Jun
J738M481630048	2840013206432	FB4800	8166	0012	38	24	11:08	19-Jun
J738JE81680090	6685013233451	FB4800	8168	0331	3	19	11:11	19-Jun
J738MR80260028	5340014350354	FB4800	8055	0261	1	18	11:12	19-Jun
J738JE81680084	6150003276216	FB4800	8168	0334	13	11	11:19	19-Jun
J738JE81690013	2840003479575	FB4800	8169	0188	13	10	11:20	19-Jun
J738MR81678107	2840013131813	FB4800	8153	0019		30	12:30	19-Jun
J738MR81670076	2840013131813	FB4800	8148	0703		30	12:30	19-Jun
J872TC80620164	2840013410066	FB4800	8062	0826	1	20	14:42	19-Jun
J738JE81130006	2840013410066	FB4800	8113	0174	2	25	14:42	19-Jun
J738MR81260144	2840011802935							19-Jun
J738MR81670098	2840011559148							19-Jun
J738MR81470093	2840011802941				6	20	8:45	22-Jun
J738MR81590040	2840013206432				9	34	8:56	22-Jun
	2840003479575	FB4800	8169	0013		33	8:57	22-Jun
J738MR81380129	2840011802941				26	22	9:08	22-Jun
J738MR81330050	2840003479686				26	21	9:09	22-Jun
	4710003214598	FB4800	8163	0017		20	9:10	22-Jun
	4710003266453	FB4800	8169	0029		20	9:10	22-Jun
J738JE81670091	4710012878405				21	19	9:11	22-Jun
J738MR81630077	2840013206432				5	14	9:16	22-Jun
J738JE81680082	3120014318614				1	13	9:17	22-Jun
	2840014332716	FB4800	8160	0361		10	9:20	22-Jun
J738MR81700093	2480014282576				4	28	9:22	22-Jun

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DOC #	STOCK #	TCN			REC TO P&D	P&D TO CUST	TIME	DATE
		Base	Julian	Seq#				
J738MR81630093	5306004328560				7	24	9:36	22-Jun
J738MR81630091	5306004328560				11	22	9:38	22-Jun
J738MR81630092	5306004328560				11	26	9:39	22-Jun
J738MR81630090	5306004328560				11	20	9:40	22-Jun
J738MR81678108	2840011559148				16	21	9:44	22-Jun
J738JE80610018	4820010955359				9	21	9:44	22-Jun
J738MR81700104	2840014282576				9	19	9:45	22-Jun
J738JE81680040	4710003957083				21	19	9:46	22-Jun
J738MR81690031	4710014188290				8	14	9:46	22-Jun
J738JE81690032	4710014159574				8	19	9:46	22-Jun
J738JE81680081	3120014318614				15	10	9:50	22-Jun
J738MR81630093	5306004328560				5	2	10:03	22-Jun
J738QB81610004	2835010289688							22-Jun

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DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	REASON
J738JE81260034	11	22	1005	8-May-98	
J713FL81270047	9	24	1006	8-May-98	
J738MR81270098	4	25	1010	8-May-98	
J738MR81210072	10	19	1007	8-May-98	
J738JE81270032	4	22	1010	8-May-98	
J738JE80840009	9	24	1004	8-May-98	
J738JE80770077	9	25	1003	8-May-98	
J738JE80560128	7	27	1001	8-May-98	
J738JE81260179	24	34	1026	8-May-98	
J738MR81210070	8	3	1006	8-May-98	
J738MR81210071	8	3	1009	8-May-98	
J738JE81260157	10	37	1023	8-May-98	
J738MR81210071	7	54	1006	8-May-98	
J738JE81260031	11	43	1022	8-May-98	
J738QB80790053	6	21	1014	8-May-98	
J738JE81200110	10	40	1022	8-May-98	
J738MR81250101	4	57	1006	8-May-98	
J718FL81258496	7	16	1015	8-May-98	
J738JE71188111	19	2.6	1036	8-May-98	
J738JE71188111	19	2.6	1036	8-May-98	
B738JE81190623	5	35	1155	8-May-98	
B738JE81190015		2.6		8-May-98	Excluded missing data
B738JE80300503		1.6		8-May-98	Excluded missing data
FB480081180042	57	1.54	1024	8-May-98	
FB480081180049		1.4		8-May-98	Excluded missing data
FB480081240050	56	1.54	1023	8-May-98	
FB480081110036		1.4		8-May-98	Excluded missing data
FB480081240055		1.4		8-May-98	Excluded missing data
FB48006347019		1.4		8-May-98	Excluded missing data
FB480081250102		1.4		8-May-98	Excluded missing data
J738M481260168	5	26	1411	11-May-98	
J738MR81260137	2	30	1410	11-May-98	
J738MR81180027	3	30	1410	11-May-98	
J738JE81260122	9	5	925	12-May-98	
J738MR81250107	7	29	1211	12-May-98	
J738JE81330009	12	42	748	13-May-98	
J738MR81320045	40	9	1136	13-May-98	
J738JE81270116	8	30	950	13-May-98	
J738JE81200047	6	30	955	13-May-98	
J738JE81260160	9	22	953	13-May-98	
J738MR81260180	9	23	952	13-May-98	
J738MR81310008	26	16	1004	13-May-98	
J738MR81270104	26	16	1004	13-May-98	
J738JE81270029	10	16	1104	13-May-98	
J738JE81310072	10	16	1104	13-May-98	
J738JE81310041	38	19	1116	13-May-98	
J738JE81310088	37	19	1116	13-May-98	
J738JE81310078	38	19	1116	13-May-98	
J738JE81310071	29	19	1116	13-May-98	

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DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	REASON
FB480081140027			1033	13-May-98	Excluded missing data
FB480081320032			1010	13-May-98	Excluded missing data
B738JE81260016	2	2.45	1031	13-May-98	
J738MR81190080	4	10	1609	13-May-98	
J738MR81310023	2	20	1055	13-May-98	
J738MR81310011	3	20	1055	13-May-98	
J738JE81100011	3	17	1058	13-May-98	
J738JE81310077	7	50	1110	14-May-98	
J738JE81310036	6	50	1110	14-May-98	
J738JE81310008	19	35	1125	14-May-98	
J738MR81260156	5	37	1123	14-May-98	
J738MR81260170	5	37	1123	14-May-98	
J738JE81310026	15	39	1121	14-May-98	
J738MR81310017	8	50	1110	14-May-98	
J738MR81050059	13	33	1127	14-May-98	
FB480081280028		50	1110	14-May-98	Excluded missing data
J738JE81190065	8	35	1125	14-May-98	
J738MR81330060	8	35		14-May-98	Excluded missing data
J738MR81250107	24	29	1131	14-May-98	
FB480081320037				14-May-98	Excluded missing data
B738JE81260034		58		14-May-98	Excluded missing data
FB480081310333		58		14-May-98	Excluded missing data
FB480081320007		58		14-May-98	Excluded missing data
J713FL81330178	4	21	JA	14-May-98	Excluded missing data
J713FL81510001		57	938	14-May-98	Excluded missing data
J738JE81330171	12	12	1018	15-May-98	
J713FL81340009	8	23	1007	15-May-98	
J713FL81320117	13	23	1007	15-May-98	
J738JE81340004	13	12	1018	15-May-98	
J738MR81260170	3	24	836	18-May-98	
J738MR81260187	3	24	836	18-May-98	
J738JE81358106	8	25	952	19-May-98	
J738JE81200043	7	23	954	19-May-98	
J738JE81330174	6	22	955	19-May-98	
J738JE81320035	7	10	952	20-May-98	
J738JE81320043	7	10	952	20-May-98	
J738MR81380126	2	8	941	20-May-98	
J738MR80340027	7	3	945	20-May-98	
J738MR81380131	13	22	958	20-May-98	
J738MR80510107	2	23	957	20-May-98	
J738MR80620086	8	28	1002	20-May-98	
J738JE81380015	11	33	957	20-May-98	
J738ES81400051				20-May-98	Excluded missing data
B738JE81320669	6	4.25	1034	20-May-98	
J738MR81350053	2	24	1430	20-May-98	
J738ES81400052	5	5.32	1425	20-May-98	
X738JE81403701	5	5.2	1425	20-May-98	
J738MR81380130			1425	20-May-98	Excluded missing data
J738MR81040121	5	25	1030	21-May-98	

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DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	REASON
J738JE81260142	4	10	1045	21-May-98	
J738MR81400034	4	25	1015	21-May-98	
J738MR81400034	3	26	1014	21-May-98	
J738MR81400034	14	26	1014	21-May-98	
J738MR81380128	6	16	1024	21-May-98	
J738MR81380141	5	15	1025	21-May-98	
J738MR81380137	6	15	1025	21-May-98	
J738JE81390068	3	19	1021	21-May-98	
J738MR81390084	9	26	1014	21-May-98	
J738JE81200041		10	1045	21-May-98	Excluded missing data
J738MR81390163	5	16	1039	21-May-98	
J738MR81390160	5	16	1039	21-May-98	
J738MR81390165	5	16	1039	21-May-98	
J738MR81390160	5	22	1033	21-May-98	
J738MR81390164	5	22	1033	21-May-98	
J738MR81380101	8	16	1039	21-May-98	
J738JE81380054	4	28	1027	21-May-98	
J738JE81390090	6	22	1033	21-May-98	
J738MR81390083	4	28	1027	21-May-98	
J738JE81390113	3		1039	21-May-98	Excluded missing data
J738JE81390076	4	22	1033	21-May-98	
J738MR80760135	2	28	1027	21-May-98	
J738MR80970134	5	30	1027	21-May-98	
J738MR81400034	2	21	1159	21-May-98	
J738MR81300135	2	36	1209	21-May-98	
J738MR81380142	1	35	1209	21-May-98	
J738JE81170099	6	10	920	21-May-98	
J738JE81000044	7	14	919	21-May-98	
J738MR81260134	7	13	920	21-May-98	
J738JE81358108	3	14	919	21-May-98	
J738JE81340064	5	13	920	21-May-98	
J738JE81283702				21-May-98	Excluded missing data
X738JE81413704	5	4.37	853	21-May-98	
J738ES81400150					Excluded missing data
B738JE81400173		3	945	22-May-98	Excluded missing data
J738MR72250061	45	0	1041	22-May-98	Excluded missing data
FB480081350039		0	1133	22-May-98	Excluded missing data
J738JE81390188	14	39	1012	22-May-98	
J738MR80200086	29	21	1030	22-May-98	
FB480081400017			1020	22-May-98	Excluded missing data
J738MR81400030	26	20	1029	22-May-98	
J738MR81400092		51	953	22-May-98	Excluded missing data
J738JE81380070	11	28	1012	22-May-98	
J738JE81260143	32	14	1031	22-May-98	
J738MR81406124	13	31	1012	22-May-98	
J738MR81400170	8	33	1012	22-May-98	
J738JE81390051	2	26	1019	22-May-98	
J738MR81400138	32	15	1030	22-May-98	
J738JE81390046	19	40	1004	22-May-98	

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DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	REASON
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J738MR80760135	2	28	1027	22-May-98	
J738MR8070134	5	22	1027	22-May-98	
J738JE81390076	4	18	1033	22-May-98	
J738JE81390113	3	14	1039	22-May-98	
J738MR81390083	4	28	1027	22-May-98	
J738JE81390090	6	18	1033	22-May-98	
J738JE81380101	8	14	1039	22-May-98	
J738JE81380054	4	28	1027	22-May-98	
J738MR81390164	5	18	1033	22-May-98	
J738MR81390160	5	18	1033	22-May-98	
J738MR81390160	5	18	1039	22-May-98	
J738MR81390165	5	18	1039	22-May-98	
J738MR81390163	5	18	1039	22-May-98	
J738JE81200041	4	10	1045	22-May-98	
J738MR81390084	9	26	1014	22-May-98	
J738JE81390068	3	39	1021	22-May-98	
J738MR81380141	5	15	1025	22-May-98	
J738MR81380137	6	15	1025	22-May-98	
J738MR81380128	1	22	1018	22-May-98	
J738MR81400034	14	26	1014	22-May-98	
J738MR81400034	3	26	1014	22-May-98	
J738MR81400034	4	25	1015	22-May-98	
J738JE81260142	4	10	1045	22-May-98	
J738MR81040121	5	25	1030	22-May-98	
B738JE81400173	5	2.11	950	22-May-98	
J872TC81398103	7	4.35	950	22-May-98	
X719ST81288553	3	1.05	1350	22-May-98	
J738MR81380149	4	20	750	22-May-98	
J738MR81410071	4	20	750	22-May-98	
J738MR81410070	4	20	750	22-May-98	
J738MR81390100	8	18	917	22-May-98	
J738MR81390067	8	18	917	22-May-98	
J738MR81400172	4	13	922	22-May-98	
J738JE81390091	10	7	938	26-May-98	
J738JE81400134	17	5	940	26-May-98	
J738JE81380017	8	11	929	26-May-98	
J738MR81400038	5	10	950	26-May-98	
J738JE81380119	3	9	931	26-May-98	
J718FI581400029	3	9	910	26-May-98	
J738MR81410072	3	27	1103	26-May-98	
J738MR81410074	4	25	1105	26-May-98	
J738MR81410073	5	25	1105	26-May-98	
B738JE81320900		1.5	1205	26-May-98	Excluded missing data
J738ES81328101		1.5	1205	26-May-98	Excluded missing data
J738MR81410084	2	40	1615	26-May-98	
J738MR81410085	2	40	1615	26-May-98	
J738MR81410075	4	35	1610	26-May-98	
J738MR81410082	2	40	1615	26-May-98	

P & D Logbook
Excluded Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	REASON
J738MR81410083	2	40	1615	26-May-98	
J738JE81470006	13	3	757	27-May-98	
J738MR81400122	3	10	1005	27-May-98	
J738MR81260141	6	23	1020	27-May-98	
J715FL81400194	7	23	1020	27-May-98	
J738MR81410076	2	3	1127	27-May-98	
J718FI51428578	18	37	1015	27-May-98	
J738JE81400090	14	36	1015	27-May-98	
J738MR81260166	12	31	1020	27-May-98	
J738JE81390032	10	30	1020	27-May-98	
J738JE81270036	10	26	1020	27-May-98	
J738JE81280026	10	25	1021	27-May-98	
J738MR81400126	13	36	1014	27-May-98	
J738JE80970078	15	34	1015	27-May-98	
B738JE71810253	3	2.24	1107	27-May-98	
B738JE81400021	2	2.27	1107	27-May-98	
B738JE81400560	1	2.31	1106	27-May-98	
J738MR81390169	5	19	1015	28-May-98	
J738MR81390170	5	19	1015	28-May-98	
J738MR81390172	5	19	1015	28-May-98	
J738MR81390168	5	19	1015	28-May-98	
B738JE70340418	5	19	1015	28-May-98	
J738MR81460065	15	20	1020	28-May-98	
J738MR81390165	10	22	1018	28-May-98	
J738MR81460076	15	21	1019	28-May-98	
J738JE81460012	18	19	1021	28-May-98	
J738MR81390166	10	22	1018	28-May-98	
J738MR81460066	24	9	951	28-May-98	
J738MR81390171	18	9	951	28-May-98	
J738MR81460082	15	9	951	28-May-98	
J738JE81480160	9	6	1509	28-May-98	
J738JE81480156	8	16	1504	28-May-98	
J738JE81480159	6	15	1501	28-May-98	
J738JE81480154	9	16	1504	28-May-98	
J738JE81480158	7	15	1505	28-May-98	
J738MR81470068	2	30	958	28-May-98	
J738MR81460080	3	29	958	28-May-98	
J738MR81460079	4	22	958	28-May-98	
J738MR81460072	2	31	958	28-May-98	
J738JE81490023	24	32	958	28-May-98	
J738MR81460069	4	30	1139	29-May-98	
J738MR81390069	3	32	1038	29-May-98	
J713FL81460063	16	26	1045	29-May-98	
J738MR81470078	10	5	1019	29-May-98	
J738MR81400032	3	3	1015	29-May-98	
X738JE81493700			1015	29-May-98	Excluded missing data
J738MR81390101	4	5	1015	29-May-98	
J738MR81460068	6	3	1017	29-May-98	
J738JE81470007	9	28	1040	29-May-98	

P & D Logbook
Excluded Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	REASON
J738MR81470077	10	28	1042	29-May-98	
X738JE81493701			1030	29-May-98	Excluded missing data
J738MR81460081	4	5	1015	29-May-98	
J738MR81410039	9	3	1015	29-May-98	
J738MR81470071	3	5	1015	29-May-98	
J738MR81400038	5	25	1035	29-May-98	
J738MR81470090	4	19	1042	29-May-98	
J738MR81470094	2	16	1036	29-May-98	
J715IS81498580	2	5	1035	29-May-98	
J715IS81498580	2	5	1035	29-May-98	
J738MR81040121	POST	POST (8)	1052	29-May-98	Excluded missing data
J738MR81040035	4	5	1058	29-May-98	
J738JE813300657	2	5	1057	29-May-98	
J738MR81380140	4	5	1058	29-May-98	
J738MR81410081	4	5	1057	29-May-98	
J738MR81410079	4	5	1058	29-May-98	
B738JE81460645	2	3.04	1104	29-May-98	
J738MR81190069	12	3.2	1048	29-May-98	
B738JE81260034	3	3.27	1047	29-May-98	
B738JE73370640	16	2.48	1112	29-May-98	
J738JE81470084	10	16	1003	1-Jun-98	
J738MR81480171	9	46	925	1-Jun-98	
J738MR81480145	4	44	920	1-Jun-98	
J738JE81470085	5	37	940	1-Jun-98	
J738JE81480127	5	42	929	1-Jun-98	
J738MR81460064	8	47	922	1-Jun-98	
J738MR81470069	11	43	923	1-Jun-98	
J738MR81470076	4	48	914	1-Jun-98	
J715IS81498578	3	17	923	1-Jun-98	
J738MR81480176	7	18	922	1-Jun-98	
J738MR81470070	6	42	917	1-Jun-98	
J738MR81460074	3	17	923	1-Jun-98	
J738MR81390075	10	17	923	1-Jun-98	
J738MR81470088	4	41	916	1-Jun-98	
J738JE81520021	11	31	909	1-Jun-98	
J738JE81520023	9	28	912	1-Jun-98	
J738JE81520022	9	29	911	1-Jun-98	
J738JE81520026	6	27	913	1-Jun-98	
J738JE81520027	5	27	913	1-Jun-98	
J738MR81390082	7	10	930	1-Jun-98	
J738MR81490053	5	23	1027	1-Jun-98	
J738MR81410080	1	10	1439	1-Jun-98	
J738JE80420073	2	21	1525	1-Jun-98	
J738JE81520101	3	8	1525	1-Jun-98	
J738MR81480170	12	27	1002	2-Jun-98	
J738MR81480172	4	38	951	2-Jun-98	
J738MR81490064	14	23	1006	2-Jun-98	
J738MR81490072				2-Jun-98	Excluded missing data
J738MR81490063	13	41	1003	2-Jun-98	

P & D Logbook
Excluded Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	REASON
J738MR81490057	9	11	1018	2-Jun-98	
J738MR81470091	5	37	952	2-Jun-98	
J738MR81480192	15	40	1004	2-Jun-98	
J738MR81190017	10	56	948	2-Jun-98	
J738MR81470089	10	16	1013	2-Jun-98	
J738MR81480179	9	11	1018	2-Jun-98	
J738MR81490047	12	26	1003	2-Jun-98	
J738MR81480182	9	11	1018	2-Jun-98	
J738MR81190017	10	43	946	2-Jun-98	
J738MR81190017	9	39	950	2-Jun-98	
J738MR81480196	13	27	1002	2-Jun-98	
J738MR81190017	10	59	945	2-Jun-98	
J738MR80260028	10	42	947	2-Jun-98	
J738MR81190017	11	41	943	2-Jun-98	
J738MR81190017	11	29	950	2-Jun-98	
J738MR81190017				2-Jun-98	Excluded missing data
J738MR81190017	8	44	950	2-Jun-98	
J738MR81190017	11	39	950	2-Jun-98	
J738MR81190017	10	44	950	2-Jun-98	
J738MR81490061	1	31	957	2-Jun-98	
J738MR81190017	15	34	956	2-Jun-98	
J738MR81480062	11	51	957	2-Jun-98	
J738MR81480191	11	39	950	2-Jun-98	
J738MR81470087	8	20	1009	2-Jun-98	
J738MR81190017	12	30	950	2-Jun-98	
J738MR81190017	11	30	950	2-Jun-98	
J738JE81480057	13	51	953	2-Jun-98	
J738JE81520010	7	11	1018	2-Jun-98	
J738JE81520010	13	37	952	2-Jun-98	
J738ES81328102				2-Jun-98	Excluded missing data
B738JE73370640				2-Jun-98	Excluded missing data
J738MR72940101	12	2.41	1107	2-Jun-98	
J738MR81490071	3	12	948	2-Jun-98	
J713FL81100071	3	10	949	2-Jun-98	
J738MR81490071	6	8	947	2-Jun-98	
J738JE81520061	7	21	1009	3-Jun-98	
J738JE81520029	12	9	1009	3-Jun-98	
J738JE81100034	3	32	956	3-Jun-98	
J738JE81200046	10	20	1009	3-Jun-98	
J738MR81490046	2	57	1027	3-Jun-98	
J738MR81490073	1	40	1033	3-Jun-98	
B738JE80370586				3-Jun-98	Excluded missing data
X738JE81493702				3-Jun-98	Excluded missing data
J738JE81480035	4	5	1610	3-Jun-98	
J738MR81190017	8	39	950	4-Jun-98	
J738MR81190017	8	38	951	4-Jun-98	
J738MR81260144	7	41	948	4-Jun-98	
J738MR81260144		34	953	4-Jun-98	Excluded missing data
J738JE81520035	12	7	1023	4-Jun-98	

P & D Logbook
Excluded Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	REASON
J738JE81530029	14	15	1038	4-Jun-98	
J738JE81480093	9	46	1043	4-Jun-98	
J738JE81400044	4	51	1049	4-Jun-98	
J738ES80760015			1045	4-Jun-98	Excluded missing data
J738JE81530049	10	7	1030	4-Jun-98	
J738JE81520054	10	6	1030	4-Jun-98	
J738MR81480182	4	19	1202	5-Jun-98	
J738MR81480182	6	18	1203	5-Jun-98	
J738MR81480182	3	13	1202	5-Jun-98	
J738MR81400034				8-Jun-98	Excluded missing data
J738MR81400034				8-Jun-98	Excluded missing data
J738MR81310022	16	2	934	8-Jun-98	
J738JE81540004	14	10	935	8-Jun-98	
J738MR81400098	15	15	1106	8-Jun-98	
J738MR81330054				8-Jun-98	Excluded missing data
J738J381520028	12	9	9:35	8-Jun-98	
	19	1	11:29	8-Jun-98	
			10:04	8-Jun-98	Excluded missing data
	11		9:18	8-Jun-98	Excluded missing data
	21		9:40	8-Jun-98	Excluded missing data
	18		5:40	8-Jun-98	Excluded missing data
	18		9:40	8-Jun-98	Excluded missing data
	18		9:40	8-Jun-98	Excluded missing data
				8-Jun-98	Excluded missing data
	10		9:24	8-Jun-98	Excluded missing data
			11:29	8-Jun-98	Excluded missing data
B738JE81261083				8-Jun-98	Excluded missing data
J738MR81460070	13	5	9:10	8-Jun	
J738JE81380026	6	13	9:02	8-Jun	
J738MR81140015			9:15	11-Jun	Excluded missing data
B738JE81550244	31		11:01	11-Jun	Excluded missing data
B738JE71070248	42		11:02	11-Jun	Excluded missing data
J738JE81560055			9:15	11-Jun	Excluded missing data
B738JE71070248	30		11:00	11-Jun	Excluded missing data
B738JE72810171	40		11:02	11-Jun	Excluded missing data
J738MR81590037	3	12	9:43	15-Jun	
J872TC81350024	10	24	9:31	15-Jun	
J738MR81590037	3	13	9:32	15-Jun	
J738JE81620009	18	10	9:45	15-Jun	
J738MR81630044	3	10	9:45	15-Jun	
J738JE81590080	18	7	9:46	15-Jun	
J713FL81620042	14	20	9:35	15-Jun	
J738ES81678103	6	20	12:45	15-Jun	
J738ES81678102	6	17	12:48	15-Jun	
J738MR81630076	8	7	11:18	16-Jun	
J738MR81630045	9	12	11:12	16-Jun	
J738MR81600026	9	12	11:12	16-Jun	
J7383S81678104		31	13:29	16-Jun	Excluded missing data - ISU from stock
X718FL80970760			9:38	16-Jun	Excluded missing data

P & D Logbook
Excluded Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	REASON
J738MR81630049	5	23	9:57	17-Jun	
J738JE81560009	9	13	10:06	17-Jun	
J738JE81170061	5	8	10:12	17-Jun	
J738JE81660071	9	13	10:06	17-Jun	
J738JE81660061	5	8	10:12	17-Jun	
J738JE81358105	6	8	10:12	17-Jun	
J738JE81540030	6	13	10:06	17-Jun	
J738MR81630070	13	16	10:03	17-Jun	
J738MR81630046	3	18	10:01	17-Jun	
J738MR81630078	4	18	10:01	17-Jun	
J738MR81630072	12	16	10:03	17-Jun	
J738MR81630047	11	16	10:03	17-Jun	
J738JE81550080	2	11	11:12	17-Jun	
J738MR81590013	6	20	9:39	17-Jun	
J738MR81630074	12	15	9:44	17-Jun	
J738MR81380030	7	15	9:44	17-Jun	
J738JE81660034	8	15	9:44	17-Jun	
J738JE81660003	5	13	10:31	18-Jun	
J738MR81670081		10	10:34	18-Jun	Excluded missing data
J738MR81680005	2	10	11:20	18-Jun	
B738JE81461080	9	42	12:00	18-Jun	
B738JE81620366	6			18-Jun	Excluded missing data
B738JE81550126	5	68	12:00	18-Jun	
J738JE81248103		2.4		18-Jun	Excluded missing data
J738JE81248104		2.4		18-Jun	Excluded missing data
B738JE81660688	17	13	9:57	19-Jun	
B738JE81660690	19	13	9:57	19-Jun	
B738JE81620161	17	13	9:57	19-Jun	
J738MR81670080	6	30	10:46	19-Jun	
J738MR81490074	7	30	10:46	19-Jun	
J738MR81460067	13	44	10:49	19-Jun	
J738MR81670079	24	21	10:44	19-Jun	
J738JE81670095	7	25	10:45	19-Jun	
J738M481630048	38	24	11:08	19-Jun	
J738MR81390079	12	30	11:00	19-Jun	
J738JE81680090	3	19	11:11	19-Jun	
J738JE81690013	13	10	11:20	19-Jun	
J738JE81680084	13	11	11:19	19-Jun	
J738MR81310025	38	24	11:06	19-Jun	
J738MR81260144				19-Jun	Excluded missing data
J738MR80260028	1	18	11:12	19-Jun	
J738JE81680121	6	27	11:03	19-Jun	
J738MR81600027	5	27	11:03	19-Jun	
J738SE81678110	13	30	11:00	19-Jun	
J738MR81670098				19-Jun	Excluded missing data
J738MR81630066	4	23	11:07	19-Jun	
J738MR81630067	4	23	11:07	19-Jun	
J738JE81670059	38	25	11:05	19-Jun	
J738MR81590012	39	23	11:07	19-Jun	

P & D Logbook
Excluded Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	REASON
J738MR81630093	17	23	11:07	19-Jun	
J738MR81630092	4	23	11:03	19-Jun	
J738MR81630068	12	23	11:07	19-Jun	
J738MR81630067	3	23	11:03	19-Jun	
J738MR81630066	9	23	11:07	19-Jun	
J738MR81630089	4	28	11:02	19-Jun	
J738MR81678107		30	12:30	19-Jun	Excluded missing data
J738MR81670076		30	12:30	19-Jun	Excluded missing data
J872TC80620164	1	20	14:42	19-Jun	
J738JE81130006	2	25	14:42	19-Jun	
J738MR81630077	5	14	9:16	22-Jun	
J738MR81380129	26	22	9:08	22-Jun	
		20	9:10	22-Jun	Excluded missing data
		10	9:20	22-Jun	Excluded missing data
J738JE81680082	1	13	9:17	22-Jun	
J738MR81590040	9	34	8:56	22-Jun	
		20	9:10	22-Jun	Excluded missing data
J738JE81670091	21	19	9:11	22-Jun	
J738MR81330050	26	21	9:09	22-Jun	
		33	8:57	22-Jun	Excluded missing data
J738MR81700093	4	28	9:22	22-Jun	
J738JE81680081	15	10	9:50	22-Jun	
J738QB81610004				22-Jun	Excluded missing data
J738JE81680040	21	19	9:46	22-Jun	
J738MR81630093	5	2	10:03	22-Jun	
J738MR81678108	16	21	9:44	22-Jun	
J738MR81630091	11	22	9:38	22-Jun	
J738MR81630092	11	26	9:39	22-Jun	
J738MR81630093	7	24	9:36	22-Jun	
J738MR81690031	8	14	9:46	22-Jun	
J738MR81630090	11	20	9:40	22-Jun	
J738JE80610018	9	21	9:44	22-Jun	
J738JE81690032	8	19	9:46	22-Jun	
J738MR81700104	9	19	9:45	22-Jun	
J738MR81470093	6	20	8:45	22-Jun	

Scrubbed P & D Logbook Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE
J738JE81260034	11	22	1005	8-May-98
J713FL81270047	9	24	1006	8-May-98
J738MR81270098	4	25	1010	8-May-98
J738MR81210072	10	19	1007	8-May-98
J738JE81270032	4	22	1010	8-May-98
J738JE80840009	9	24	1004	8-May-98
J738JE80770077	9	25	1003	8-May-98
J738JE80560128	7	27	1001	8-May-98
J738JE81260179	24	34	1026	8-May-98
J738MR81210070	8	3	1006	8-May-98
J738MR81210071	8	3	1009	8-May-98
J738JE81260157	10	37	1023	8-May-98
J738MR81210071	7	54	1006	8-May-98
J738JE81260031	11	43	1022	8-May-98
J738QB80790053	6	21	1014	8-May-98
J738JE81200110	10	40	1022	8-May-98
J738MR81250101	4	57	1006	8-May-98
J718FL81258496	7	16	1015	8-May-98
J738JE71188111	19	2.6	1036	8-May-98
J738JE71188111	19	2.6	1036	8-May-98
B738JE81190623	5	35	1155	8-May-98
FB480081180042	57	1.54	1024	8-May-98
FB480081240050	56	1.54	1023	8-May-98
J738M481260168	5	26	1411	11-May-98
J738MR81260137	2	30	1410	11-May-98
J738MR81180027	3	30	1410	11-May-98
J738JE81260122	9	5	925	12-May-98
J738MR81250107	7	29	1211	12-May-98
J738JE81330009	12	42	748	13-May-98
J738MR81320045	40	9	1136	13-May-98
J738JE81270116	8	30	950	13-May-98
J738JE81200047	6	30	955	13-May-98
J738JE81260160	9	22	953	13-May-98
J738MR81260180	9	23	952	13-May-98
J738MR81310008	26	16	1004	13-May-98
J738MR81270104	26	16	1004	13-May-98
J738JE81270029	10	16	1104	13-May-98
J738JE81310072	10	16	1104	13-May-98
J738JE81310041	38	19	1116	13-May-98
J738JE81310088	37	19	1116	13-May-98
J738JE81310078	38	19	1116	13-May-98
J738JE81310071	29	19	1116	13-May-98
B738JE81260016	2	2.45	1031	13-May-98
J738MR81190080	4	10	1609	13-May-98
J738MR81310023	2	20	1055	13-May-98
J738MR81310011	3	20	1055	13-May-98
J738JE81100011	3	17	1058	13-May-98
J738JE81310077	7	50	1110	14-May-98
J738JE81310036	6	50	1110	14-May-98

REC TO P&D	
Mean	9.166253
Standard Error	0.399883
Median	7
Mode	5
Standard Deviation	8.027605
Sample Variance	64.44244
Kurtosis	8.648025
Skewness	2.547424
Range	56
Minimum	1
Maximum	57
Sum	3694
Count	403
Confidence Level(95.0%)	0.786124

P&D TO CUST	
Mean	21.50647
Standard Error	0.618053
Median	20
Mode	19
Standard Deviation	12.39193
Sample Variance	153.56
Kurtosis	0.246067
Skewness	0.622506
Range	67
Minimum	1
Maximum	68
Sum	8645.6
Count	402
Confidence Level(95.0%)	1.215029

Scrubbed P & D Logbook Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE			
J738JE81310008	19	35	1125	14-May-98			
J738MR81260156	5	37	1123	14-May-98			
J738MR81260170	5	37	1123	14-May-98			
J738JE81310026	15	39	1121	14-May-98			
J738MR81310017	8	50	1110	14-May-98			
J738MR81050059	13	33	1127	14-May-98			
J738JE81190065	8	35	1125	14-May-98			
J738MR81250107	24	29	1131	14-May-98			
J738JE81330171	12	12	1018	15-May-98			
J713FL81340009	8	23	1007	15-May-98			
J713FL81320117	13	23	1007	15-May-98			
J738JE81340004	13	12	1018	15-May-98			
J738MR81260170	3	24	836	18-May-98			
J738MR81260187	3	24	836	18-May-98			
J738JE81358106	8	25	952	19-May-98			
J738JE81200043	7	23	954	19-May-98			
J738JE81330174	6	22	955	19-May-98			
J738JE81320035	7	10	952	20-May-98			
J738JE81320043	7	10	952	20-May-98			
J738MR81380126	2	8	941	20-May-98			
J738MR80340027	7	3	945	20-May-98			
J738MR81380131	13	22	958	20-May-98			
J738MR80510107	2	23	957	20-May-98			
J738MR80620086	8	28	1002	20-May-98			
J738JE81380015	11	33	957	20-May-98			
B738JE81320669	6	4.25	1034	20-May-98			
J738MR81350053	2	24	1430	20-May-98			
J738ES81400052	5	5.32	1425	20-May-98			
X738JE81403701	5	5.2	1425	20-May-98			
J738MR81040121	5	25	1030	21-May-98			
J738JE81260142	4	10	1045	21-May-98			
J738MR81400034	4	25	1015	21-May-98			
J738MR81400034	3	26	1014	21-May-98			
J738MR81400034	14	26	1014	21-May-98			
J738MR81380128	6	16	1024	21-May-98			
J738MR81380141	5	15	1025	21-May-98			
J738MR81380137	6	15	1025	21-May-98			
J738JE81390068	3	19	1021	21-May-98			
J738MR81390084	9	26	1014	21-May-98			
J738MR81390163	5	16	1039	21-May-98			
J738MR81390160	5	16	1039	21-May-98			
J738MR81390165	5	16	1039	21-May-98			
J738MR81390160	5	22	1033	21-May-98			
J738MR81390164	5	22	1033	21-May-98			
J738MR81380101	8	16	1039	21-May-98			
J738JE81380054	4	28	1027	21-May-98			
J738JE81390090	6	22	1033	21-May-98			
J738MR81390083	4	28	1027	21-May-98			
J738JE81390076	4	22	1033	21-May-98			

Scrubbed P & D Logbook Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE			
J738MR80760135	2	28	1027	21-May-98			
J738MR80970134	5	30	1027	21-May-98			
J738MR81400034	2	21	1159	21-May-98			
J738MR81300135	2	36	1209	21-May-98			
J738MR81380142	1	35	1209	21-May-98			
J738JE81170099	6	10	920	21-May-98			
J738JE81000044	7	14	919	21-May-98			
J738MR81260134	7	13	920	21-May-98			
J738JE81358108	3	14	919	21-May-98			
J738JE81340064	5	13	920	21-May-98			
X738JE81413704	5	4.37	853	21-May-98			
J738JE81390188	14	39	1012	22-May-98			
J738MR80200086	29	21	1030	22-May-98			
J738MR81400030	26	20	1029	22-May-98			
J738JE81380070	11	28	1012	22-May-98			
J738JE81260143	32	14	1031	22-May-98			
J738MR81406124	13	31	1012	22-May-98			
J738MR81400170	8	33	1012	22-May-98			
J738JE81390051	2	26	1019	22-May-98			
J738MR81400138	32	15	1030	22-May-98			
J738JE81390046	19	40	1004	22-May-98			
J738JE81310076	28	15	1030	22-May-98			
J738MR80760135	2	28	1027	22-May-98			
J738MR8070134	5	22	1027	22-May-98			
J738JE81390076	4	18	1033	22-May-98			
J738JE81390113	3	14	1039	22-May-98			
J738MR81390083	4	28	1027	22-May-98			
J738JE81390090	6	18	1033	22-May-98			
J738JE81380101	8	14	1039	22-May-98			
J738JE81380054	4	28	1027	22-May-98			
J738MR81390164	5	18	1033	22-May-98			
J738MR81390160	5	18	1033	22-May-98			
J738MR81390160	5	18	1039	22-May-98			
J738MR81390165	5	18	1039	22-May-98			
J738MR81390163	5	18	1039	22-May-98			
J738JE81200041	4	10	1045	22-May-98			
J738MR81390084	9	26	1014	22-May-98			
J738JE81390068	3	39	1021	22-May-98			
J738MR81380141	5	15	1025	22-May-98			
J738MR81380137	6	15	1025	22-May-98			
J738MR81380128	1	22	1018	22-May-98			
J738MR81400034	14	26	1014	22-May-98			
J738MR81400034	3	26	1014	22-May-98			
J738MR81400034	4	25	1015	22-May-98			
J738JE81260142	4	10	1045	22-May-98			
J738MR81040121	5	25	1030	22-May-98			
B738JE81400173	5	2.11	950	22-May-98			
J872TC81398103	7	4.35	950	22-May-98			
X719ST81288553	3	1.05	1350	22-May-98			

Scrubbed P & D Logbook Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE			
J738MR81380149	4	20	750	22-May-98			
J738MR81410071	4	20	750	22-May-98			
J738MR81410070	4	20	750	22-May-98			
J738MR81390100	8	18	917	22-May-98			
J738MR81390067	8	18	917	22-May-98			
J738MR81400172	4	13	922	22-May-98			
J738JE81390091	10	7	938	26-May-98			
J738JE81400134	17	5	940	26-May-98			
J738JE81380017	8	11	929	26-May-98			
J738MR81400038	5	10	950	26-May-98			
J738JE81380119	3	9	931	26-May-98			
J718FI581400029	3	9	910	26-May-98			
J738MR81410072	3	27	1103	26-May-98			
J738MR81410074	4	25	1105	26-May-98			
J738MR81410073	5	25	1105	26-May-98			
J738MR81410084	2	40	1615	26-May-98			
J738MR81410085	2	40	1615	26-May-98			
J738MR81410075	4	35	1610	26-May-98			
J738MR81410082	2	40	1615	26-May-98			
J738MR81410083	2	40	1615	26-May-98			
J738JE81470006	13	3	757	27-May-98			
J738MR81400122	3	10	1005	27-May-98			
J738MR81260141	6	23	1020	27-May-98			
J715FL81400194	7	23	1020	27-May-98			
J738MR81410076	2	3	1127	27-May-98			
J718FI51428578	18	37	1015	27-May-98			
J738JE81400090	14	36	1015	27-May-98			
J738MR81260166	12	31	1020	27-May-98			
J738JE81390032	10	30	1020	27-May-98			
J738JE81270036	10	26	1020	27-May-98			
J738JE81280026	10	25	1021	27-May-98			
J738MR81400126	13	36	1014	27-May-98			
J738JE80970078	15	34	1015	27-May-98			
B738JE71810253	3	2.24	1107	27-May-98			
B738JE81400021	2	2.27	1107	27-May-98			
B738JE81400560	1	2.31	1106	27-May-98			
J738MR81390169	5	19	1015	28-May-98			
J738MR81390170	5	19	1015	28-May-98			
J738MR81390172	5	19	1015	28-May-98			
J738MR81390168	5	19	1015	28-May-98			
B738JE70340418	5	19	1015	28-May-98			
J738MR81460065	15	20	1020	28-May-98			
J738MR81390165	10	22	1018	28-May-98			
J738MR81460076	15	21	1019	28-May-98			
J738JE81460012	18	19	1021	28-May-98			
J738MR81390166	10	22	1018	28-May-98			
J738MR81460066	24	9	951	28-May-98			
J738MR81390171	18	9	951	28-May-98			
J738MR81460082	15	9	951	28-May-98			

Scrubbed P & D Logbook Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE			
J738JE81480160	9	6	1509	28-May-98			
J738JE81480156	8	16	1504	28-May-98			
J738JE81480159	6	15	1501	28-May-98			
J738JE81480154	9	16	1504	28-May-98			
J738JE81480158	7	15	1505	28-May-98			
J738MR81470068	2	30	958	28-May-98			
J738MR81460080	3	29	958	28-May-98			
J738MR81460079	4	22	958	28-May-98			
J738MR81460072	2	31	958	28-May-98			
J738JE81490023	24	32	958	28-May-98			
J738MR81460069	4	30	1139	29-May-98			
J738MR81390069	3	32	1038	29-May-98			
J713FL81460063	16	26	1045	29-May-98			
J738MR81470078	10	5	1019	29-May-98			
J738MR81400032	3	3	1015	29-May-98			
J738MR81390101	4	5	1015	29-May-98			
J738MR81460068	6	3	1017	29-May-98			
J738JE81470007	9	28	1040	29-May-98			
J738MR81470077	10	28	1042	29-May-98			
J738MR81460081	4	5	1015	29-May-98			
J738MR81410039	9	3	1015	29-May-98			
J738MR81470071	3	5	1015	29-May-98			
J738MR81400038	5	25	1035	29-May-98			
J738MR81470090	4	19	1042	29-May-98			
J738MR81470094	2	16	1036	29-May-98			
J715IS81498580	2	5	1035	29-May-98			
J715IS81498580	2	5	1035	29-May-98			
J738MR81040035	4	5	1058	29-May-98			
J738JE813300657	2	5	1057	29-May-98			
J738MR81380140	4	5	1058	29-May-98			
J738MR81410081	4	5	1057	29-May-98			
J738MR81410079	4	5	1058	29-May-98			
B738JE81460645	2	3.04	1104	29-May-98			
J738MR81190069	12	3.2	1048	29-May-98			
B738JE81260034	3	3.27	1047	29-May-98			
B738JE73370640	16	2.48	1112	29-May-98			
J738JE81470084	10	16	1003	1-Jun-98			
J738MR81480171	9	46	925	1-Jun-98			
J738MR81480145	4	44	920	1-Jun-98			
J738JE81470085	5	37	940	1-Jun-98			
J738JE81480127	5	42	929	1-Jun-98			
J738MR81460064	8	47	922	1-Jun-98			
J738MR81470069	11	43	923	1-Jun-98			
J738MR81470076	4	48	914	1-Jun-98			
J715IS81498578	3	17	923	1-Jun-98			
J738MR81480176	7	18	922	1-Jun-98			
J738MR81470070	6	42	917	1-Jun-98			
J738MR81460074	3	17	923	1-Jun-98			
J738MR81390075	10	17	923	1-Jun-98			

Scrubbed P & D Logbook Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE			
J738MR81470088	4	41	916	1-Jun-98			
J738JE81520021	11	31	909	1-Jun-98			
J738JE81520023	9	28	912	1-Jun-98			
J738JE81520022	9	29	911	1-Jun-98			
J738JE81520026	6	27	913	1-Jun-98			
J738JE81520027	5	27	913	1-Jun-98			
J738MR81390082	7	10	930	1-Jun-98			
J738MR81490053	5	23	1027	1-Jun-98			
J738MR81410080	1	10	1439	1-Jun-98			
J738JE80420073	2	21	1525	1-Jun-98			
J738JE81520101	3	8	1525	1-Jun-98			
J738MR81480170	12	27	1002	2-Jun-98			
J738MR81480172	4	38	951	2-Jun-98			
J738MR81490064	14	23	1006	2-Jun-98			
J738MR81490063	13	41	1003	2-Jun-98			
J738MR81490057	9	11	1018	2-Jun-98			
J738MR81470091	5	37	952	2-Jun-98			
J738MR81480192	15	40	1004	2-Jun-98			
J738MR81190017	10	56	948	2-Jun-98			
J738MR81470089	10	16	1013	2-Jun-98			
J738MR81480179	9	11	1018	2-Jun-98			
J738MR81490047	12	26	1003	2-Jun-98			
J738MR81480182	9	11	1018	2-Jun-98			
J738MR81190017	10	43	946	2-Jun-98			
J738MR81190017	9	39	950	2-Jun-98			
J738MR81480196	13	27	1002	2-Jun-98			
J738MR81190017	10	59	945	2-Jun-98			
J738MR80260028	10	42	947	2-Jun-98			
J738MR81190017	11	41	943	2-Jun-98			
J738MR81190017	11	29	950	2-Jun-98			
J738MR81190017	8	44	950	2-Jun-98			
J738MR81190017	11	39	950	2-Jun-98			
J738MR81190017	10	44	950	2-Jun-98			
J738MR81490061	1	31	957	2-Jun-98			
J738MR81190017	15	34	956	2-Jun-98			
J738MR81480062	11	51	957	2-Jun-98			
J738MR81480191	11	39	950	2-Jun-98			
J738MR81470087	8	20	1009	2-Jun-98			
J738MR81190017	12	30	950	2-Jun-98			
J738MR81190017	11	30	950	2-Jun-98			
J738JE81480057	13	51	953	2-Jun-98			
J738JE81520010	7	11	1018	2-Jun-98			
J738JE81520010	13	37	952	2-Jun-98			
J738MR72940101	12	2.41	1107	2-Jun-98			
J738MR81490071	3	12	948	2-Jun-98			
J713FL81100071	3	10	949	2-Jun-98			
J738MR81490071	6	8	947	2-Jun-98			
J738JE81520061	7	21	1009	3-Jun-98			
J738JE81520029	12	9	1009	3-Jun-98			

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DOC #	REC TO P&D	P&D TO CUST	TIME	DATE			
J738JE81100034	3	32	956	3-Jun-98			
J738JE81200046	10	20	1009	3-Jun-98			
J738MR81490046	2	57	1027	3-Jun-98			
J738MR81490073	1	40	1033	3-Jun-98			
J738JE81480035	4	5	1610	3-Jun-98			
J738MR81190017	8	39	950	4-Jun-98			
J738MR81190017	8	38	951	4-Jun-98			
J738MR81260144	7	41	948	4-Jun-98			
J738JE81520035	12	7	1023	4-Jun-98			
J738JE81530029	14	15	1038	4-Jun-98			
J738JE81480093	9	46	1043	4-Jun-98			
J738JE81400044	4	51	1049	4-Jun-98			
J738JE81530049	10	7	1030	4-Jun-98			
J738JE81520054	10	6	1030	4-Jun-98			
J738MR81480182	4	19	1202	5-Jun-98			
J738MR81480182	6	18	1203	5-Jun-98			
J738MR81480182	3	13	1202	5-Jun-98			
J738MR81310022	16	2	934	8-Jun-98			
J738JE81540004	14	10	935	8-Jun-98			
J738MR81400098	15	15	1106	8-Jun-98			
J738J381520028	12	9	9:35	8-Jun-98			
	19	1	11:29	8-Jun-98			
J738MR81460070	13	5	9:10	8-Jun-98			
J738JE81380026	6	13	9:02	8-Jun-98			
B738JE81550244	31		11:01	11-Jun-98			
B738JE71070248	42		11:02	11-Jun-98			
J738MR81590037	3	12	9:43	15-Jun-98			
J872TC81350024	10	24	9:31	15-Jun-98			
J738MR81590037	3	13	9:32	15-Jun-98			
J738JE81620009	18	10	9:45	15-Jun-98			
J738MR81630044	3	10	9:45	15-Jun-98			
J738JE81590080	18	7	9:46	15-Jun-98			
J713FL81620042	14	20	9:35	15-Jun-98			
J738ES81678103	6	20	12:45	15-Jun-98			
J738ES81678102	6	17	12:48	15-Jun-98			
J738MR81630076	8	7	11:18	16-Jun-98			
J738MR81630045	9	12	11:12	16-Jun-98			
J738MR81600026	9	12	11:12	16-Jun-98			
J738MR81630049	5	23	9:57	17-Jun-98			
J738JE81560009	9	13	10:06	17-Jun-98			
J738JE81170061	5	8	10:12	17-Jun-98			
J738JE81660071	9	13	10:06	17-Jun-98			
J738JE81660061	5	8	10:12	17-Jun-98			
J738JE81358105	6	8	10:12	17-Jun-98			
J738JE81540030	6	13	10:06	17-Jun-98			
J738MR81630070	13	16	10:03	17-Jun-98			
J738MR81630046	3	18	10:01	17-Jun-98			
J738MR81630078	4	18	10:01	17-Jun-98			
J738MR81630072	12	16	10:03	17-Jun-98			

Scrubbed P & D Logbook Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE			
J738MR81630047	11	16	10:03	17-Jun-98			
J738JE81550080	2	11	11:12	17-Jun-98			
J738MR81590013	6	20	9:39	17-Jun-98			
J738MR81630074	12	15	9:44	17-Jun-98			
J738MR81380030	7	15	9:44	17-Jun-98			
J738JE81660034	8	15	9:44	17-Jun-98			
J738JE81660003	5	13	10:31	18-Jun-98			
J738MR81670081		10	10:34	18-Jun-98			
J738MR81680005	2	10	11:20	18-Jun-98			
B738JE81461080	9	42	12:00	18-Jun-98			
B738JE81550126	5	68	12:00	18-Jun-98			
B738JE81660688	17	13	9:57	19-Jun-98			
B738JE81660690	19	13	9:57	19-Jun-98			
B738JE81620161	17	13	9:57	19-Jun-98			
J738MR81670080	6	30	10:46	19-Jun-98			
J738MR81490074	7	30	10:46	19-Jun-98			
J738MR81460067	13	44	10:49	19-Jun-98			
J738MR81670079	24	21	10:44	19-Jun-98			
J738JE81670095	7	25	10:45	19-Jun-98			
J738M481630048	38	24	11:08	19-Jun-98			
J738MR81390079	12	30	11:00	19-Jun-98			
J738JE81680090	3	19	11:11	19-Jun-98			
J738JE81690013	13	10	11:20	19-Jun-98			
J738JE81680084	13	11	11:19	19-Jun-98			
J738MR81310025	38	24	11:06	19-Jun-98			
J738MR80260028	1	18	11:12	19-Jun-98			
J738JE81680121	6	27	11:03	19-Jun-98			
J738MR81600027	5	27	11:03	19-Jun-98			
J738SE81678110	13	30	11:00	19-Jun-98			
J738MR81630066	4	23	11:07	19-Jun-98			
J738MR81630067	4	23	11:07	19-Jun-98			
J738JE81670059	38	25	11:05	19-Jun-98			
J738MR81590012	39	23	11:07	19-Jun-98			
J738MR81630093	17	23	11:07	19-Jun-98			
J738MR81630092	4	23	11:03	19-Jun-98			
J738MR81630068	12	23	11:07	19-Jun-98			
J738MR81630067	3	23	11:03	19-Jun-98			
J738MR81630066	9	23	11:07	19-Jun-98			
J738MR81630089	4	28	11:02	19-Jun-98			
J872TC80620164	1	20	14:42	19-Jun-98			
J738JE81130006	2	25	14:42	19-Jun-98			
J738MR81630077	5	14	9:16	22-Jun-98			
J738MR81380129	26	22	9:08	22-Jun-98			
J738JE81680082	1	13	9:17	22-Jun-98			
J738MR81590040	9	34	8:56	22-Jun-98			
J738JE81670091	21	19	9:11	22-Jun-98			
J738MR81330050	26	21	9:09	22-Jun-98			
J738MR81700093	4	28	9:22	22-Jun-98			
J738JE81680081	15	10	9:50	22-Jun-98			

Scrubbed P & D Logbook Data

DOC #	REC TO P&D	P&D TO CUST	TIME	DATE			
J738JE81680040	21	19	9:46	22-Jun-98			
J738MR81630093	5	2	10:03	22-Jun-98			
J738MR81678108	16	21	9:44	22-Jun-98			
J738MR81630091	11	22	9:38	22-Jun-98			
J738MR81630092	11	26	9:39	22-Jun-98			
J738MR81630093	7	24	9:36	22-Jun-98			
J738MR81690031	8	14	9:46	22-Jun-98			
J738MR81630090	11	20	9:40	22-Jun-98			
J738JE80610018	9	21	9:44	22-Jun-98			
J738JE81690032	8	19	9:46	22-Jun-98			
J738MR81700104	9	19	9:45	22-Jun-98			
J738MR81470093	6	20	8:45	22-Jun-98			

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
1	J738JE80560128	7	27	1001	8-May-98	1001	61		
2	J738JE80770077	9	25	1003	8-May-98				
3	J738JE80840009	9	24	1004	8-May-98				
4	J738JE81260034	11	22	1005	8-May-98				
5	J713FL81270047	9	24	1006	8-May-98				
6	J738MR81210070	8	3	1006	8-May-98				
7	J738MR81210071	7	54	1006	8-May-98				
8	J738MR81250101	4	57	1006	8-May-98				
9	J738MR81210072	10	19	1007	8-May-98				
10	J738MR81210071	8	3	1009	8-May-98				
11	J738MR81270098	4	25	1010	8-May-98				
12	J738JE81270032	4	22	1010	8-May-98				
13	J738QB80790053	6	21	1014	8-May-98				
14	J718FL81258496	7	16	1015	8-May-98				
15	J738JE81260031	11	43	1022	8-May-98				
16	J738JE81200110	10	40	1022	8-May-98				
17	J738JE81260157	10	37	1023	8-May-98				
18	FB480081240050	56	1.54	1023	8-May-98				
19	FB480081180042	57	1.54	1024	8-May-98				
20	J738JE81260179	24	34	1026	8-May-98				
21	J738JE71188111	19	2.6	1036	8-May-98				
22	J738JE71188111	19	2.6	1036	8-May-98				
23	B738JE81190623	5	35	1155	8-May-98			1155	175
	TOTAL TIMES	**314**	**539.28**		**COUNT***	**23**			
	DAILY AVERAGE	**13.65**	**23.45**						

RECAPITULATION FOR 8 MAY
23 DELIVERIES* 30 TOTAL DELIVERIES (INCL EXCLUDED DATA)
13 MINUTES 39 SECONDS AVG FROM SBSS TO P&D
23 MINUTES 27 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 61 MINUTES
LATEST DELIVERY 175 MINUTES

*** Delivery count does not include excluded data points**

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
24	J738MR81260137	2	30	1410	11-May-98	1410	310		
25	J738MR81180027	3	30	1410	11-May-98				
26	J738M481260168	5	26	1411	11-May-98			1411	311
	TOTAL TIMES	**10**	**86**		**COUNT**	**3**			
	DAILY AVERAGE	**3.33**	**28.67**						

RECAPITULATION FOR 11 MAY

3 DELIVERIES* 3 TOTAL DELIVERIES (INCL EXCLUDED DATA)
3 MINUTES 23 SECONDS AVG FROM SBSS TO P&D
28 MINUTES 40 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 310 MINUTES
LATEST DELIVERY 311 MINUTES

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
27	J738JE81260122	9	5	925	12-May-98	925	25		
28	J738MR81250107	7	29	1211	12-May-98			1211	191
	TOTAL TIMES	**16**	**34**		**COUNT**	**2**			
	DAILY AVERAGE	**8**	**17**						

RECAPITULATION FOR 12 MAY

2 DELIVERIES* 2 TOTAL DELIVERIES (INCL EXCLUDED DATA)
8 MINUTES AVG FROM SBSS TO P&D
17 MINUTES AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 25 MINUTES
LATEST DELIVERY 191 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
29	J738JE81330009	12	42	748	13-May-98	‡ Excluded for earliest/latest computation because it could not have arrived on FedEx truck THAT day			
30	J738JE81270116	8	30	950	13-May-98	950	50		
31	J738MR81260180	9	23	952	13-May-98				
32	J738JE81260160	9	22	953	13-May-98				
33	J738JE81200047	6	30	955	13-May-98				
34	J738MR81310008	26	16	1004	13-May-98				
35	J738MR81270104	26	16	1004	13-May-98				
36	B738JE81260016	2	2.45	1031	13-May-98				
37	J738MR81310023	2	20	1055	13-May-98				
38	J738MR81310011	3	20	1055	13-May-98				
39	J738JE81100011	3	17	1058	13-May-98				
40	J738JE81270029	10	16	1104	13-May-98				
41	J738JE81310072	10	16	1104	13-May-98				
42	J738JE81310041	38	19	1116	13-May-98				
43	J738JE81310088	37	19	1116	13-May-98				
44	J738JE81310078	38	19	1116	13-May-98				
45	J738JE81310071	29	19	1116	13-May-98				
46	J738MR81320045	40	9	1136	13-May-98				
47	J738MR81190080	4	10	1609	13-May-98			1609	429
	TOTAL TIMES	**312**	**365.45**		**COUNT**	**19**			
	DAILY AVERAGE	**16.421053**	**19.234211**						

RECAPITULATION FOR 13 MAY

19 DELIVERIES* 20 TOTAL DELIVERIES (INCL EXCLUDED DATA)
16 MINUTES 25 SECONDS AVG FROM SBSS TO P&D
19 MINUTES 14 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 50 MINUTES
LATEST DELIVERY 429 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
48	J738JE81310077	7	50	1110	14-May-98	1110	130		
49	J738JE81310036	6	50	1110	14-May-98				
50	J738MR81310017	8	50	1110	14-May-98				
51	J738JE81310026	15	39	1121	14-May-98				
52	J738MR81260156	5	37	1123	14-May-98				
53	J738MR81260170	5	37	1123	14-May-98				
54	J738JE81310008	19	35	1125	14-May-98				
55	J738JE81190065	8	35	1125	14-May-98				
56	J738MR81050059	13	33	1127	14-May-98				
57	J738MR81250107	24	29	1131	14-May-98			1131	151
	TOTAL TIMES	**110**	**395**		**COUNT**	**10**			
	DAILY AVERAGE	**11**	**39.5**						

RECAPITULATION FOR 14 MAY

10 DELIVERIES* 18 TOTAL DELIVERIES (INCL EXCLUDED DATA)
11 MINUTES AVG FROM SBSS TO P&D
39 MINUTES 30 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 130 MINUTES
LATEST DELIVERY 151 MINUTES

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
58	J713FL81340009	8	23	1007	15-May-98	1007	67		
59	J713FL81320117	13	23	1007	15-May-98				
60	J738JE81330171	12	12	1018	15-May-98				
61	J738JE81340004	13	12	1018	15-May-98			1018	78
	TOTAL TIMES	**46**	**70**		**COUNT**	**4**			
	DAILY AVERAGE	**11.5**	**17.5**						

RECAPITULATION FOR 15 MAY

4 DELIVERIES* 4 TOTAL DELIVERIES (INCL EXCLUDED DATA)
11 MINUTES 30 SECONDS AVG FROM SBSS TO P&D
17 MINUTES 30 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 67 MINUTES
LATEST DELIVERY 78 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
62	J738MR81260170	3	24	836	18-May-98	‡			
63	J738MR81260187	3	24	836	18-May-98				
	TOTAL TIMES	6	48		COUNT	2			
	DAILY AVERAGE	3	24						

RECAPITULATION FOR 18 MAY

2 DELIVERIES* 2 TOTAL DELIVERIES (INCL EXCLUDED DATA)
3 MINUTES AVG FROM SBSS TO P&D
24 MINUTES AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY NOT COMPUTED
LATEST DELIVERY NOT COMPUTED

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
64	J738JE81358106	8	25	952	19-May-98	952	52		
65	J738JE81200043	7	23	954	19-May-98				
66	J738JE81330174	6	22	955	19-May-98			955	55
	TOTAL TIMES	21	70		COUNT	3			
	DAILY AVERAGE	7	23.33						

RECAPITULATION FOR 19 MAY

3 DELIVERIES* 3 TOTAL DELIVERIES (INCL EXCLUDED DATA)
7 MINUTES AVG FROM SBSS TO P&D
23 MINUTES 20 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 52 MINUTES
LATEST DELIVERY 55 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
67	J738MR81380126	2	8	941	20-May-98	941	41		
68	J738MR80340027	7	3	945	20-May-98				
69	J738JE81320035	7	10	952	20-May-98				
70	J738JE81320043	7	10	952	20-May-98				
71	J738MR80510107	2	23	957	20-May-98				
72	J738JE81380015	11	33	957	20-May-98				
73	J738MR81380131	13	22	958	20-May-98				
74	J738MR80620086	8	28	1002	20-May-98				
75	B738JE81320669	6	4.25	1034	20-May-98				
76	J738ES81400052	5	5.32	1425	20-May-98				
77	X738JE81403701	5	5.2	1425	20-May-98				
78	J738MR81350053	2	24	1430	20-May-98			1430	330
	TOTAL TIMES	**75**	**175.77**		**COUNT**	**12**			
	DAILY AVERAGE	**6.25**	**14.65**						

RECAPITULATION FOR 20 MAY

12 DELIVERIES* 14 TOTAL DELIVERIES (INCL EXCLUDED DATA)
6 MINUTES 15 SECONDS AVG FROM SBSS TO P&D
14 MINUTES 39 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 41 MINUTES
LATEST DELIVERY 330 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
79	X738JE81413704	5	4.37	853	21-May-98	‡			
80	J738JE81000044	7	14	919	21-May-98				
81	J738JE81358108	3	14	919	21-May-98	919	19		
82	J738JE81170099	6	10	920	21-May-98				
83	J738MR81260134	7	13	920	21-May-98				
84	J738JE81340064	5	13	920	21-May-98				
85	J738MR81400034	3	26	1014	21-May-98				
86	J738MR81400034	14	26	1014	21-May-98				
87	J738MR81390084	9	26	1014	21-May-98				
88	J738MR81400034	4	25	1015	21-May-98				
89	J738JE81390068	3	19	1021	21-May-98				
90	J738MR81380128	6	16	1024	21-May-98				
91	J738MR81380141	5	15	1025	21-May-98				
92	J738MR81380137	6	15	1025	21-May-98				
93	J738JE81380054	4	28	1027	21-May-98				
94	J738MR81390083	4	28	1027	21-May-98				
95	J738MR80760135	2	28	1027	21-May-98				
96	J738MR80970134	5	30	1027	21-May-98				
97	J738MR81040121	5	25	1030	21-May-98				
98	J738MR81390160	5	22	1033	21-May-98				
99	J738MR81390164	5	22	1033	21-May-98				
100	J738JE81390090	6	22	1033	21-May-98				
101	J738JE81390076	4	22	1033	21-May-98				
102	J738MR81390163	5	16	1039	21-May-98				
103	J738MR81390160	5	16	1039	21-May-98				
104	J738MR81390165	5	16	1039	21-May-98				
105	J738MR81380101	8	16	1039	21-May-98				
106	J738JE81260142	4	10	1045	21-May-98				
107	J738MR81400034	2	21	1159	21-May-98				
108	J738MR81300135	2	36	1209	21-May-98				
109	J738MR81380142	1	35	1209	21-May-98			1209	189
	TOTAL TIMES	155	629.37		COUNT	31			
	DAILY AVERAGE	5.00	20.30						

RECAPITULATION FOR 21 MAY
31 DELIVERIES* 35 TOTAL DELIVERIES (INCL EXCLUDED DATA)
5 MINUTES AVG FROM SBSS TO P&D
20 MINUTES 18 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 19 MINUTES
LATEST DELIVERY 189 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
110	J738MR81380149	4	20	750	22-May-98	‡			
111	J738MR81410071	4	20	750	22-May-98				
112	J738MR81410070	4	20	750	22-May-98				
113	J738MR81390100	8	18	917	22-May-98				
114	J738MR81390067	8	18	917	22-May-98				
115	J738MR81400172	4	13	922	22-May-98	922	22		
116	B738JE81400173	5	2.11	950	22-May-98				
117	J872TC81398103	7	4.35	950	22-May-98				
118	J738JE81390046	19	40	1004	22-May-98				
119	J738JE81390188	14	39	1012	22-May-98				
120	J738JE81380070	11	28	1012	22-May-98				
121	J738MR81406124	13	31	1012	22-May-98				
122	J738MR81400170	8	33	1012	22-May-98				
123	J738MR81390084	9	26	1014	22-May-98				
124	J738MR81400034	14	26	1014	22-May-98				
125	J738MR81400034	3	26	1014	22-May-98				
126	J738MR81400034	4	25	1015	22-May-98				
127	J738MR81380128	1	22	1018	22-May-98				
128	J738JE81390051	2	26	1019	22-May-98				
129	J738JE81390068	3	39	1021	22-May-98				
130	J738MR81380141	5	15	1025	22-May-98				
131	J738MR81380137	6	15	1025	22-May-98				
132	J738MR80760135	2	28	1027	22-May-98				
133	J738MR8070134	5	22	1027	22-May-98				
134	J738MR81390083	4	28	1027	22-May-98				
135	J738JE81380054	4	28	1027	22-May-98				
136	J738MR81400030	26	20	1029	22-May-98				
137	J738MR80200086	29	21	1030	22-May-98				
138	J738MR81400138	32	15	1030	22-May-98				
139	J738JE81310076	28	15	1030	22-May-98				
140	J738MR81040121	5	25	1030	22-May-98				
141	J738JE81260143	32	14	1031	22-May-98				
142	J738JE81390076	4	18	1033	22-May-98				
143	J738JE81390090	6	18	1033	22-May-98				
144	J738MR81390164	5	18	1033	22-May-98				
145	J738MR81390160	5	18	1033	22-May-98				
146	J738JE81390113	3	14	1039	22-May-98				
147	J738JE81380101	8	14	1039	22-May-98				
148	J738MR81390160	5	18	1039	22-May-98				
149	J738MR81390165	5	18	1039	22-May-98				
150	J738MR81390163	5	18	1039	22-May-98				
151	J738JE81200041	4	10	1045	22-May-98				
152	J738JE81260142	4	10	1045	22-May-98				
153	X719ST81288553	3	1.05	1350	22-May-98			1350	290
	TOTAL TIMES	380	897.51		COUNT	44			
	DAILY AVERAGE	8.64	20.40						

RECAPITULATION FOR 22 MAY

44 DELIVERIES* 49 TOTAL DELIVERIES (INCL EXCLUDED DATA)
8 MINUTES 38 SECONDS AVG FROM SBSS TO P&D
20 MINUTES 24 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 22 MINUTES
LATEST DELIVERY 290 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
154	J738JE81390091	10	7	938	26-May-98	938	38		
155	J738JE81400134	17	5	940	26-May-98				
156	J738JE81380017	8	11	929	26-May-98				
157	J738MR81400038	5	10	950	26-May-98				
158	J738JE81380119	3	9	931	26-May-98				
159	J718FI581400029	3	9	910	26-May-98				
160	J738MR81410072	3	27	1103	26-May-98				
161	J738MR81410074	4	25	1105	26-May-98				
162	J738MR81410073	5	25	1105	26-May-98				
163	J738MR81410084	2	40	1615	26-May-98				
164	J738MR81410085	2	40	1615	26-May-98				
165	J738MR81410075	4	35	1610	26-May-98				
166	J738MR81410082	2	40	1615	26-May-98				
167	J738MR81410083	2	40	1615	26-May-98			1615	435
	TOTAL TIMES	70	323		COUNT	14			
	DAILY AVERAGE	5.00	23.07						

RECAPITULATION FOR 26 MAY

14 DELIVERIES* 16 TOTAL DELIVERIES (INCL EXCLUDED DATA)
5 MINUTES AVG FROM SBSS TO P&D
23 MINUTES 4 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 38 MINUTES
LATEST DELIVERY 435 MINUTES

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
168	J738JE81470006	13	3	757	27-May-98 ‡				
169	J738MR81400122	3	10	1005	27-May-98	1005	65		
170	J738MR81260141	6	23	1020	27-May-98				
171	J715FL81400194	7	23	1020	27-May-98				
172	J738MR81410076	2	3	1127	27-May-98				
173	J718FI51428578	18	37	1015	27-May-98				
174	J738JE81400090	14	36	1015	27-May-98				
175	J738MR81260166	12	31	1020	27-May-98				
176	J738JE81390032	10	30	1020	27-May-98				
177	J738JE81270036	10	26	1020	27-May-98				
178	J738JE81280026	10	25	1021	27-May-98				
179	J738MR81400126	13	36	1014	27-May-98				
180	J738JE80970078	15	34	1015	27-May-98				
181	B738JE71810253	3	2.24	1107	27-May-98				
182	B738JE81400021	2	2.27	1107	27-May-98				
183	B738JE81400560	1	2.31	1106	27-May-98			1106	126
	TOTAL TIMES	139	323.82		COUNT*	16			
	DAILY AVERAGE	8.69	20.24						

RECAPITULATION FOR 27 MAY

16 DELIVERIES* 16 TOTAL DELIVERIES (INCL EXCLUDED DATA)
8 MINUTES 41 SECONDS AVG FROM SBSS TO P&D
20 MINUTES 14 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 65 MINUTES
LATEST DELIVERY 126 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
184	J738MR81460066	24	9	951	28-May-98	951	51		
185	J738MR81390171	18	9	951	28-May-98				
186	J738MR81460082	15	9	951	28-May-98				
187	J738MR81470068	2	30	958	28-May-98				
188	J738MR81460080	3	29	958	28-May-98				
189	J738MR81460079	4	22	958	28-May-98				
190	J738MR81460072	2	31	958	28-May-98				
191	J738JE81490023	24	32	958	28-May-98				
192	J738MR81390169	5	19	1015	28-May-98				
193	J738MR81390170	5	19	1015	28-May-98				
194	J738MR81390172	5	19	1015	28-May-98				
195	J738MR81390168	5	19	1015	28-May-98				
196	B738JE70340418	5	19	1015	28-May-98				
197	J738MR81390165	10	22	1018	28-May-98				
198	J738MR81390166	10	22	1018	28-May-98				
199	J738MR81460076	15	21	1019	28-May-98				
200	J738MR81460065	15	20	1020	28-May-98				
201	J738JE81460012	18	19	1021	28-May-98				
202	J738JE81480159	6	15	1501	28-May-98				
203	J738JE81480156	8	16	1504	28-May-98				
204	J738JE81480154	9	16	1504	28-May-98				
205	J738JE81480158	7	15	1505	28-May-98				
206	J738JE81480160	9	6	1509	28-May-98			1509	369
	TOTAL TIMES	**224**	**438**		**COUNT**	**23**			
	DAILY AVERAGE	**9.74**	**19.04**						

RECAPITULATION FOR 28 MAY
23 DELIVERIES* 23 TOTAL DELIVERIES (INCL EXCLUDED DATA)
9 MINUTES 44 SECONDS AVG FROM SBSS TO P&D
19 MINUTES 2 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 51 MINUTES
LATEST DELIVERY 369 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
207	J738MR81400032	3	3	1015	29-May-98	1015	75		
208	J738MR81390101	4	5	1015	29-May-98				
209	J738MR81460081	4	5	1015	29-May-98				
210	J738MR81410039	9	3	1015	29-May-98				
211	J738MR81470071	3	5	1015	29-May-98				
212	J738MR81460068	6	3	1017	29-May-98				
213	J738MR81470078	10	5	1019	29-May-98				
214	J738MR81400038	5	25	1035	29-May-98				
215	J715IS81498580	2	5	1035	29-May-98				
216	J715IS81498580	2	5	1035	29-May-98				
217	J738MR81470094	2	16	1036	29-May-98				
218	J738MR81390069	3	32	1038	29-May-98				
219	J738JE81470007	9	28	1040	29-May-98				
220	J738MR81470077	10	28	1042	29-May-98				
221	J738MR81470090	4	19	1042	29-May-98				
222	J713FL81460063	16	26	1045	29-May-98				
223	B738JE81260034	3	3.27	1047	29-May-98				
224	J738MR81190069	12	3.2	1048	29-May-98				
225	J738JE813300657	2	5	1057	29-May-98				
226	J738MR81410081	4	5	1057	29-May-98				
227	J738MR81040035	4	5	1058	29-May-98				
228	J738MR81380140	4	5	1058	29-May-98				
229	J738MR81410079	4	5	1058	29-May-98				
230	B738JE81460645	2	3.04	1104	29-May-98				
231	B738JE73370640	16	2.48	1112	29-May-98				
232	J738MR81460069	4	30	1139	29-May-98			1139	159
	TOTAL TIMES	147	279.99		COUNT	26			
	DAILY AVERAGE	5.65	10.77						

RECAPITULATION FOR 29 MAY

26 DELIVERIES* 29 TOTAL DELIVERIES (INCL EXCLUDED DATA)
5 MINUTES 39 SECONDS AVG FROM SBSS TO P&D
10 MINUTES 46 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 75 MINUTES
LATEST DELIVERY 159 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
233	J738JE81520021	11	31	909	1-Jun-98	‡			
234	J738JE81520022	9	29	911	1-Jun-98				
235	J738JE81520023	9	28	912	1-Jun-98				
236	J738JE81520026	6	27	913	1-Jun-98				
237	J738JE81520027	5	27	913	1-Jun-98				
238	J738MR81470076	4	48	914	1-Jun-98				
239	J738MR81470088	4	41	916	1-Jun-98				
240	J738MR81470070	6	42	917	1-Jun-98				
241	J738MR81480145	4	44	920	1-Jun-98				
242	J738MR81460064	8	47	922	1-Jun-98				
243	J738MR81480176	7	18	922	1-Jun-98				
244	J738MR81470069	11	43	923	1-Jun-98				
245	J715IS81498578	3	17	923	1-Jun-98	923	23		
246	J738MR81460074	3	17	923	1-Jun-98				
247	J738MR81390075	10	17	923	1-Jun-98				
248	J738MR81480171	9	46	925	1-Jun-98				
249	J738JE81480127	5	42	929	1-Jun-98				
250	J738MR81390082	7	10	930	1-Jun-98				
251	J738JE81470085	5	37	940	1-Jun-98				
252	J738JE81470084	10	16	1003	1-Jun-98				
253	J738MR81490053	5	23	1027	1-Jun-98				
254	J738MR81410080	1	10	1439	1-Jun-98				
255	J738JE80420073	2	21	1525	1-Jun-98				
256	J738JE81520101	3	8	1525	1-Jun-98			1525	385
	TOTAL TIMES	**147**	**689**		**COUNT**	**24**			
	DAILY AVERAGE	**6.13**	**28.71**						

RECAPITULATION FOR 1 JUNE

24 DELIVERIES* 24 TOTAL DELIVERIES (INCL EXCLUDED DATA)
6 MINUTES 8 SECONDS AVG FROM SBSS TO P&D
28 MINUTES 43 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 23 MINUTES
LATEST DELIVERY 385 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
257	J738MR81190017	11	41	943	2-Jun-98	‡			
258	J738MR81190017	10	59	945	2-Jun-98				
259	J738MR81190017	10	43	946	2-Jun-98				
260	J738MR80260028	10	42	947	2-Jun-98				
261	J738MR81490071	6	8	947	2-Jun-98	947	47		
262	J738MR81190017	10	56	948	2-Jun-98				
263	J738MR81490071	3	12	948	2-Jun-98				
264	J713FL81100071	3	10	949	2-Jun-98				
265	J738MR81190017	9	39	950	2-Jun-98				
266	J738MR81190017	11	29	950	2-Jun-98				
267	J738MR81190017	8	44	950	2-Jun-98				
268	J738MR81190017	11	39	950	2-Jun-98				
269	J738MR81190017	10	44	950	2-Jun-98				
270	J738MR81480191	11	39	950	2-Jun-98				
271	J738MR81190017	12	30	950	2-Jun-98				
272	J738MR81190017	11	30	950	2-Jun-98				
273	J738MR81480172	4	38	951	2-Jun-98				
274	J738MR81470091	5	37	952	2-Jun-98				
275	J738JE81520010	13	37	952	2-Jun-98				
276	J738JE81480057	13	51	953	2-Jun-98				
277	J738MR81190017	15	34	956	2-Jun-98				
278	J738MR81490061	1	31	957	2-Jun-98				
279	J738MR81480062	11	51	957	2-Jun-98				
280	J738MR81480170	12	27	1002	2-Jun-98				
281	J738MR81480196	13	27	1002	2-Jun-98				
282	J738MR81490063	13	41	1003	2-Jun-98				
283	J738MR81490047	12	26	1003	2-Jun-98				
284	J738MR81480192	15	40	1004	2-Jun-98				
285	J738MR81490064	14	23	1006	2-Jun-98				
286	J738MR81470087	8	20	1009	2-Jun-98				
287	J738MR81470089	10	16	1013	2-Jun-98				
288	J738MR81490057	9	11	1018	2-Jun-98				
289	J738MR81480179	9	11	1018	2-Jun-98				
290	J738MR81480182	9	11	1018	2-Jun-98				
291	J738JE81520010	7	11	1018	2-Jun-98				
292	J738MR72940101	12	2.41	1107	2-Jun-98			1107	127
	TOTAL TIMES	351	1110.41		COUNT	36			
	DAILY AVERAGE	9.75	30.84						

RECAPITULATION FOR 2 JUNE

36 DELIVERIES* 40 TOTAL DELIVERIES (INCL EXCLUDED DATA)
9 MINUTES 45 SECONDS AVG FROM SBSS TO P&D
30 MINUTES 50 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 47 MINUTES
LATEST DELIVERY 127 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
293	J738JE81100034	3	32	956	3-Jun-98	956	56		
294	J738JE81520061	7	21	1009	3-Jun-98				
295	J738JE81520029	12	9	1009	3-Jun-98				
296	J738JE81200046	10	20	1009	3-Jun-98				
297	J738MR81490046	2	57	1027	3-Jun-98				
298	J738MR81490073	1	40	1033	3-Jun-98				
299	J738JE81480035	4	5	1610	3-Jun-98			1610	430
	TOTAL TIMES	39	184		COUNT	7			
	DAILY AVERAGE	5.57	26.29						

RECAPITULATION FOR 3 JUNE

7 DELIVERIES* 9 TOTAL DELIVERIES (INCL EXCLUDED DATA)
5 MINUTES 34 SECONDS AVG FROM SBSS TO P&D
26 MINUTES 17 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 56 MINUTES
LATEST DELIVERY 430 MINUTES

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
300	J738MR81260144	7	41	948	4-Jun-98	948	48		
301	J738MR81190017	8	39	950	4-Jun-98				
302	J738MR81190017	8	38	951	4-Jun-98				
303	J738JE81520035	12	7	1023	4-Jun-98				
304	J738JE81530049	10	7	1030	4-Jun-98				
305	J738JE81520054	10	6	1030	4-Jun-98				
306	J738JE81530029	14	15	1038	4-Jun-98				
307	J738JE81480093	9	46	1043	4-Jun-98				
308	J738JE81400044	4	51	1049	4-Jun-98			1049	109
	TOTAL TIMES	82	250		COUNT	9			
	DAILY AVERAGE	9.11	27.78						

RECAPITULATION FOR 4 JUNE

9 DELIVERIES* 11 TOTAL DELIVERIES (INCL EXCLUDED DATA)
9 MINUTES 7 SECONDS AVG FROM SBSS TO P&D
27 MINUTES 47 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 48 MINUTES
LATEST DELIVERY 109 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
309	J738MR81480182	4	19	1202	5-Jun-98	1202	182		
310	J738MR81480182	3	13	1202	5-Jun-98				
311	J738MR81480182	6	18	1203	5-Jun-98			1203	183
	TOTAL TIMES	13	50		COUNT	3			
	DAILY AVERAGE	4.33	16.67						

RECAPITULATION FOR 5 JUNE

3 DELIVERIES* 3 TOTAL DELIVERIES (INCL EXCLUDED DATA)
4 MINUTES 20 SECONDS AVG FROM SBSS TO P&D
16 MINUTES 40 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 182 MINUTES
LATEST DELIVERY 183 MINUTES

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
312	J738JE81380026	6	13	902	8-Jun-98	‡			
313	J738MR81460070	13	5	910	8-Jun-98				
314	J738MR81310022	16	2	934	8-Jun-98	934	34		
315	J738J381520028	12	9	935	8-Jun-98				
316	J738JE81540004	14	10	935	8-Jun-98				
317	J738MR81400098	15	15	1106	8-Jun-98				
318		19	1	1129	8-Jun-98			1129	149
	TOTAL TIMES	95	55		COUNT	7			
	DAILY AVERAGE	13.57	7.86						

RECAPITULATION FOR 8 JUNE

7 DELIVERIES* 20 TOTAL DELIVERIES (INCL EXCLUDED DATA)
13 MINUTES 34 SECONDS AVG FROM SBSS TO P&D**
7 MINUTES 52 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 34 MINUTES
LATEST DELIVERY 149 MINUTES

** if excluded data points with times for SBSS to P&D were included the average time would be 14.69 minutes

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)

All data points for 11 Jun 98 excluded on the basis of incomplete data

RECAPITULATION FOR 11 JUNE

0 DELIVERIES* 6 TOTAL DELIVERIES (INCL EXCLUDED DATA)
35 MINUTES 45 SECONDS AVG FROM SBSS TO P&D***
MISSING DATA PREVENTS COMPUTING AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 15 MINUTES***
LATEST DELIVERY 122 MINUTES***

*** Computed from data contained in the excluded data points

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
321	J872TC81350024	10	24	9:31	15-Jun-98				
322	J738MR81590037	3	13	9:32	15-Jun-98	932	32		
323	J713FL81620042	14	20	9:35	15-Jun-98				
324	J738MR81590037	3	12	9:43	15-Jun-98				
325	J738JE81620009	18	10	9:45	15-Jun-98				
326	J738MR81630044	3	10	9:45	15-Jun-98				
327	J738JE81590080	18	7	9:46	15-Jun-98				
328	J738ES81678103	6	20	12:45	15-Jun-98				
329	J738ES81678102	6	17	12:48	15-Jun-98			1248	228
	TOTAL TIMES	81	133		COUNT	9			
	DAILY AVERAGE	9.00	14.78						

RECAPITULATION FOR 15 JUNE

9 DELIVERIES* 9 TOTAL DELIVERIES (INCL EXCLUDED DATA)
9 MINUTES AVG FROM SBSS TO P&D
14 MINUTES 47 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 32 MINUTES***
LATEST DELIVERY 228 MINUTES***

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
330	J738MR81630045	9	12	11:12	16-Jun-98	1112	132		
331	J738MR81600026	9	12	11:12	16-Jun-98				
332	J738MR81630076	8	7	11:18	16-Jun-98			1118	138
	TOTAL TIMES	26	31		COUNT	3			
	DAILY AVERAGE	8.67	10.33						

RECAPITULATION FOR 16 JUNE

3 DELIVERIES* 5 TOTAL DELIVERIES (INCL EXCLUDED DATA)
8 MINUTES 40 SECONDS AVG FROM SBSS TO P&D
10 MINUTES 20 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 132 MINUTES
LATEST DELIVERY 138 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
333	J738MR81590013	6	20	9:39	17-Jun-98	939	39		
334	J738MR81630074	12	15	9:44	17-Jun-98				
335	J738MR81380030	7	15	9:44	17-Jun-98				
336	J738JE81660034	8	15	9:44	17-Jun-98				
337	J738MR81630049	5	23	9:57	17-Jun-98				
338	J738MR81630046	3	18	10:01	17-Jun-98				
339	J738MR81630078	4	18	10:01	17-Jun-98				
340	J738MR81630070	13	16	10:03	17-Jun-98				
341	J738MR81630072	12	16	10:03	17-Jun-98				
342	J738MR81630047	11	16	10:03	17-Jun-98				
343	J738JE81560009	9	13	10:06	17-Jun-98				
344	J738JE81660071	9	13	10:06	17-Jun-98				
345	J738JE81540030	6	13	10:06	17-Jun-98				
346	J738JE81170061	5	8	10:12	17-Jun-98				
347	J738JE81660061	5	8	10:12	17-Jun-98				
348	J738JE81358105	6	8	10:12	17-Jun-98				
349	J738JE81550080	2	11	11:12	17-Jun-98			1112	132
	TOTAL TIMES	123	246		COUNT	17			
	DAILY AVERAGE	7.24	14.47						

RECAPITULATION FOR 17 JUNE

17 DELIVERIES* 17 TOTAL DELIVERIES (INCL EXCLUDED DATA)
7 MINUTES 14 SECONDS AVG FROM SBSS TO P&D
14 MINUTES 28 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 39 MINUTES
LATEST DELIVERY 132 MINUTES

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
350	J738JE81660003	5	13	10:31	18-Jun-98	1031	31		
352	J738MR81680005	2	10	11:20	18-Jun-98				
353	B738JE81461080	9	42	12:00	18-Jun-98				
354	B738JE81550126	5	68	12:00	18-Jun-98			1200	180
	TOTAL TIMES	21	133		COUNT	4			
	DAILY AVERAGE	5.25	33.25						

RECAPITULATION FOR 18 JUNE

4 DELIVERIES* 8 TOTAL DELIVERIES (INCL EXCLUDED DATA)
5 MINUTES 15 SECONDS AVG FROM SBSS TO P&D
33 MINUTES 15 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 31 MINUTES
LATEST DELIVERY 180 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
355	B738JE81660688	17	13	9:57	19-Jun-98	957	57		
356	B738JE81660690	19	13	9:57	19-Jun-98				
357	B738JE81620161	17	13	9:57	19-Jun-98				
358	J738MR81670079	24	21	10:44	19-Jun-98				
359	J738JE81670095	7	25	10:45	19-Jun-98				
360	J738MR81670080	6	30	10:46	19-Jun-98				
361	J738MR81490074	7	30	10:46	19-Jun-98				
362	J738MR81460067	13	44	10:49	19-Jun-98				
363	J738MR81390079	12	30	11:00	19-Jun-98				
364	J738SE81678110	13	30	11:00	19-Jun-98				
365	J738MR81630089	4	28	11:02	19-Jun-98				
366	J738JE81680121	6	27	11:03	19-Jun-98				
367	J738MR81600027	5	27	11:03	19-Jun-98				
368	J738MR81630092	4	23	11:03	19-Jun-98				
369	J738MR81630067	3	23	11:03	19-Jun-98				
370	J738JE81670059	38	25	11:05	19-Jun-98				
371	J738MR81310025	38	24	11:06	19-Jun-98				
372	J738MR81630066	4	23	11:07	19-Jun-98				
373	J738MR81630067	4	23	11:07	19-Jun-98				
374	J738MR81590012	39	23	11:07	19-Jun-98				
375	J738MR81630093	17	23	11:07	19-Jun-98				
376	J738MR81630068	12	23	11:07	19-Jun-98				
377	J738MR81630066	9	23	11:07	19-Jun-98				
378	J738M481630048	38	24	11:08	19-Jun-98				
379	J738JE81680090	3	19	11:11	19-Jun-98				
380	J738MR80260028	1	18	11:12	19-Jun-98				
381	J738JE81680084	13	11	11:19	19-Jun-98				
382	J738JE81690013	13	10	11:20	19-Jun-98				
383	J872TC80620164	1	20	14:42	19-Jun-98				
384	J738JE81130006	2	25	14:42	19-Jun-98			1442	342
	TOTAL TIMES	389	691		COUNT	30			
	DAILY AVERAGE	12.97	23.03						

RECAPITULATION FOR 19 JUNE

30 DELIVERIES* 34 TOTAL DELIVERIES (INCL EXCLUDED DATA)
12 MINUTES 58 SECONDS AVG FROM SBSS TO P&D
23 MINUTES 2 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 57 MINUTES
LATEST DELIVERY 342 MINUTES

P &D Logbook Preliminary Analysis

COUNT	DOC #	REC TO P&D	P&D TO CUST	TIME	DATE	Earliest Receipt	Earliest Receipt (Minutes fr 9AM)	Last Receipt	Latest Receipt (Minutes fr 9AM)
385	J738MR81470093	6	20	8:45	22-Jun-98	‡			
386	J738MR81590040	9	34	8:56	22-Jun-98				
387	J738MR81380129	26	22	9:08	22-Jun-98				
388	J738MR81330050	26	21	9:09	22-Jun-98				
389	J738JE81670091	21	19	9:11	22-Jun-98				
390	J738MR81630077	5	14	9:16	22-Jun-98				
391	J738JE81680082	1	13	9:17	22-Jun-98	917	17		
392	J738MR81700093	4	28	9:22	22-Jun-98				
393	J738MR81630093	7	24	9:36	22-Jun-98				
394	J738MR81630091	11	22	9:38	22-Jun-98				
395	J738MR81630092	11	26	9:39	22-Jun-98				
396	J738MR81630090	11	20	9:40	22-Jun-98				
397	J738MR81678108	16	21	9:44	22-Jun-98				
398	J738JE80610018	9	21	9:44	22-Jun-98				
399	J738MR81700104	9	19	9:45	22-Jun-98				
400	J738JE81680040	21	19	9:46	22-Jun-98				
401	J738MR81690031	8	14	9:46	22-Jun-98				
402	J738JE81690032	8	19	9:46	22-Jun-98				
403	J738JE81680081	15	10	9:50	22-Jun-98				
404	J738MR81630093	5	2	10:03	22-Jun-98			1003	63
	TOTAL TIMES	229	388		COUNT	20			
	DAILY AVERAGE	11.45	19.40						

RECAPITULATION FOR 22 JUNE

20 DELIVERIES* 25 TOTAL DELIVERIES (INCL EXCLUDED DATA)
11 MINUTES 27 SECONDS AVG FROM SBSS TO P&D
19 MINUTES 24 SECONDS AVG FROM P&D TO CUSTOMER
EARLIEST DELIVERY 17 MINUTES
LATEST DELIVERY 63 MINUTES

P & D Logbook
Daily Delivery Analysis

DATE	TOTAL TIME REC TO P&D (minutes)	TOTAL TIME P&D TO CUST (minutes)	# OF PACKAGES	# OF RUNS
8-May-98	314	539.28	23	2
11-May-98	10	86	3	1
12-May-98	16	34	2	2
13-May-98	312	365.45	19	4
14-May-98	110	395	10	2
15-May-98	46	70	4	1
18-May-98	6	48	2	1
19-May-98	21	70	3	1
20-May-98	75	175.77	12	3
21-May-98	155	629.37	31	4
22-May-98	380	897.51	44	5
26-May-98	70	323	14	4
27-May-98	139	323.82	16	5
28-May-98	224	438	23	3
29-May-98	147	279.99	26	2
1-Jun-98	147	689	24	4
2-Jun-98	351	1110.41	36	2
3-Jun-98	39	184	7	3
4-Jun-98	82	250	9	2
5-Jun-98	13	50	3	1
8-Jun-98	95	55	7	4
15-Jun-98	81	133	9	2
16-Jun-98	26	31	3	3
17-Jun-98	123	246	17	2
18-Jun-98	21	133	4	3
19-Jun-98	389	691	30	4
22-Jun-98	229	388	20	1

Total Rec-P&D/Total Packages =	**9.03**
Total P&D-Cust/Total Packages =	**21.54**

Average No. of Daily Packages =	**14.85**

Average No of Daily Runs =	**2.63**

Time from SBSS Creation to P&D	
Mean	**9.17**
Standard Error	0.40
Median	7
Mode	5
Standard Deviation	8.03
Sample Variance	64.44
Kurtosis	8.65
Skewness	2.55
Range	56
Minimum	1
Maximum	57
Sum	3694
Count	403
Confidence Level(95.0%)	0.79

Time from P&D to Customer	
Mean	**21.51**
Standard Error	0.62
Median	20
Mode	19
Standard Deviation	12.39
Sample Variance	153.56
Kurtosis	0.25
Skewness	0.62
Range	67
Minimum	1
Maximum	68
Sum	8645.6
Count	402
Confidence Level(95.0%)	1.22

Daily Runs	
Mean	2.62962963
Standard Error	0.245461065
Median	2
Mode	2
Standard Deviation	1.275453106
Sample Variance	1.626780627
Kurtosis	-1.03667625
Skewness	0.287635153
Range	4
Minimum	1
Maximum	5
Sum	71
Count	27

P & D Logbook
Daily Delivery Analysis

Confidence Level(95.0%)	0.504552775

P & D Logbook
Earliest-Latest Delivery Analysis

DATE	Earliest Receipt (Minutes from 9AM)	Latest Receipt (Minutes from 9AM)
8-May-98	61	175
11-May-98	310	311
12-May-98	25	191
13-May-98	50	429
14-May-98	130	151
15-May-98	67	78
19-May-98	52	55
20-May-98	41	330
21-May-98	19	189
22-May-98	22	290
26-May-98	38	435
27-May-98	65	126
28-May-98	51	369
29-May-98	75	159
1-Jun-98	23	385
2-Jun-98	47	127
3-Jun-98	56	430
4-Jun-98	48	109
5-Jun-98	182	183
8-Jun-98	34	149
15-Jun-98	32	228
16-Jun-98	132	138
17-Jun-98	39	132
18-Jun-98	31	180
19-Jun-98	57	342
22-Jun-98	17	63
AVERAGE	65.64	221.64

Earliest deliveries average 1 hour 6 minutes
Latest deliveries average 3 hours 41 minutes

Earliest delivery was 17 minutes
Latest delivery was 7 hours 15 minutes

Analysis of Daily TMO Trips
Post - Direct Ship

Post FEDEX	
Date	# of trips to TMO
8131	4
8132	5
8133	3
8134	1
8135	2
8138	3
8139	1
8140	3
8141	4
8142	1
8145	2
8146	2
8147	3
8148	1
8149	0
8152	2
8153	4
8154	2
8155	1
8156	2
8160	2
8161	1
8162	3
8163	2
8166	2
8167	3
8168	1
8169	1

Descriptive Statistics - Daily TMO Trips	
Mean	2.18
Standard Error	0.22
Median	2
Mode	2
Standard Deviation	1.19
Sample Variance	1.41
Kurtosis	-0.18
Skewness	0.49
Range	5
Minimum	0
Maximum	5
Sum	61
Count	28
Confidence Level (95.0%)	0.46

Number of FedEx Shipments

Julian Date	Number of FedEx Parcels	Number of Oversize/ Overweight
8090	2	2
8091	13	3
8092	2	0
8093	7	1
8096	2	3
8097	8	0
8098		0
8099	30	0
8100	8	1
8103	10	3
8104	2	0
8105	32	1
8106	7	3
8107	9	2
8110	1	3
8111	6	0
8112	4	0
8113	1	3
8114	0	3
8117	8	0
8118	2	2
8119	23	1
8120	1	1
8121	2	0
8124	2	3
8125	21	1
8126	7	3
8127	29	2
8128	10	2
8131	4	3
8132	35	0
8133	6	2
8134	52	0
8135	1	0
8138	14	*
8139	23	*
8140	63	*
8141	53	*
8142	6	*
8145	0	*
8146	0	*
8147	0	*
8148	81	*
8149	43	*
8152	11	*
8153	26	*
8154	9	*

Descriptive Statistics FedEX Package Flow	
Mean	**14.6**
Standard Error	2.092776
Median	9
Mode	2
Standard Deviation	16.8725
Sample Variance	284.6813
Kurtosis	3.786746
Skewness	1.915345
Range	81
Minimum	0
Maximum	81
Sum	949
Count	65
Confidence Level(95.0%)	4.180797

Descriptive Statistics Number of Oversize/ Overweight	
Mean	1.411765
Standard Error	0.215767
Median	1
Mode	0
Standard Deviation	1.258129
Sample Variance	1.582888
Kurtosis	-1.665659
Skewness	0.114794
Range	3
Minimum	0
Maximum	3
Sum	48
Count	34
Confidence Level(95.0%)	0.438982

*** Data collection suspended after Julian Date 8138**

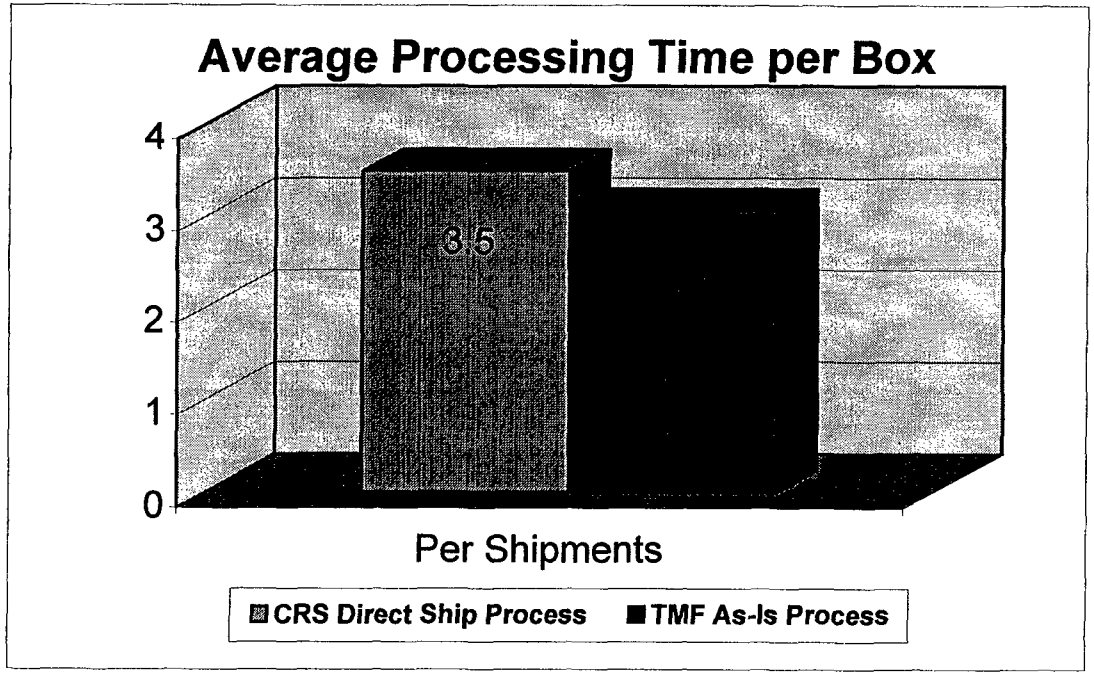
Number of FedEx Shipments

Julian Date	Number of FedEx Parcels	Number of Oversize/ Overweight
8155	8	*
8156	21	*
8159	5	*
8160	2	*
8161	50	*
8162	6	*
8163	13	*
8166	18	*
8167	11	*
8168	19	*
8169	12	*
8170	9	*
8173	40	*
8174	15	*
8175	12	*
8176	11	*
8177	17	*
8181	1	*
8182	3	*

CRS to TRNS Direct Ship Comparison Data

CRS Processing Times	Unit of Meas	Pkg 1	Pkg 2	Pkg 3	Pkg 4	Pkg 5	Pkg 6	Pkg 7	Pkg 8	Pkg 9	Pkg 10	Pkg 11	Pkg 12	Pkg 13	SUM ALL	AVG.
PowerShip Times	Sec.	160	185	104	184	184.0	134	207	228	166.9	118	116	110	146	2042.86	**157.1**
SSC Processing Times	Sec.	32	31	32	132	70	28	40							365	**52.14**
Total average time to process	Sec.	**209**		**209 seconds = 3.5 minutes**											Total	**209.3**

TRNS Processing Times	Unit of Meas	AVG.	Pkg 1	Pkg 2	Pkg 3	Pkg 4	Pkg 5	Pkg 6	Pkg 7	Pkg 8	Pkg 9	Pkg 10	Pkg 11	Pkg 12	Pkg 13	Pkg 14	Pkg 15	Pkg 16	Pkg 17
CMOS input, print & label box	Min.	**3.1**	2	1	5	4	5	2	3	2	5	3	2	2	4	2	4	3	3



CENTRAL RECEIVING TIMES

NOTE: Times shown in hh:mm:ss

Offload Express Carrier Truck						
Carrier	***# Boxes***	***Start***	***Stop***	***Total Time***	***Total TMO Shipment Receiving Time***	***Total Supply Shipment Receiving Time***
FedEx	~50	8:55:00	9:10:00	0:15:00		
RPS	~20	9:56:00	10:05:00	0:09:00	0:55:25	1:02:45

TMO-SUPS Receiving Processing Times					
	CMOS scan	***SUPS inspect.***	***REC Proc.***	***Print Time***	
	0:01:10	0:05:35	0:00:25	~15 seconds for all	
		0:01:10	0:00:30		
		0:03:50	0:00:15		
		0:03:30	0:00:20		
		0:04:05	0:00:30		
		0:01:20	0:00:28		
		0:02:00	0:00:15		
		0:01:50	0:00:27		***Grand Total***
TOTALS	**0:01:10**	**0:23:20**	**0:03:10**	**0:00:15**	***0:27:55***

P&D Delivery Times to CRS Engine Shop					
Quantity	***Holding***	***Loading***	***Delivery***	***Off-loading***	***Return***
2 pallets	0:07:00	0:05:15	0:07:20	0:08:50	0:06:00
					Grand Total
					0:34:25

CRS to TMF Delivery Times

Transportation Data (CRS to TMO), As of 16 Jun 98:

	Time (Min.Sec)	Total (Min.Sec)	Action
	9.00	9.00	Move Boxes/Crates Out to Truck
	4.00	13.00	Move Boxes/Crates Out to Truck
	4.00	17.00	Move Boxes/Crates Out to Truck
	8.00	25.00	Load Boxes/Pallets Onto Truck
	10.00	35.00	Repair & Close Crate Lid
	7.00	42.00	TRAVEL fr CRS to TMO (1 crate)
	10.30	52.30	Unload Boxes/Pallets at TMO
	6.00	58.30	TRAVEL to TMO fr CRS
Total Rd Trip	**58.30**		

	Time (Min.Sec)	Total (Min.Sec)	Action
	17.15	17.15	Load Boxes/Pallets Onto Truck
	6.30	23.45	TRAVEL fr CRS to TMO (1 crate)
	18.30	42.15	Unload Boxes/Pallets at TMO
	6.05	48.20	TRAVEL to TMO fr CRS
Total Rd Trip	**48.20**		

Daily Total	**106.50**
Equates to	**1 hr, 46 min, 50 sec**

	Manpower Savings Calculation	
	1.78	hours per day
x	2	people per trip
	3.56	hours/day
x	20.99	Avail days per month
	74.72	hours/month
÷	151.1	Man-hours Available
=	0.49	

	Calculated Savings (E-5)	
	74.72	hours saved per month
x	12	months per year
=	896.64	hours per year saved
x	$18.81	hourly rate (E-5)
=	$16,865.80	Annual savings

DIRECT RECEIPT DATA

Times are in minutes

CRS Direct Receipt Samples	
Time	*Items*
2.45	1 box
2.97	1 pkg - 4 items
6.15	1 pkg - 735 small items
2.00	4 pkgs
2.00	1 box
2.00	1 box
2.00	1 box
2.80	**AVERAGE**

2.8 minutes = 2 minutes 48 seconds
average time to process a package

FEDEX PROCESSING TIMES

FedEx Processing Time (includes weighing, processing, & SSC)
Time
0:03:30
0:02:30
0:02:10
0:02:30
0:03:35
0:03:59
0:03:37
0:03:00
0:02:37
0:02:30

Rough Estimates of Average Processing Time *SrA Ray B.*
0:00:45 2005
0:03:00 obtaining and packing box
0:04:00 inspection and SBSS processing

Note:
CRS FedEx Terminal closeout time = ~5 minutes (only about 30 seconds human work time)

P &D SAVINGS COMPUTATION

P&D Labor Savings from Direct Receipt For CRS (times are in minutes)		
+	3.5	Avg P&D Load Time
+	13	Avg Round Trip to CRS (see Transportation Data Tab)
+	3.5	Avg P&D Unload Time
	20	Total P&D Time (1 Person/1 Round Trip Delivery to CRS)
X	2.6	Trips/ Day (P&D Logbook Analysis Tab F)
	52	Total Minutes per day for Deliveries to CRS (One Person)
/	60	Minutes in a hour
	0.87	Hours Per Day
X	20.99	Days Per Month
	18.19	Hours Per Month
X	12	Months Per Year
	218.30	Hours Per Year
X	$18.81	E-5 Hourly Pay Rate
	$4,106.15	**Total Annual Savings from P&D for CRS Direct Receipt**

LANGLEY AIR FORCE BASE		
	$4,106.15	Annual CRS Engine Shop Savings for Direct Receipt
/	21	CRS has 21% of Langley's Total DORs
=	$195.53	Savings for Each Percent of Langley's DORs
X	79	Percent Direct Ship from All Others (100 - 21 = 79%)
=	$15,446.95	Potential Savings for All Others (79%)
	$19,553.10	**Total Potential Annual Savings Across Langley (CRS + Others)**
CATEGORY 1 BASES (Langley, Davis Monthan, Holloman, Shaw, Barksdale, Moody, Mt Home, and Nellis)		
	$19,553.10	Langley's Potential Total Direct Receipt Savings
X	8	ACC has 8 Category 1 Bases like Langley
	$156,424.76	**Total Potential Savings for All Category 1 Bases**
CATEGORY 2 BASES (Seymore Johnson, Dyess, Minot, Whiteman, Cannon, Ellsworth, Offutt, and Beale)		
	$19,553.10	Potential Savings of a Category 1 Base
X	0.66	Category 2 Bases are approx. 2/3 size of Category 1 Bases
	$12,905.04	Savings Potential of a Category 2 Base
X	8	ACC has 8 Category 2 Bases
=	**$103,240.34**	**Total Potential Savings for All Category 2 Bases**
	$259,665.10	**Total Potential Direct Receipt Savings for ACC**

DIRECT SHIP SAVINGS COMPUTATION

DIRECT SHIP

	Vehicle O&M Calculations:	
	3.6	miles (round trip)
X	2	trips per day
=	7.2	miles per day
X	$0.23	Cost per mile
=	$1.66	O&M Cost per day
X	20.99	days/month
=	$34.76	Cost per Month
X	12	Months/year
=	**$417.11**	**O&M Savings per year**

	CRS Engine Shop Labor Savings for Delivering Non Express Carrier Eligible Property From CRS to TMF	
	1.78	hours per day
X	2	people
=	3.56	hours/day
X	20.99	Available Days per Month
=	74.72	hours/month
/	151.5	Man-hour Availability Factor
=	0.49	Authorization Savings
	74.72	Hours Saved Per Month
X	12	months per year
=	896.64	hours per year saved
X	$18.81	hourly rate (E-5)
=	**$16,865.80**	**Annual Labor Savings**

	$417.11	O&M Savings per year
+	$16,865.80	Annual Labor Savings
=	**$17,282.91**	**Annual CRS Engine Shop Savings for Direct Ship**

DIRECT SHIP SAVINGS COMPUTATION

From Appendix C-5

T-WRAPS
Langley AFB OUTBOUND (Last Year)

Total	Per Month
16,205	1,350

CRS processes an avg of 14.6 packages Per day x 20.99 = 306 packages per month.
Therefore 306 divided by 1,350 = 23% of TMO's total small package workload.

Hence, 77% of Langley's FedEx Eligible Direct Ship Packages
Did Not Come From CRS Engine Shop

	$17,282.91	Annual CRS Engine Shop Savings for Direct Ship
/	23	CRS has 23% of Langley's Total Direct Shipping
=	$751.43	Savings for Each Percent of Langley's Direct Ship
X	77	Percent Direct Ship from All Others (100 - 23 = 77%)
=	$57,860.18	Potential Savings for All Others (77%)
	$75,143.09	**Total Potential Annual Savings Across Langley (23% + 77%)**
	CATEGORY 1 BASES	
	(Langley, Davis Monthan, Holloman, Shaw, Barksdale, Moody, Mt Home, and Nellis)	
	$75,143.09	Langley's Potential Savings
X	8	ACC has 8 Category 1 Bases like Langley
	$462,881.46	**Total Potential Savings for All Category 1 Bases**
	CATEGORY 2 BASES	
	(Seymore Johnson, Dyess, Minot, Whiteman, Cannon, Ellsworth, Offutt, and Beale)	
	$75,143.09	Potential Savings of a Cat 1 Base
X	0.66	Category 2 Bases are approx. 2/3 size of Cat 1 Bases
	$49,594.44	Savings Potential of a Category 2 Base
X	8	ACC has 8 Category 2 Bases
	$305,501.76	**Total Potential Savings for All Category 2 Bases**
	$768,383.22	**Total Potential Direct Ship Savings for ACC**

CMOS HHT IN-CHECK TIMES

CMOS HHT INCHECK TIMES (in seconds)

Piece	Time (sec)
1	36.4
2	42.8
3	37.7
4	32.41
5	16.49
6	14.95
7	14.05
8	16.97
9	16.16
10	30.86
11	21.73
12	27.56
13	15
14	12.88
15	17.09
16	17.2
17	16.13
18	12.33
19	15.29
20	12.06
21	20.83
22	16.06
23	21.08
24	13.96
25	13.07
26	23.27
27	20.24
28	14.76
29	15.96
30	21.5
31	13.25
32	18.21
33	12.79
34	12.73
35	54.03
36	18.48
37	20.82
38	15.08

HHT In-Check Times (seconds)	
Mean	**20.32**
Standard Error	1.53
Median	16.73
Mode	#N/A
Standard Deviation	9.41
Sample Variance	88.54
Kurtosis	3.93
Skewness	1.97
Range	41.97
Minimum	12.06
Maximum	54.03
Sum	772.18
Count	38
Confidence Level (95.0%)	3.09

AFCSS MICAP SECTION WORKLOAD

As of 30 Sep 98 (includes 13 contingency sites, Langley, Offutt, & Beale)

*

BASE	TOTAL MICAPS	NEW	TEX 7	TEX M	DATE
PSAB	178	26	26	0	25-Aug
JABER	73	10	10	0	25-Aug
KEFLAVIK	15	1	1	0	25-Aug
BRINDISI	5	1	1	0	25-Aug
ISTRIS	2	0	0	0	25-Aug
TAIF	3	1	1	0	25-Aug
TASZAR	9	2	2	0	25-Aug
AL DHAFRA	16	0	0	0	25-Aug
TUZLA	11	2	2	0	25-Aug
SubTot Deployed Units	312	43	43	0	25-Aug
OFFUTT	57	1	1	0	25-Aug
BEALE	23	1	1	0	25-Aug
LANGLEY	211	9	4	5	25-Aug
Total	**603**	**54**	**49**	**5**	**25-Aug**

*

BASE	TOTAL MICAPS	NEW	TEX 7	TEX M	DATE
PSAB	170	22	22	0	26-Aug
JABER	68	9	9	0	26-Aug
KEFLAVIK	15	1	1	0	26-Aug
BRINDISI	5	1	1	0	26-Aug
ISTRIS	2	2	2	0	26-Aug
TAIF	3	1	1	0	26-Aug
TASZAR	9	2	2	0	26-Aug
AL DHAFRA	16	0	0	0	26-Aug
TUZLA	11	0	0	0	26-Aug
SubTot Deployed Units	299	38	38	0	26-Aug
OFFUTT	58	14	7	7	26-Aug
BEALE	23	1	1	0	26-Aug
LANGLEY	219	10	4	6	26-Aug
Total	**599**	**63**	**50**	**13**	**26-Aug**

*

AFCSS MICAP SECTION WORKLOAD

BASE	TOTAL MICAPS	NEW	TEX 7	TEX M	DATE
PSAB	187	36	36	0	27-Aug
JABER	150	7	7	0	27-Aug
KEFLAVIK	17	2	2	0	27-Aug
BRINDISI	5	2	2	0	27-Aug
ISTRIS	2	0	0	0	27-Aug
TAIF	3	0	0	0	27-Aug
TASZAR	9	0	0	0	27-Aug
AL DHAFRA	7	0	0	0	27-Aug
TUZLA	11	0	0	0	27-Aug
SubTot Deployed Units	391	47	47	0	27-Aug
OFFUTT	57	7	4	3	27-Aug
BEALE	29	5	4	1	27-Aug
LANGLEY	221	0	0	0	27-Aug
Total	**698**	**59**	**55**	**4**	**27-Aug**

*

BASE	TOTAL MICAPS	NEW	TEX 7	TEX M	DATE
PSAB	156	14	14	0	28-Aug
JABER	157	12	12	0	28-Aug
KEFLAVIK	16	5	5	0	28-Aug
BRINDISI	5	0	0	0	28-Aug
ISTRIS	0	0	0	0	28-Aug
TAIF	2	0	0	0	28-Aug
TASZAR	9	0	0	0	28-Aug
AL DHAFRA	16	0	0	0	28-Aug
TUZLA	11	0	0	0	28-Aug
SubTot Deployed Units	372	31	31	0	28-Aug
OFFUTT	63	5	0	5	28-Aug
BEALE	22	1	1	0	28-Aug
LANGLEY	193	2	0	2	28-Aug
Total	**650**	**39**	**32**	**7**	**28-Aug**

*

BASE	TOTAL MICAPS	NEW	TEX 7	TEX M	DATE
PSAB	166	18	18	0	29-Aug
JABER	73	5	5	0	29-Aug
KEFLAVIK	23	7	7	0	29-Aug
BRINDISI	5	1	1	0	29-Aug
ISTRIS	1	0	0	0	29-Aug
TAIF	2	0	0	0	29-Aug
TASZAR	9	0	0	0	29-Aug
AL DHAFRA	15	0	0	0	29-Aug
TUZLA	10	0	0	0	29-Aug
SubTot Deployed Units	304	31	31	0	29-Aug
OFFUTT	56	2	1	1	29-Aug
BEALE	35	8	8	0	29-Aug
LANGLEY	183	6	6	0	29-Aug
Total	**578**	**47**	**46**	**1**	**29-Aug**

AFCSS MICAP SECTION WORKLOAD

TOTAL AFCSS MICAP SAMPLE					
BASE	TOTAL MICAPS	NEW *	TEX 7	TEX M	DATE
Total Deployed Units	1678	190	190	0	
Daily Avg Deployed Units	336	38	38	0	
Total OFFUTT	291	29	13	16	
Daily Avg Offutt	58	6	3	3	
Total BEALE	132	16	15	1	
Daily Avg Beale	26	3	3	0	
Total LANGLEY	1027	27	14	13	
Daily Avg Langley	205	5	3	3	
Sample Total	3128	262	232	30	
Avg Total Samples/ Day	626	52	46	6	

Avg Total Sample minus Avg New Starts/Day	626 - 52 =	**574**	**# MICAPs In-Work**
	574/626 =	**92%**	**% MICAPs In-Work**

* New = New Starts. The data in the "New" Start Column is already counted in the "Total MICAPS" Column. Hence, MICAPs worked on prior to this date are equal to "Total MICAPS" minus "New" Starts. New Start Column Data is a sum of Tex 7 plus Tex M data.

As Is versus To Be MICAP Process

Process	As Is Description	As Is # Key Strokes	To Be Description	To Be # Key Strokes	DIFF	To Be Percent Improved
Log-On to SBSS/MASS	Type in User Name & Password	Same	Type in User Name & Password	Same	0	0
Pull-up Requisitions	Sort/Highlight Requisitions Wanted then Press Print key	Same	Check Locations to pull from then press "Get Tex 7/Tex M" Button	Same	0	0
Check D035 Asset Availability	Call Automated DESEX- Select "Stock Availability" from Menu options, Type in the DoDAAC / SRAN (all alpha characters require 3 keystrokes each with phone keypad), Stock #	33	Highlight record, Press "D035Level/Req" button, Press "Login" button. Requires User Name and D035 Password the first time the User logs on that day.	3	30	91%
Requisition in D035- If still in Automated DESEX Phone Call	Press Two Menu Options to get to Depot MICAP Customer Service, then the Command MICAP Technician must tell the Depot MICAP Customer Service Technician all information for a new requisition, and the Depot MICAP Customer Service Technician must key in all 80 data elements.	82	After you ask for the Asset Level Availability from D035 (above), a "Stock Level" window pops up showing what assets are on-hand at the depot. Highlight the asset you want, Press "Request" button, and the "D035 Item Request Form" pops up. Press "Request Item" button.	3	79	96%

As Is versus To Be MICAP Process

Process	As Is Description	As Is # Key Strokes	To Be Description	To Be # Key Strokes	DIFF	To Be Percent Improved
Requisition in D035- Call Automated DESEX Phone System *	Dial DSN phone#, Press Menu option for Depot MICAP Customer Service, then the Command MICAP Technician must tell the Depot MICAP Customer Service Technician all information for a new requisition, and the Depot MICAP Customer Service Technician must key in all 80 data elements.	90	After you ask for the Asset Level Availability from D035 (above), a "Stock Level" window pops up showing what assets are on-hand at the depot. Highlight the asset you want, Press "Request" button, and the "D035 Item Request Form" pops up. Press "Request Item" button.	3	87	97%
Generate a SPR to SBSS	Using MASS Tech goes two Tabs down to "Create Due-In Record" screen, Types in 14 digit Due-Out Document No.; one Tab down to SOS, types in 3 digit location code; one Tab down to Stock No., types in 13 digits; 3 Tabs down to Quantity, types in 5 digits;one Tab down to Requisition No., only has to type in last 8 digits; one Tab down to Demand Code, types in 1 digit, 4 Tabs down to Hour Code, types in 1 digit; 2 Tabs down to Priority, types in 2 digits; one Tab down to RDD, types in 3 digit code; 2 Tabs down then clicks okay.	68	After you Requisition Asset from D035 (above), a "SBSS Request" window pops up for any Off-Line Requisiton (any 9000 requisition No.) . Press "Submit" button.	1	67	99%

As Is versus To Be MICAP Process

Process	As Is Description	As Is # Key Strokes	To Be Description	To Be # Key Strokes	DIFF	To Be Percent Improved
Check D035 Requisition Status- Through Automated DESEX	Call Automated DESEX- Select "Check Status" from Menu options, Type in Requisition # (alpha characters require 3 keystrokes each with phone keypad).	28	Highlight record, Press "D035 Status" button, Press "Login" button. (Only requires User Name and D035 Password be typed in the first time the User logs on that day.)	3	25	89%
Check D035 Requisition Status- Call Item Manager Directly using DSN *	Call Item Manager by phone using 9 digit DSN. Frequently busy and must re-dial.	9	Highlight record, Press "D035 Status" button, Press "Login" button. (Only requires User Name and D035 Password be typed in the first time the User logs on that day.)	3	6	67%
Check DLA Shipping Status	Tech clicks on Web Server, Clicks to goto approprite DLA Web site address, types in Requisition No., then clicks to retreive status information.	17	Highlight record, Press"DLA Ship Status" button.	2	15	88%
Produce PowerPoint Charts of Requisition & Status Data	Manual Process	Not Available	Click on what data to display, Click on "Tools" from the menu bar, Click on which Graph is required.	3	No Compare	No Compare
TOTAL		228		12	216	95%

* All Column Totals exclude these rows since it is already included in a previous row.
Can be accomplished either way, but not both.

As Is versus To Be MICAP Process

Process	As Is Description	As Is # Key Strokes	To Be Description	To Be # Key Strokes	DIFF	To Be Percent Improved
			Highlight record, Press "D035			
Check D035 Requisition Status- Call Item Manager Directly using DSN *	Call Item Manager by phone using 9 digit DSN. Frequently busy and must re-dial.	9	Status" button, Press "Login" button. (Only requires User Name and D035 Password be typed in the first time the User logs on that day.)	3	6	67%
Check DLA Shipping Status	Tech clicks on Web Server, Clicks to goto approprite DLA Web site address, types in Requisition No., then clicks to retreive status information.	17	Highlight record, Press"DLA Ship Status" button.	2	15	88%
Produce PowerPoint Charts of Requisition & Status Data	Manual Process	Not Available	Click on what data to display, Click on "Tools" from the menu bar, Click on which Graph is required.	3	No Compare	No Compare
TOTAL		228		12	216	95%

* All Column Totals exclude these rows since it is already included in a previous row.
Can be accomplished either way, but not both.

Current & Future MICAP Keystroke Savings

Process	As Is # Key Strokes	To Be # Key Strokes	DIFF	To Be Percent Improved	As of 30 Sep 1998 Approx. Keystrokes Saved/Day	As of 31 Dec 1999 Approx. Keystrokes Saved/Day
Log-On to SBSS/MASS	Same	Same	0	0	0	0
Pull-up Requisitions	Same	Same	0	0	0	0
Check D035 Asset Availability	33	3	30	91%	1560	11184
Requisition in D035- If still in Automated DESEX Phone Call	82	3	79	96%	4108	29451
Requisition in D035- Call Automated DESEX Phone System *	90	3	87	97%	4524	32434
Generate a SPR to SBSS	68	1	67	99%	3484	24978
Check D035 Requisition Status- Through Automated DESEX	28	3	25	89%	10045	75026
Check D035 Requisition Status- Call Item Manager Directly using DSN *	9	3	6	67%	2411	18006
Check DLA Shipping Status	17	2	15	88%	6027	45016
Produce PowerPoint Charts of Requisition & Status Data	Not Available	3	No Compare	No Compare	No Compare	No Compare
TOTAL	228	12	216	95%	25224	185654

* All Column Totals exclude these rows since it is already included in a previous row.
Can be accomplished either way, but not both.

As of 30 Sep 98- includes 13 contingency sites, Langley, Offutt, & Beale	
If 70% of the AFCSS Daily Avg for Total MICAPS are worked per day	402
Plus, All New Starts are worked each day	52
As of 30 Sep 98 Total Estimated MICAP Actions Worked/Day	454

As of 30 Sep 98: AFCSS had 626 Active MICAPS per day

52 of these (8%) were New Starts and 574 (92%) were MICAPs Already In-Work (Non-New Starts)

As of 30 Sep 98: ACC had Approximately 4,660 Active MICAPS per day Across All Locations

373	Estimated New Starts as of 31 Dec 1999 AFCSS Will Work (8% of 4660)
4287	Estimated Already In-Work (non-New Starts) as of 31 Dec 1999 AFCSS Will Be Working (92% of 4660)

As of 31 Dec 99- includes 13 contingency sites & 19 Centralized Bases	
If 70% of AFCSS's Estimated 31 Dec 1999 non-New Starts are worked per day	3001
Plus, All AFCSS's Estimated 31 Dec 1999 New Starts are worked per day	373
As of 31 Dec 1999 Total Estimated MICAP Actions Worked/Day	3374

As Is MICAP Processing Times

# Sample	DEPOT	NSN	Check Asset Avail or Status w/ Telnet to D035 (Sec)	A0A/A0E/A 01/A05	DESEX Call In Requisition (Sec)	STATUS	Input SPR into SBSS w/ MASS (Sec) *
1	FLZ	5895-01-413-9798	35	A0A	120	B/O	
2	FLZ	5996-01-345-1134	15	A0A	45	B/O	
3	FHZ	1650-01-018-9089	60	A0A	150	BA	35
4	FLZ	5895-01-410-8359	52	A0A	180	B/O	
5	FHZ	6610-01-223-8179	78	A0A	210	B/O	
6	FLZ	5865-01-287-6182	38	A0A	120	B/O	
7	FFZ	6130-01-308-6187	45	A0A	300	B/O	
8	FFZ	5998-01-331-6940	25	A0A	120	B/O	
9	FHZ	1650-01-018-9089	40	A0A	660	BA	36
10	FLZ	5996-01-345-1134	-	A0A	10	B/O	
11	FLZ	5895-01-410-8359	-	A0A	60	B/O	
		Total D035	388		1975		71
		Avg D035	43		180		36

# Sample	DEPOT	NSN	Check Asset Avail or Status w/ DESEX (Sec)	A0A/A0E/A 01/A05	DESEX Call In Requisition (Sec)	STATUS	Input SPR into SBSS w/ MASS (Sec) *
1	S9C	4730-01-144-6344	45	A0E	300	BA	35
2	S9E	5935-01-029-6425	50	A0E	240	BA	34
3	S9I	5330-01-015-6889	45	A0A	300	B/O	
4	S9I	5310-01-060-1420	40	A0A	300	B/O	
5	S9C	2930-01-435-2616	40	A0E	420	BA	
6	S9G	1680-01-053-9320	35	A0E	300	BA	
7	S9G	5995-01-193-2524	40	A0E	180	BA	
8	S9G	5995-01-194-5615	30	A0E	180	BA	
9	S9E	5930-01-029-4130	35	A0E	360	BA	
10	S9C	2910-01-291-5902	40	A0E	420	BA	
		Total DESEX	400		3000		69
		Avg DESEX	40		300		35
		Total Sample	788		4975		140
		Avg Sample	41		237		35

*** SPR Sample Times do not correspond to the specific NSN, just efficiency of display**

Current & Future MICAP Wrapper Time & Dollar Savings

Process	As Is Execute Time (Sec)	To Be Execute Time (Sec)	Time DIFF (Sec)	To Be Percent Improved	As of 30 Sep 1998 Approx. Time Saved/Day (Sec)	As of 30 Sep 1998 Approx.$ Saved **** Per Day	As of 30 Sep 1998 Approx.$ Saved **** Per Year	As of 31 Dec 1999 Approx. Time Saved/Day (Sec)	As of 31 Dec 1999 Approx. $ Saved **** Per Day	As of 31 Dec 1999 Approx. $ Saved **** Per Year
Log-On to SBSS/MASS	Same	Same	0	0	0	$0	$0	0	$0	$0
Pull-up Requisitions	Same	Same	0	0	0	$0	$0	0	$0	$0
Check D035 Asset Availability-Through Automated DESEX	41	3	38	93%	1976	$10	$2,601	14166	$74	$18,644
Check D035 Asset Availability Status- Through Telnet *	43	3	40	93%	18152	$11	$2,737	14912	$78	$19,625
Requisition in D035- If still in Automated DESEX Phone Call	180	5	175	97%	9100	$48	$11,976	65240	$341	$85,861
Requisition in D035- Call Automated DESEX Phone System *	300	5	295	98%	15340	$80	$20,189	109976	$575	$144,736
Generate a SPR to SBSS	35	1	34	97%	1768	$9	$2,327	12675	$66	$16,681
Check D035 Requisition Status-Through Automated DESEX	40	3	37	93%	14867	$78	$19,566	111038	$580	$146,135
Check D035 Requisition Status-Call Item Manager Directly using DSN ***	237	3	234	99%	94021	$491	$123,739	702243	$3,669	$924,204
Check D035 Requisition Status-Through Telnet *	43	3	40	93%	16072	$84	$21,152	120042	$627	$157,984
Check DLA Shipping Status	55	2	53	96%	21295	$111	$28,026	159055	$831	$209,328
Produce PowerPoint Charts of Requisition & Status Data **	Not Available	3	No Compare	No Compare	No Compare	No Compare	No Compare	No Compare	No Compare	No Compare
Print, E-Mail, or Export to File Data in Various Formats,e.g., Excel, PowerPoint, Text **	Not Available	4	No Compare	No Compare	No Compare	No Compare	No Compare	No Compare	No Compare	No Compare
TOTAL	351	14	337	96%	49006	$256	$64,495	362175	$1,892	$476,649

* All Column Totals exclude these rows since an alternate method with less key strokes is also presented in the table and already included in the totals

** All Column Totals exclude these rows since there is no current As Is comparison

*** All Column Totals exclude this row since after checking status by automated sources, calling IM is still the last source

**** Dollar Savings are calculated using E-5 rates from SAF/FMBOP FY98 Military Rates Per Unit of Time - Air Force Based on FY 1999 President's Budget, in AFI 65-503 Table A20-1, 27 Feb 98

Current & Future MICAP Wrapper Time & Dollar Savings

As of 30 Sep 98- includes 13 contingency sites, Langley, Offutt, & Beale	
If 70% of Existing MICAPs In-Work are worked /day	402
Plus, All New Starts are worked each day	52
Total Average Active MICAPs AFCSS Worked/Day	454

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As of 30 Sep 98: ACC had Approximately 4,660 Active MICAPS per day Across All Locations

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As of 31 Dec 99- includes 13 contingency sites & 19 Centralized Bases	
If 70% of Estimated MICAPs In-Work are worked/day	3001
Plus, All Estimated New Starts are worked each day	373
Total Estimated Active MICAPs AFCSS will Work/Day	3374

Appendix D

Appendix D

SUBJECT MATTER EXPERTS

The following personnel provided subject matter expertise as needed.

HQ ACC:

Paul Balint	Command Sys Database Analyst	TSgt	HQ ACC/LGSSS	DSN 574-6575
David Belue	Supt. Retail Sales	MSgt	HQACC/LGSIP	DSN 574-7817
Dave Budzinski	Supply Plans & Programs	CMSgt	HQ ACC/LGSIP	DSN 574-7817
Patricia Cisneros	Cmd Traffic Mgmt. Supv	MSgt	HQ ACC/LGTT	DSN 574-2639
Stephen Dawson	Plans, Policies and Procedures	LtCol	HQ ACC/LGQP	DSN 574-5502
John Duncan	Command LGS Web Admin	TSgt	HQ ACC/LGSS	DSN 574-6575
Jim Guest	Supply Plans and Programs	Civ	HQ ACC/LGSI	DSN 574-7819
Allen Gwartney	Traffic Management Section Chief	Capt	HQ ACC/LGTT	DSN 574-2639
John Huntzinger, Jr.	Supp Plans & Progs Branch Chief	LtCol	HQ ACC/LGSI	DSN 574-7106
Don Izbicki	Traffic Management Flight	Civ	HQ ACC/LGTT	DSN 574-2639
Pete Mooy	Maintenance Mgmt & Training	Col	HQ ACC/LGQ	DSN 574-3793
Bill Root	Product Improvements	SMSgt	HQ ACC/LGQP	DSN 574-2072
Joe Walls	Traffic Management	CMSgt	HQ ACC/LGTT	DSN 574-2639

Air Force Contingency Support Squadron (AFCSS):

Helen Baxley	Supt, MICAP Centralization	MSgt	AFCSS/LGM	DSN 574-3491
Brian Bowen	NCOIC MICAP Spec Mission Cell	TSgt	AFCSS/LGSWM	DSN 574-3491
Curt Driggers	AFCSS Commander	LtCol	AFCSS/CC	DSN 574-7226
Scott Earnst	MICAP Team	SSgt	AFCSS/LGSWM	DSN 574-34391
Michael Garris	Computer Operations	TSgt	AFCSS/LGSPC	DSN 574-3803
Ray Goodwin	Quality and Analysis	MSgt	AFCSS/LGSP	DSN 574-1378
Robert Hunt	Supt, MICAP Team	MSgt	AFCSS/LGSWM	DSN 574-3491
Rodney Kent	Application Developer	SSgt	AFCSS/LGSPC	DSN 574-3803
Danny Kritzer	MICAP Centralization	TSgt	AFCSS/LHSWM	DSN 574-3491
Hal Lare	Computer Operations	MSgt	AFCSS/LGSPC	DSN 574-3803
Les Parnacott	Supply Manager	Civ	AFCSS/LGSA	DSN 574-7226
Steven Ruggerio	Supt, Material Control	MSgt	AFCSS/LGSPS	DSN 574-4994
Henry Whitaker	MICAP Team	TSgt	AFCSS/LGSWM	DSN 574-3491

1st Fighter Wing:

John Culpepper	Commander, 1st Logistics Group	Col	1LG/CC	DSN 574-4068
Frank DeLuca	Commander, 1st Logistics Group	Col	1LG/CC	DSN 574-4068

1st Supply Squadron:

Steven Coy	Mat'l Storage & Distro Flight	1Lt	1SUPS/LGSD	DSN 574-2336
Mary Demmin	CRS Engine Shop	SSgt	1SUPS/LGSCE	DSN 574-0731

Jerris Ealy	NCOIC, Pickup & Delivery	MSgt	1SUPS/LGSDP	DSN 574-5276
David Graves	Chief of Supply	LtCol	1SUPS/CC	DSN 574-2201
James Hallada	Quality & Training Supt	MSgt	1SUPS/LGSPT	DSN 574-5865
Penny Hammero	HAZMART	MSgt	1SUPS/LGSDH	DSN 574-3837
Rosalyn Harmon	COSO Supt	CMSgt	1SUPS/LGSC	DSN 574-0070
Joseph Heeb	COSO Chief	Capt	1SUPS/LGSC	DSN 574-5620
Robert Hill	Stock Control	CMSgt	1SUPS/LGSD	DSN 574-2336
Pierre Marcellus		SMSgt	1SUPS/LGSPP	DSN 574-5135
Tim Martin	Mgmt & Systems Office Chief	Civ	1FW/LGSP	DSN 574-4751
Tony Montilla	Quality Assurance	SrA	1SUPS/LGSPT	DSN 574-5865
Bob Pappas	Deputy Chief of Supply	Civ	1SUPS/CC	DSN 574-3638
Carl Robinson		TSgt	1SUPS/LGSCS	DSN 574-0068
Roger Schall		TSgt	1SUPS/LGSCA	DSN 574-5696
T. J. Spann	Chief of Supply	LtCol	1SUPS/CC	DSN 574-2201
Billy Triggle	CRS Engine Shop	MSgt	1SUPS/LGSCE	DSN 574-4292

1st Transportation Squadron:

Paul Albert	Chief of Transportation	LtCol	1TRNS/CC	DSN 574-7607
Joseph Lehman	OS & D Clerk	Civ	1 TRNS/LGTTP	DSN 574-4563
Kenneth Patterson	Cargo Movements	MSgt	1 TRNS/LGTT	DSN 574-0064
Emilio Trevino	Flight Chief, Traffic Mgmt	Civ	1TRNS/LGTT	DSN 574-5171
Wyman Young	Outbound Freight	Civ	1TRNS/LGTT	DSN 574-7108

Appendix E

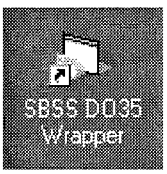
Appendix E

User Instructions for the SBSS/DO35 Program

The following is a brief description of the steps involved in using the SBSS/DO35 "Wrapper" software developed by Intergraph Corporation, for Langley AFB/ACC use.

Starting the Program

Locate the SBSS/DO35 Icon on the desktop and "double click" that icon.



Main Window

When you launch the wrapper you will see the main MICAP Automation window which contains the Request Form subwindow (see **Figure 1**). The Request Form subwindow is where most of the item processing takes place.

On the left side of the Request Form subwindow is a column of action buttons. These buttons are used to perform actions on the items. The grid in the middle of the form contains a view into the current "local" database that contains a list of MICAP items. At the top of the window is a group of boxes (*Document Number, RID, TEX Type, Stock Number, Action*) containing a detailed view of the currently selected item in the grid.

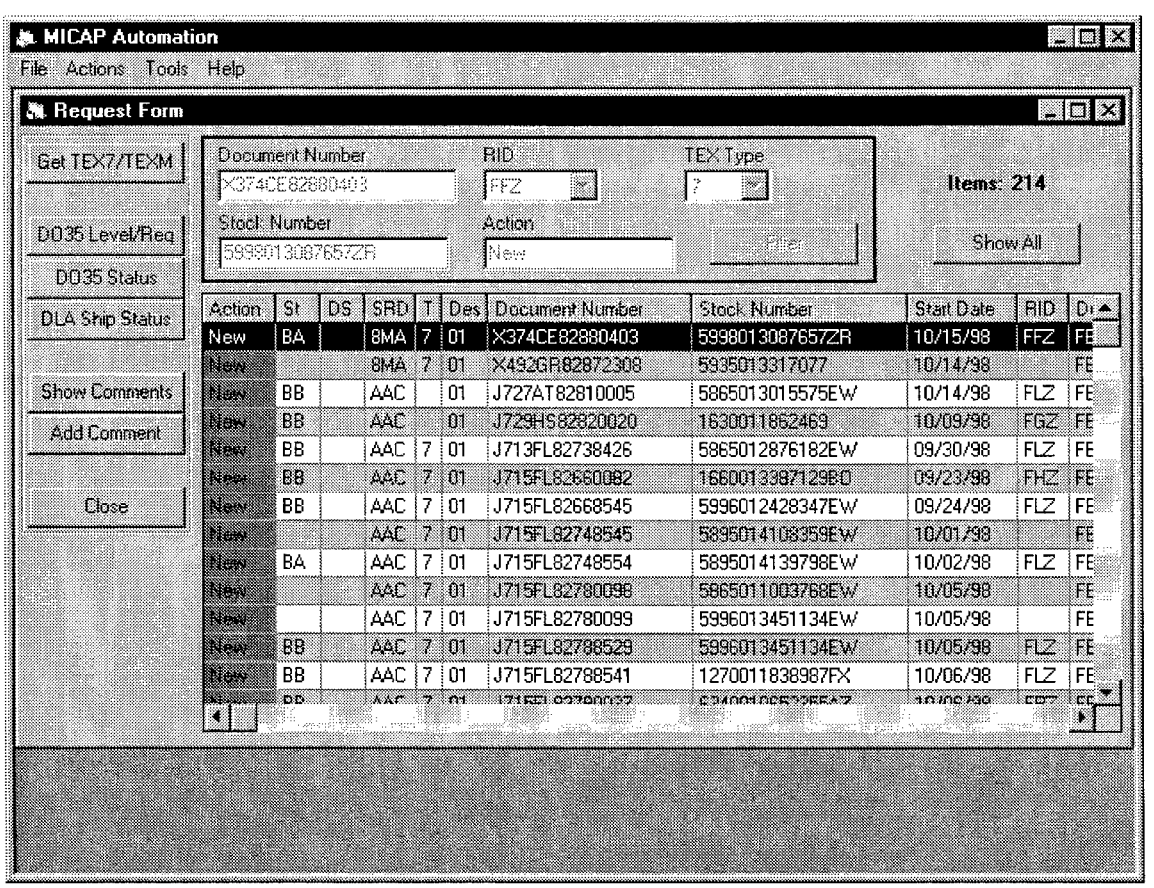


Figure 1 – MICAP Automation main window with the Request Form subwindow

You can resize both the MICAP Automation window and the Request Form subwindow to the size you prefer (see **Figure 2**).

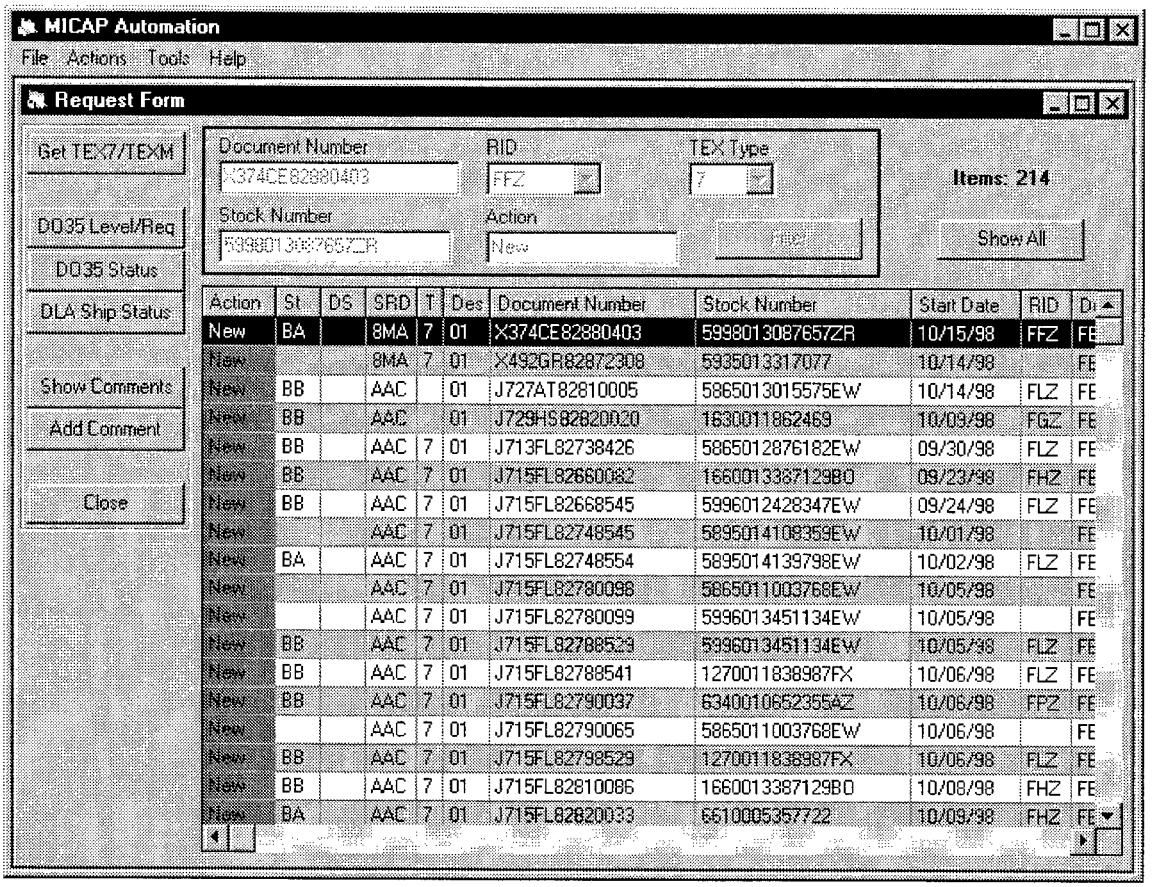


Figure 2 – Resized MICAP windows

Action Buttons

Get TEX7/TEXM

The Get TEX7/TEXM button is used to update the local database with the current list of TEX7s and TEXMs from the SBSS systems.

When you click this button the SBSS Login form is displayed. This form has a list of check boxes on the left and a group of username/password text boxes on the right (see **Figure 3**). You use the check boxes to select the SBSSs that you wish to pull the TEX7s and TEXMs from.

When you select an SBSS by clicking its checkbox, the corresponding username/password text box on the right will be enabled and its label will turn blue to indicate that you will be pulling items from that SBSS.

After you enter a username and password for all of the selected SBSSs, click the Login button. The wrapper pulls over the latest TEX7s from the selected SBSSs. This can take several minutes for each SBSS.

You can exit from this form without connecting to any of the SBSSs by clicking the Cancel button.

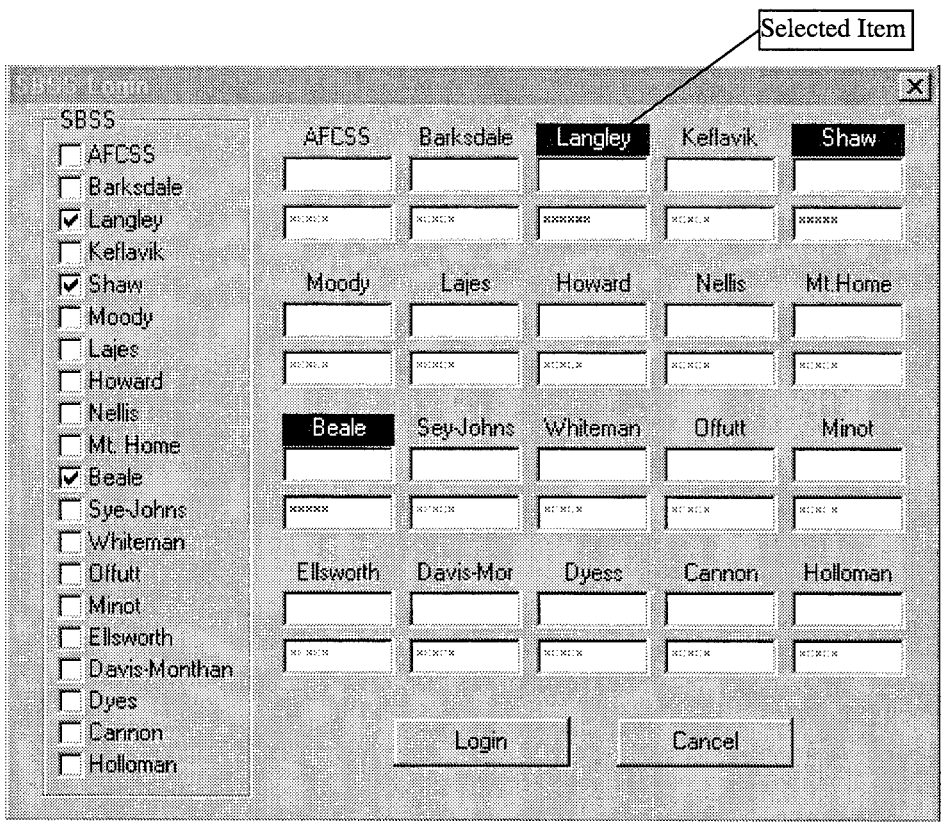


Figure 3 – SBSS Login form

Filter

The Filter feature is used to find an item or items of interest. It filters the list of items displayed on the Request Form according to your specifications.

You filter the list by selecting the label of a criterion field, which enables the corresponding text box or dropdown list, and turns the label blue. You then enter or select the criterion for the search (see **Figure 4**) and press the Filter button. Once the operation has completed, only the items matching the criterion you specified will be listed in the grid.

If you select multiple criteria, filtering will occur using a logical AND between all of them. This means the resulting list will consist of only those items which satisfy *all* specified criteria.

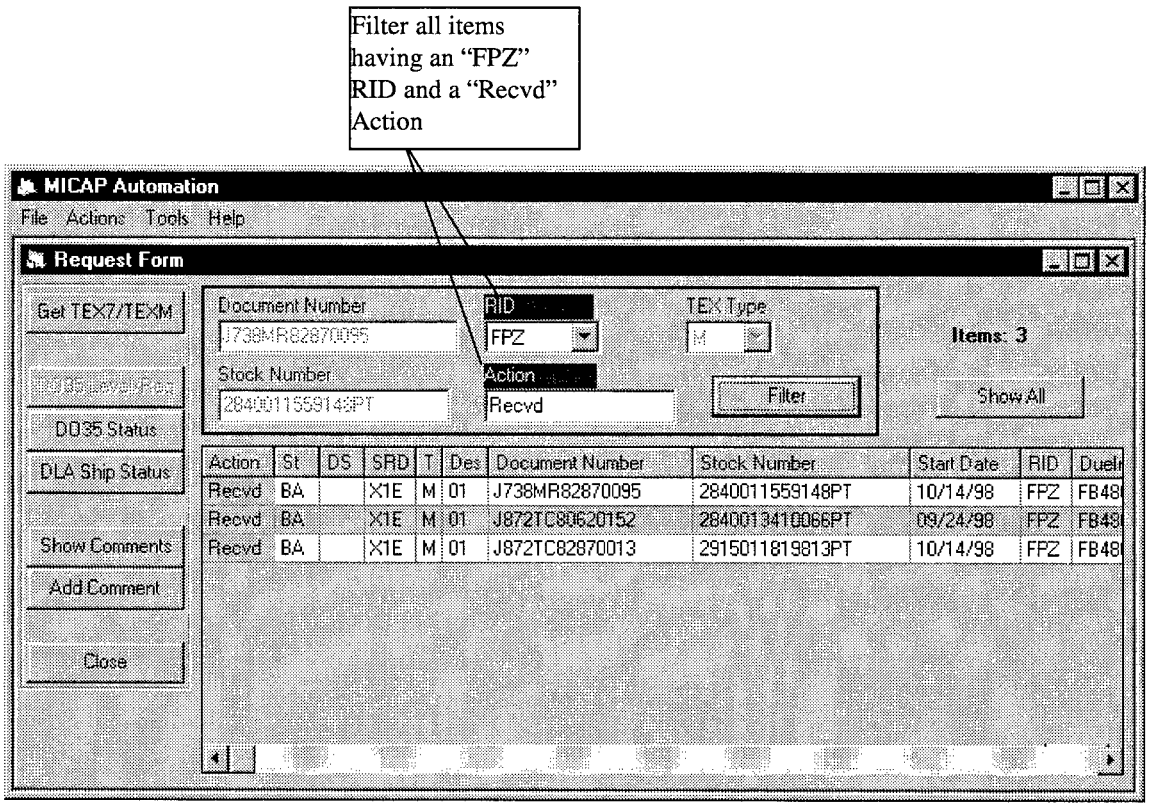


Figure 4 - Using the Search capability

Show All

The Show All button is used to populate the grid with all the TEX7s and TEXMs. If you have used Filter, which will likely shorten the list, you can use the Show All button to redisplay the entire list again.

DO35 Level/Req

The DO35 Level/Req button is used to check the availability of an item from the DO35 database, and then possibly requisition it.

Select an item with a status of "New" in the grid. Click on the DO35 Level/Req button. This brings up the DO35 Login form for the appropriate DO35 system, based on the DO35 code (see **Figure 5**).

When the user enters the username/password and hits the Login button the wrapper will connect to the DO35 system and check the supply level. If there is a positive level then a dialog box will pop up indicating the Source, Condition, and Quantity available. (Current capability allows for access to WR-ALC only. Access and permissions for other sites are forthcoming.)

The Action column for a given item can change from New → Req → Recvd. When the user has requisitioned the item the Action will change from New to Req. When the item is given a Stop Date in SBSS, its Action will change from Req to Recvd.

After the requisition is made the wrapper may perform an SPR back to DAAS (supplying usage, history, etc.) An SPR is generated only if an offline requisition is rerequisitioned or if an unprocessed item is requisitioned for the first time. In both these cases, the item would have a Due-In-Document-Number ending in 9000 or higher.

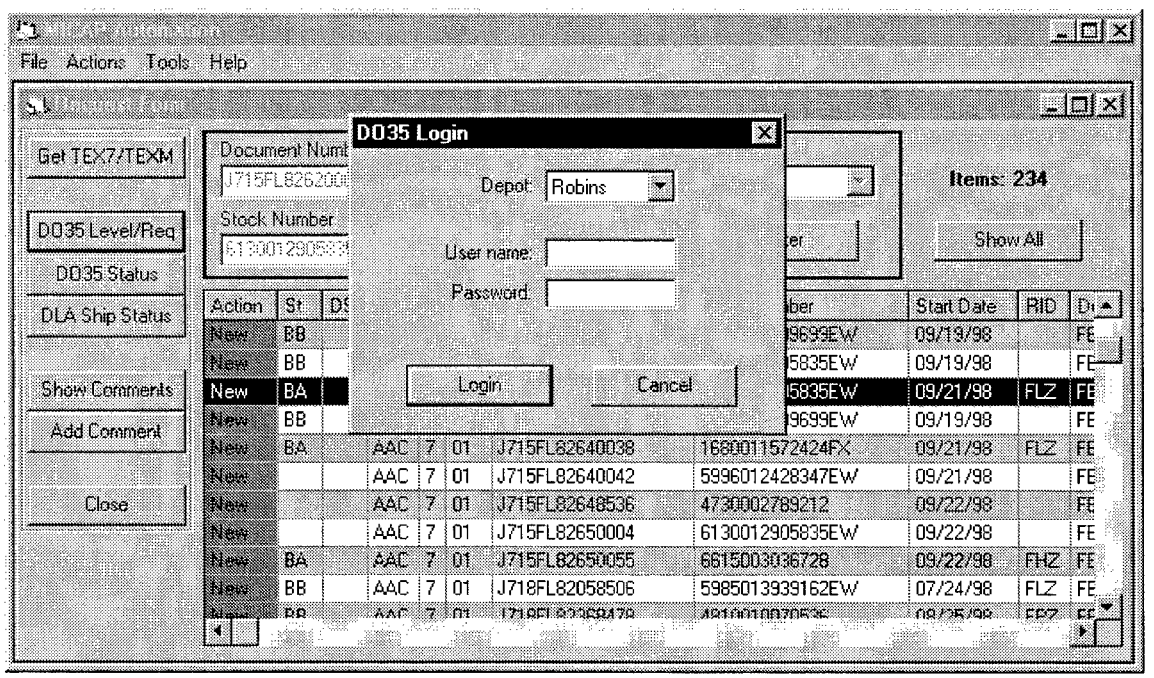


Figure 5 – DO35 Login form

DO35 Status

This button updates the status (the "DS" column) of the current item by checking the DO35 system.

Add Comment

This button allows you to add a comment for the selected item.

Show Comments

This button allows you to view the comments for the selected item.

DLA Ship Status

This button opens up a web browser. It then queries the DSS Requisition Tracking web site, using the currently selected item as the criterion (see **Figure 6**).

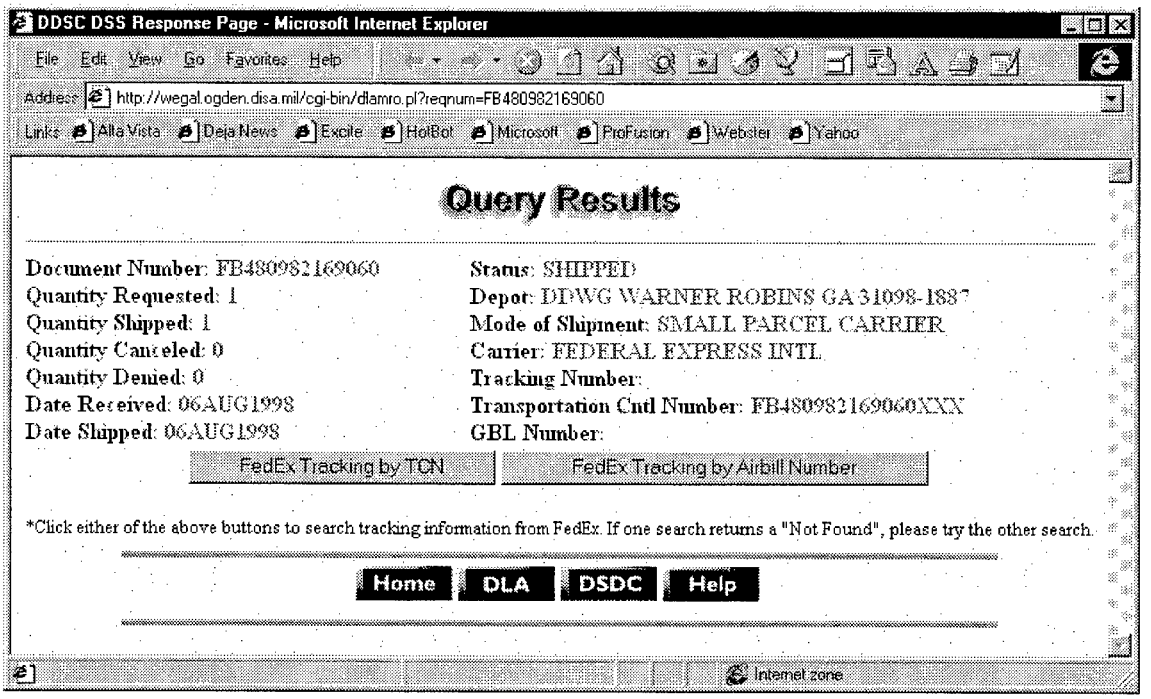


Figure 6 – Querying the DSS Requisition Tracking web site

Print

The Print feature is available under the "File" pulldown menu. It provides a formatted report of all the data or a selected subset of the data in the local MICAP database.

After selecting an Action on which to filter (**Figure 7**), a preview window (**Figure 8**) appears. From the preview window, the report can be printed, emailed, or exported by selecting the appropriate icon.

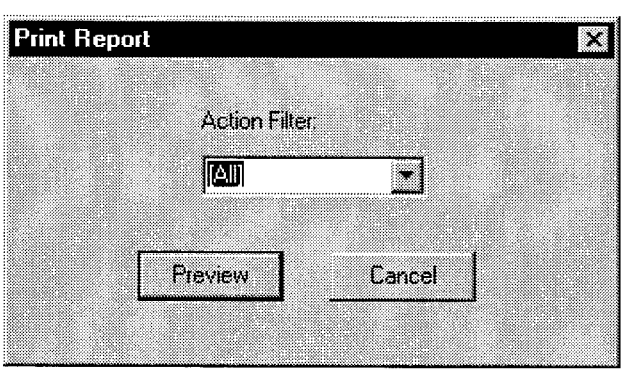


Figure 7 – Print Filter dialog

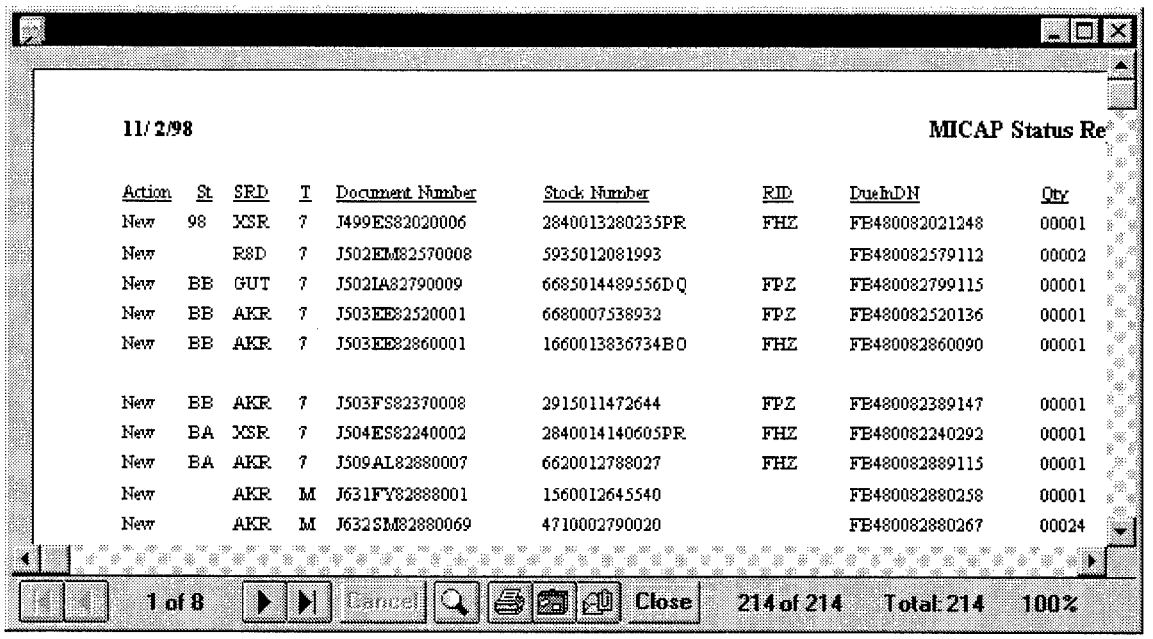


Figure 8 – Report Preview window

Graphs

Two graphs are available from the "Tools" pulldown menu.

Selecting "Display Age Graph" shows the age of the MICAP items broken down by age categories (see **Figure 9**). Selecting "Display Status Graph" shows the MICAP items broken down by status within each SRD category (see **Figure 10**).

Both graphs are based on the currently displayed set of data rather than the full local database, so filtering can be used to visually examine different data groups.

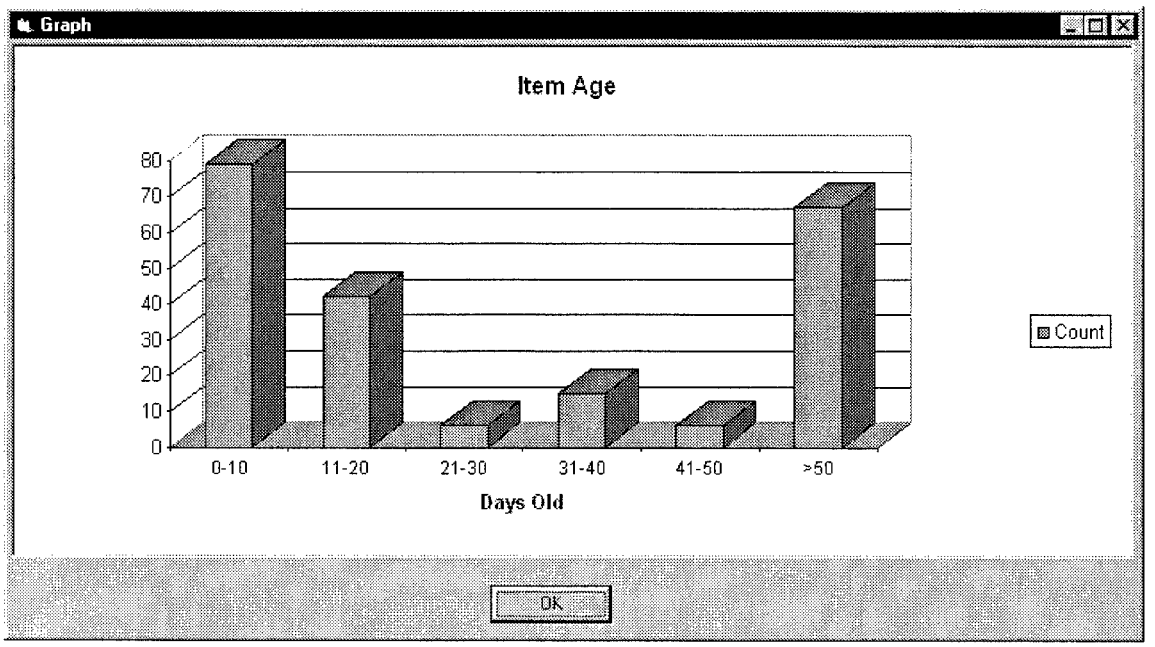


Figure 9 – Item Age graph

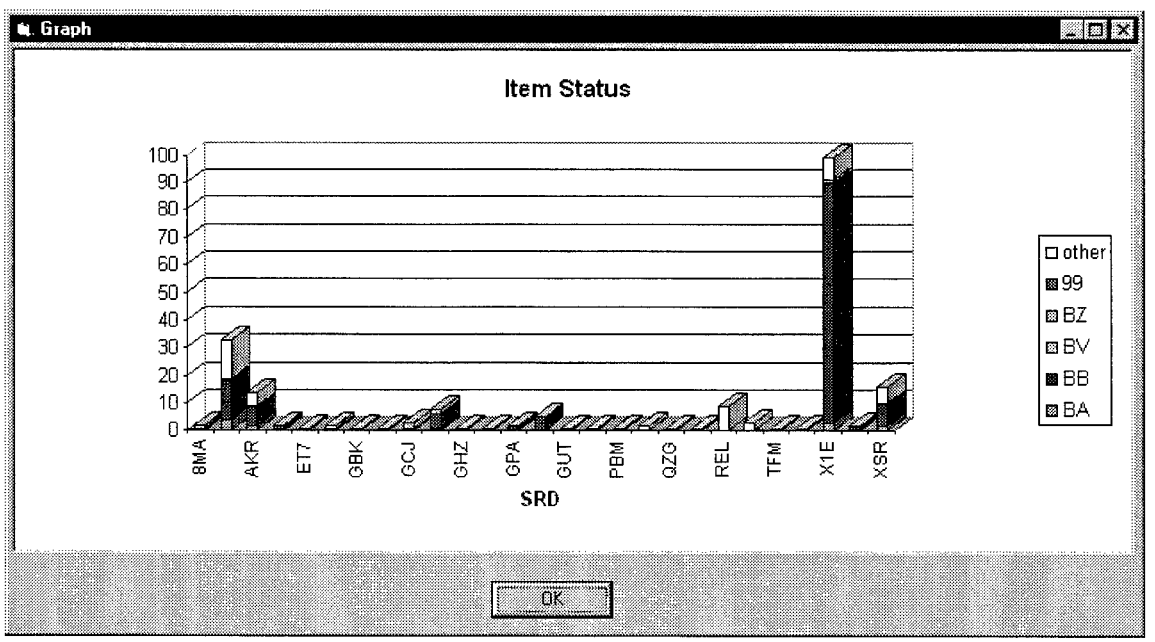


Figure 10 – Item Status graph

Close

This closes the Request Form subwindow. To exit from the MICAP Automation window as well, select Quit from the File pulldown menu.

REPORT DOCUMENTATION PAGE

FORM APPROVED
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave Blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	December 1998	Final Report - Volume I

4. TITLE AND SUBTITLE
USAF Logistics Process Optimization Study, Volume I

5. FUNDING NUMBERS

6. AUTHOR(S)
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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Air Force Logistics Management Agency/LGM
501 Ward Street
Maxwell AFB, Gunter Annex AL 36114-3236

8. PERFORMING ORGANIZATION REPORT NUMBER
LM199731101

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
HQ USAF/ILM
1030 Air Force Pentagon, Washington, DC 20330-1030

10. SPONSORING/MONITORING AGENCY REPORT NUMBER
Contract GS35F4155D

11. SUPPLEMENTARY NOTES
Phase I was completed and published by Intergraph Corporation in a separate 2-volume set:
Volume 1, USAF Logistics Asset Sustainment As-Is Process Report, and Volume 2, As-Is Models.

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

12b. DISTRIBUTION CODE
A

13. ABSTRACT (Maximum 200 Words)
This USAF Logistics Process Optimization Study for the Aircraft Asset Sustainment Process -- Phase II Report is the second in a series of technical reports prepared under AFLMA Project LM9731101. It is published as three separate volumes.

Volume I, "USAF Logistics Process Optimization Study for the Aircraft Asset Sustainment Process -- Phase II Report," discusses the result and cost/benefit analysis of testing three initiatives at Langley Air Force Base as possible solutions to several findings discussed in the Phase I Report, USAF Logistics Asset Sustainment As Is Process.

Volume II, "To Be Models," contains the To-Be Retail Asset Sustainment Process Model displaying the activities and functions related to the improved processes for receipt, storage, issue and delivery of materiel as tested at Langley Air Force Base, Virginia.

Volume III, "Future Retail Aircraft Asset Sustainment Process Models," contains a discussion of the Reengineering Team's efforts in the development of a logistics process model for a more distant future asset sustainment scenario unconstrained by today's logistics information systems limitations. It also contains a process model reflecting the Reengineering Team's vision of the future asset sustainment process.

14. SUBJECT TERMS	15. NUMBER OF PAGES
Logistics, reengineering, process, model, aircraft, asset, sustainment, optimization, IDEF, As-Is, To-Be	188
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	