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An Electronic Commerce Strategy for MTMC's Guaranteed Traffic Program

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The Military Traffic Management Command's (MTMC's) Guaranteed Traffic (GT) program will grow substantially over the next several years. This report offers a strategy to streamline the GT program using automated systems and electronic data interchange technology. It recommends that MTMC accept transportation rates from commercial carriers via the American National Standards Institute ASC (Accredited Standards Committee) X12 data standards and VAN (value-added network) communications services. Those rates would then be processed using a customized MTMC computer system. By automating the GT program, current MTMC personnel should efficiently handle the increased workload.

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Executive Summary

AN ELECTRONIC COMMERCE STRATEGY
FOR MTMC'S GUARANTEED TRAFFIC PROGRAM

In 1979, the Military Traffic Management Command (MTMC) initiated the guaranteed traffic program to procure freight transportation services. Under that program, MTMC solicits rates from carriers to satisfy specific movement requirements. Although more than 40 percent of all Defense shipments move as guaranteed traffic, that percentage is expected to increase to 90 percent as the Defense Logistics Agency, a strong proponent of guaranteed traffic, assumes primary responsibility for materiel distribution throughout the Department of Defense.

The MTMC Inland Traffic Negotiations Division currently processes more than 100 guaranteed traffic rate solicitations each year. Those solicitations result in carriers submitting over 8,500 detailed and complex tender bids for MTMC to evaluate and use as a basis for making over 2,000 tender awards. Each guaranteed traffic solicitation and award takes between 6 and 9 months to complete primarily because of the time that MTMC needs to check, evaluate, and distribute the associated paperwork.

We believe that MTMC can significantly streamline and improve its guaranteed traffic operations by building upon its success in receiving and processing voluntary tenders electronically. The electronic operating concept we propose incorporates new ways of doing business using electronic bulletin boards for distributing solicitations and "sealed" electronic mailboxes for receiving bids. To speed the development and implementation of that concept at the lowest possible risk and cost, we recommend that MTMC develop a prototype system. We further recommend that MTMC develop the prototype in three phases. In Phase I, MTMC should focus on automating the evaluation and award process, using electronic data interchange (EDI) techniques to receive guaranteed traffic tenders from commercial carriers, evaluate those tenders, and print tender awards for distribution to carriers, Defense shippers, and the General Services Administration, among others. As a first step in automating that process, we have designed simplified rate filing formats and

identified the modifications necessary to accommodate those formats in existing EDI standards.

In Phase II, we recommend that MTMC automate the solicitation with the aid of electronic bulletin boards, the compliance checks of all tender bids, and the distribution of tender award information. These actions should substantially enhance MTMC's guaranteed traffic solicitation and award process.

In Phase III, we recommend that MTMC complete the automation of its guaranteed traffic solicitation and award process by electronically transmitting the information now contained in the solicitation cover letter using EDI standards. With the completion of Phase III, MTMC will electronically solicit guaranteed traffic tenders from carriers, receive and evaluate the carriers' bids, and notify the winning carriers and others of the awards.

We believe that by automating its guaranteed traffic program, MTMC will reduce its costs; shorten the time to solicit, evaluate, and award guaranteed traffic tenders; and increase the number of guaranteed traffic awards. Such automation also will enable MTMC to do business more effectively in the changing Defense environment and to be more responsive to customer needs.

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CHAPTER 1

INTRODUCTION

The Military Traffic Management Command (MTMC) is currently modernizing many of its transportation information systems, particularly those focused on improving business operations. One of the key techniques that MTMC has singled out for emphasis is electronic data interchange (EDI).

BACKGROUND

One of the primary responsibilities of MTMC's Inland Traffic Negotiations Division (MT-INN) is to develop transportation rates for Department of Defense (DoD) traffic. Through the voluntary tender program, motor, barge, rail, and air carriers submit rates for all types of DoD shipments. In contrast to the voluntary submission of rates, MT-INN solicits tenders from carriers to meet a specific movement requirement. Those solicitations, made through the guaranteed traffic (GT) program, now account for more than 40 percent of Defense shipments and are expected to increase to 90 percent when the Defense Logistics Agency (DLA) assumes full operational responsibility for materiel distribution within DoD.

The processing and awarding of GT solicitations is a time-consuming and paper-intensive operation, one which could be substantially improved through the application of EDI and other information systems technologies. MTMC already has successfully applied those techniques to enhance its voluntary tender program, and we believe it could build upon that experience and capability to upgrade the GT solicitation and award process. In this report, we examine that solicitation and award process and propose a strategy for using EDI and other computer software systems to automate the GT program.

ORGANIZATION OF THE REPORT

In Chapter 2, we briefly describe the organizational structure of MT-INN and then discuss in detail its procedures for developing, competing, evaluating, and awarding GT solicitations. Chapter 3 follows with an electronic concept of operations for the GT process. It breaks that process into four distinct steps: presolicitation,

solicitation, evaluation, and award. For each step, we describe how EDI and other advanced automation techniques could enhance that process. Chapter 4 concludes by presenting an implementation plan for MT-INN to upgrade its GT rate solicitation process, building upon a three-phased prototype system.

CHAPTER 2

GUARANTEED TRAFFIC OPERATING PROCEDURES

This chapter describes MT-INN's procedures for processing GT solicitations. We begin with an overview of MT-INN, then we identify the key documents that it processes. We conclude with a discussion of MT-INN's processing procedures.

ORGANIZATIONAL STRUCTURE

The MT-INN is divided into three branches, each responsible for negotiating GT agreements for moving unique commodity groups. The Classification Branch, INNC, handles ammunition and other special commodities; the General Commodities Branch, INNR, moves regular commodities for the Military Services; and the Special Services Branch, INNS, supports DLA and the Navy, air contracts, and other special moves (such as base closures and office moves). Each branch employs 11 or 12 people. Combined, they process more than 8,500 tender bids and distribute approximately 2,000 effective tenders annually (see Table 2-1). Appendix A provides a more detailed breakout of the workload shown in Table 2-1.

TABLE 2-1

NUMBER OF GUARANTEED TRAFFIC SOLICITATIONS AND TENDERS

(1990 – 1991)

Branch	Number of solicitations developed	Number of solicitations mailed	Number of tender bids received	Number of noncompliant tenders	Number of effective tenders distributed
Classification	9	301	409	12	110
General Commodities	38	2,027	3,569	53	593
Special Services	64	3,909	4,790	219	1,327
Total	111	6,237	8,768	284	2,030

KEY DOCUMENTS

In the processing of GT solicitations and tenders, MT-INN handles four primary documents: the *Volume Movement Report* (VMR), Department of Defense (DD) Form 1085; solicitation letter; the *Department of Defense Standard Tender of Freight Services*, Military Traffic (MT) Form 364-R; and the *Uniform Tender of Rates and/or Charges for Transportation Services*, Optional Form 280. Each document has a specific application within the GT solicitation process. Those applications are described in the following section.

GUARANTEED TRAFFIC PROCESS

The GT business practice consists of four separate steps. First, a DoD shipper submits a traffic movement requirement to MT-INN, which then develops a GT solicitation to satisfy that requirement. Second, MT-INN advertises the solicitation and mails it to carriers who ultimately return their proposed rates in the form of tender bids. Next, MT-INN evaluates the tender bids to determine the carriers offering the lowest cost rates. Finally, MT-INN awards the traffic to the carrier offering the lowest cost rates; it also publishes and distributes those rates as GT tenders. This section describes each of these processes in detail.

Presolicitation

The GT process begins when a DoD installation traffic office (ITO) submits a DD Form 1085 or another VMR to MT-INN in which it requests a domestic routing for a specific shipping requirement. A shipping requirement is considered a candidate for GT if it exceeds either 500,000 pounds per year or 25 truckloads per year, or qualifies as a specialized movement under other criteria. MT-INN uses the VMR as the basis for developing a GT solicitation. That solicitation contains all the necessary information for carriers to develop a response to meet the shipping requirements. It includes a cover letter that provides carrier prequalification criteria, method of evaluation, satisfactory service requirements, submission instructions (including dates), and points of contact. It also contains a rate filing section, either MT Form 364-R or Optional Form 280, that carriers eventually use to respond to the solicitation in the form of a tender bid.

The MT Form 364-R consists of eight sections: three cover administrative information and five optional sections enable carriers to file rates under different

movement categories. In an examination of 25 GT solicitations, we found that all used the three administrative sections and three of the rate-filing sections: D for point-to-point rates, E for territorial rates, and F for protective and accessorial services.

The MT-INN also uses Optional Form 280, a General Services Administration (GSA) document, to establish GT agreements. This form duplicates much of the first three sections of MT Form 364-R; however, the design of the rate filing section is left to the discretion of the ITO and MT-INN negotiator.

After analyzing the VMR data, the MT-INN negotiator determines which tender form to use for rate-filing and completes the rate-filing section (either MT Form 364-R or Optional Form 280) with information describing the lane(s) of traffic and the corresponding movement requirement for each. Eventually, the negotiator will use this information to compare carrier bids.

The MT-INN may host prebid meetings, particularly for large continental United States (CONUS) solicitations. The presolicitation process, which can take from 1 to 6 months depending on the complexity of the movement requirements, results in a document called a GT solicitation for rates.

Solicitation

The solicitation documents are distributed to carriers identified by the ITO, advertised in the *Commerce Business Daily*, and published in the American Trucking Association weekly bulletin. For resolicitations, MT-INN places an announcement in the *Commerce Business Daily* and distributes the new solicitation letter to prior respondents.

In responding to a solicitation, the carrier completes the administrative sections with the pertinent carrier information and the rate-filing section with its rates. The completed document is then returned to MT-INN as a tender bid.

The MT-INN must receive all bids on or before the solicitation closing date that is specified in the solicitation package. Each carrier submits two copies of its completed tender bids in a sealed envelope marked with the solicitation file number MT-INN dates and time-stamps the bids as they are logged in. The log shows the carrier's name, date and time of receipt, and the name of the MT-INN employee who received the bid. Each tender bid (up to 80 individual tenders may be submitted for a

large solicitation) requires an accompanying independent pricing certificate. When the bids are received prior to closing, they are locked in a safe until the bid "opening meeting."

Periodically, the ITO, MT-INN, or a carrier may identify an inconsistency in the solicitation package, which then requires MT-INN to issue an amendment to the solicitation. The amendment package includes a letter that lists all additions, changes, or deletions to the solicitation and a copy of all updated pages. Some amendments may either delay the bid closing or result in MT-INN canceling the solicitation. Additionally, the Office of the Judge Advocate General, MTMC, requires MT-INN to obtain from all carriers a written acknowledgment that they received the amendment package.

The opening meeting is usually held on a Friday afternoon, the day after closing. At that meeting, MT-INN opens the sealed tender bids and checks off the receipt log. It also distributes one copy of each bid for review and photocopying by all carriers. (Carriers are now bringing copy machines to the opening meetings.) After all bids have been publicly reviewed, MT-INN collects the copies, adjourns the meeting, and begins the evaluation process. The solicitation process can consume 2 weeks for a specific point-to-point requirement and up to 30 days for a more extensive CONUS agreement.

Evaluation

The evaluation process begins immediately following the bid opening. MT-INN personnel perform a manual edit to ensure that each bid complies with the formats and requirements specified in the solicitation. Bids that fail these initial edits are determined noncompliant and sent to the Office of the Judge Advocate General for a final decision on compliance. The Office of the Judge Advocate General may either reject the bid or return it to MT-INN for further consideration. No negotiation or best and final offers are permitted.

All bids found to be in compliance are subjected to a price evaluation to determine which carrier has offered the lowest cost service to the Government. MT-INN uses the LOTUS 1-2-3 to perform the price evaluation of each bid. The program factors the carrier's proposed rate and shipper's requirements (evaluation factors) into price evaluation equations, which generate an estimated total tender cost for each carrier. Each carrier is then ranked according to the total cost of its bid.

LOTUS 1-2-3 also produces bid abstracts that contain all bids and a final ranking of bidders.

After the price evaluation is complete, MT-INN checks the Carrier Qualification Program, which is managed by MTMC's Freight Services Division, to verify that each remaining carrier has the proper insurance, operating authority, equipment, and safety qualifications. MT-INN also checks an internal list to determine if each carrier meets MTMC's performance standards. Carriers failing either of these checks are disqualified.

The carrier that meets all administrative compliance checks and offers the lowest total cost is designated the "primary carrier" and awarded the traffic on the solicitation. The next two low-cost carriers are designated first and second alternates for the solicitations. The evaluation process occurs between the issue date (date of opening) and the effective date (date of award) and is always scheduled to take 30 days regardless of the number of solicitation responses. However, processing noncompliant tenders can delay award up to 2 weeks.

On occasion, the ITO may request an incidental change or "supplement" to the solicitation. A supplement, made with the consent of the carriers, can include changes such as new routing points, different tender dates, new tender commodities, and new equipment types. If the carriers agree to the supplement, MT-INN makes the necessary changes to the tenders. If the carriers do not agree to the changes, the solicitation is distributed as originally negotiated.

Award

The final step in the GT process is the official notification of award to the three low-cost carriers. MT-INN prepares a letter to all responsive carriers announcing the primary, first-alternate, and second-alternate carriers for each lane of traffic on the solicitation. A copy of the award letter is sent to the ITO, the Military Service or Defense agency sponsoring the shipments, and the appropriate MTMC Area Command. In the rare instance of a tie, the primary carrier is decided by drawing numbers from a hat.

To complete the award notification process, MT-INN sends a message to the appropriate MTMC Area Command requesting that it set up a Standing Route Order (SRO) for each DoD region the GT agreement covers. The MTMC Area Command in

turn sends a copy of the SRO to all shippers listed in the GT solicitation. The ITO includes the SRO number on each GT Government bill of lading that it creates. MT-INN also sends a copy of all awarded tenders to the MTMC Area Command, GSA, and Navy Material Transportation Office (NAVMTO). Finally, MT-INN makes three copies of the LOTUS 1-2-3 abstract report and distributes them to the originating ITO and to MTMC's public file for carrier review. It also puts a copy in its files. The distribution of solicitation award materiel may take up to 3 weeks.

SUMMARY

The MT-INN manually evaluates and awards thousands of GT tender bids each year following well-established, paper-based procedures. After tracking 25 different solicitations through those procedures, we believe that substantial improvements are possible, principally through additional computer automation and use of commercial EDI standards. In the next chapter, we present a concept of operations that applies such technology to the processing of GT rate solicitations.

CHAPTER 3

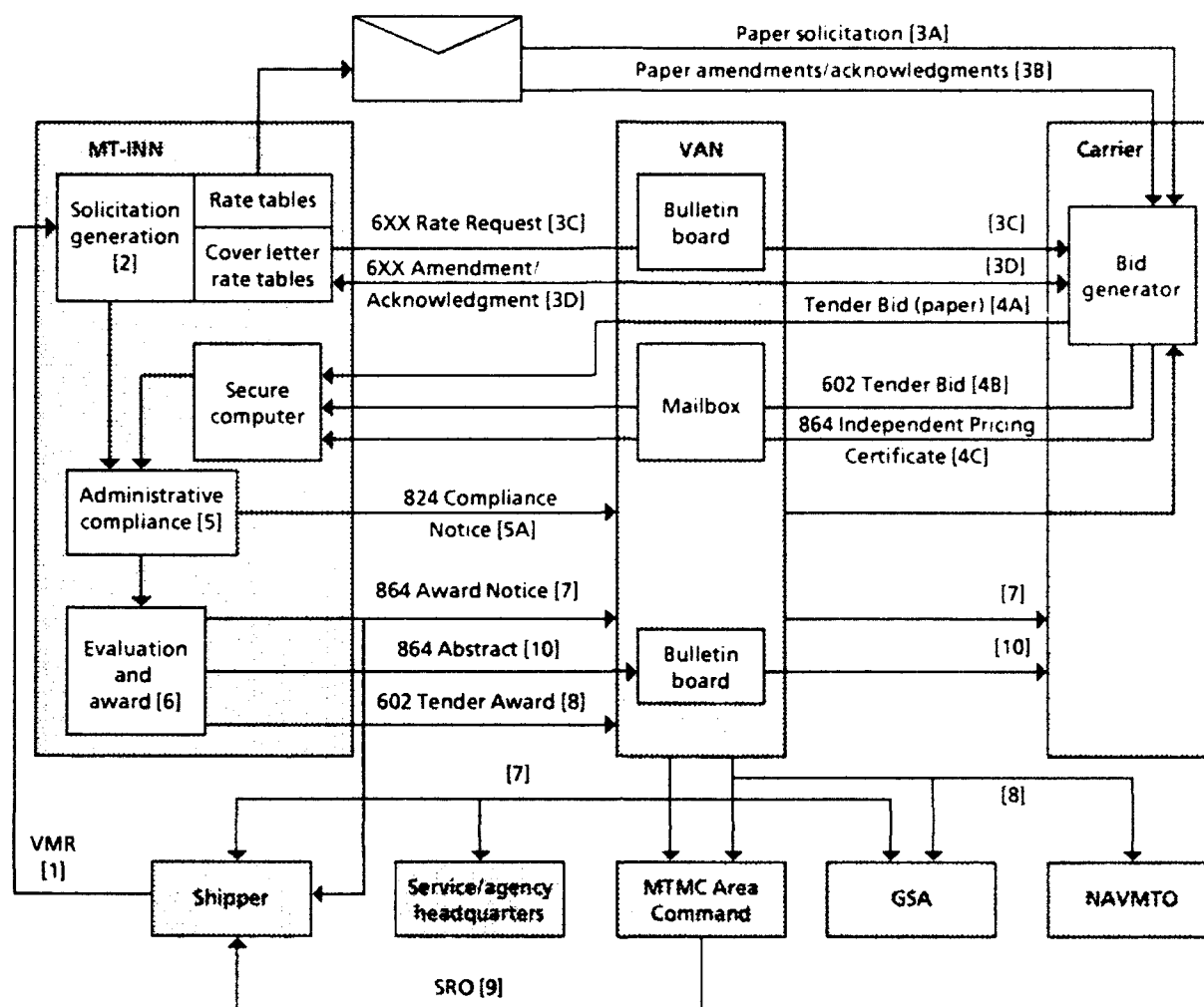## AN ELECTRONIC OPERATING CONCEPT
FOR GUARANTEED TRAFFIC

INTRODUCTION

Each GT solicitation for rates that MT-INN processes requires hundreds of hours of personnel time and up to 9 months to prepare, distribute, evaluate, and award. By automating its current manual processes, substituting electronic transmissions for paper documents, and introducing new business procedures, MT-INN can streamline a labor-intensive process, shorten the solicitation life cycle, and ultimately reduce its costs of conducting business along with those of commercial carriers. Further, the time is right for such improvements — commercial electronic standards exist [MTMC already uses the American National Standards Institute Accredited Standards Committee (ASC) X12 602 Transaction Set for voluntary tenders]; electronic bulletin boards and sealed mailbox technologies are available in the private sector; and many commercial freight carriers are capable of conducting GT business electronically. In addition, we estimate that 90 percent of MT-INN's GT business could be processed electronically, primarily because DLA, DoD's largest shipper, is likely to dramatically expand its GT requirements due to increased supply depot responsibilities.

This chapter presents an electronic operating concept for GT solicitations and awards and highlights several issues that are key to implementing the concept.

ELECTRONIC CONCEPT OF OPERATIONS

In Chapter 2, we identified four steps in the GT process: presolicitation, solicitation, evaluation, and award. These steps are shown in the electronic operating concept in Figure 3-1. The data flows for each of those steps are described below.

FIG. 3-1. GUARANTEED TRAFFIC ELECTRONIC OPERATING CONCEPT

Presolicitation

The presolicitation step includes receipt of the VMR and generation of the solicitation package.

Receive Volume Movement Report

The CONUS Freight Management (CFM) system is automating the receipt of the VMR, shown as step [1] in Figure 3-1. Consequently, we propose that MT-INN maintain its current method of receiving VMRs until the VMR module of the CFM system is implemented.

Generate Solicitation

Automating the GT solicitation, step [2] in Figure 3-1, requires the development of an application system and various modifications to ASC X12 standards. In an electronic environment, a MT-INN negotiator would enter solicitation data into an automated system that formats an electronic solicitation in a ASC X12 standard format. The automated system also would be capable of creating and distributing amendments to the solicitation. Additionally, the system would pass an electronic copy of the solicitation to the compliance check system for use in the bid evaluation process.

The cover section of the solicitation contains mostly free-form, textual data, which are difficult to standardize. Consequently, we recommend that MT-INN initially automate only the rate section of the solicitation. (Appendix B presents our specific proposals for standard electronic rate tables in GT solicitations.) In Chapter 4, we describe a phased approach to developing an electronic standard and automation system for creating the entire solicitation package.

Because many carriers, particularly small carriers, will not have the capability to electronically receive and process solicitation packages for several years, MT-INN will need to maintain the capability to provide solicitation packages in either electronic or paper formats.

Solicitation

The second step in the GT rate solicitation process is the actual requesting of transportation rates from the carrier industry. This step involves three major data flows: distributing the solicitation, receiving the tender bid, and receiving the Independent Pricing Certificate. We discuss each of these data flows below.

Distributing Solicitation

As step [3C] in Figure 3-1 shows, an unspecified ASC X12 EDI standard for the solicitation package (labeled 6XX Rate Request) would be distributed using an electronic bulletin board available on existing commercial EDI value-added networks (VANs). MT-INN would transmit one copy of the electronic solicitation package to a VAN, which would place the solicitation on a bulletin board accessible to all interested carriers. Additionally, step [3A] in Figure 3-1 shows that MT-INN would create a paper solicitation from the system and distribute it following current

procedures. Amendments would be distributed following the same procedures and are shown as steps [3B] and [3D] in Figure 3-1.

Although electronic bulletin boards are available from a number of commercial sources, their application to transportation rate filing is new. Nonetheless, we believe that carriers with an existing EDI capability would be enthusiastic about receiving solicitations via electronic bulletin boards.

The average cost for producing and mailing a typical DLA GT solicitation is nearly $2,300 (see Appendix C), which does not include any labor costs for handling the packages. Using current average rates for VAN transmission and storage, we estimate that the cost of distributing that same solicitation through an electronic bulletin board would be approximately $840, less than 40 percent of the paper mailing costs. (The savings would even be larger if we included handling costs.)

Receiving Tender Bids

In the existing paper-based process, MT-INN receives tender bids via mail and places them in a locked safe. As steps [4A] and [4B] in Figure 3-1 show, this same basic procedure would be followed in an electronic environment. Our electronic operating concept would permit carriers to submit bids in two formats: electronically through VAN communications or on paper from non-EDI-capable carriers.

Commercial VANs provide an effective means for receiving tender bids. They offer high reliability and availability to their customers; they also have many layers of hardware and software security. For example, they use address synonyms that hide the physical destination of the data from the sender. Instead of using the mailbox address, a carrier would address a tender bid to "MT-INN." Also, VANs can verify the integrity of data files as they are passed through the network. Finally, tender bids could be electronically acknowledged by MT-INN when they are received from the carrier.

Another option for accepting tender bids is computer diskettes. However, we believe that diskettes introduce numerous information management problems due to their technical unreliability. Problems like incorrect disk types, improper formatting, and "corrupted" data files are common when exchanging diskettes. To overcome those types of problems, carriers would need to submit two copies of diskettes and possibly a printout that would be used to verify the intent of the

original copy. Also, MT-INN would have to load and print every diskette at the opening meeting when all tenders must be available for public viewing, a time sensitive and labor-intensive process. Furthermore, carriers submitting diskettes would not receive any electronic verification or acknowledgment that their bid was accepted.

Because tender bids contain competitive pricing data, carriers are concerned with the confidentiality of the information they provide to MT-INN, whether in paper or electronic format. To maintain carrier confidence in an electronic tender bid environment, MT-INN would need to periodically download their bids from the VAN directly into a secure computer, which would reside in an area that could be physically secured during nonworking hours. It also would need to issue passwords to all negotiators authorized to work on the system. Finally, all sensitive data files, like tender bids, would be further protected by encrypting their data bases, using commercial encryption software resident on the system. Data-encryption and authentication techniques could be used to further secure tender bid transmissions. These measures should provide a level of security acceptable to all trading partners. MT-INN would retain the manual security methods currently in use for those tender bids received in paper format.

For the DLA solicitation described in Appendix C, approximately 300 carriers responded with tenders. If all 300 sent their tenders through the VAN, MT-INN would incur a cost of $32.40 to retrieve those tenders from the VAN. Once retrieved, however, they would reside on the secure computer until the time of evaluation.

Receiving Independent Pricing Certificates

The Independent Pricing Certificate, shown in Figure 3-1 as step [4C], would be sent by the carriers to MT-INN using the ASC X12 864 Transaction Set. Although DoD regulations require a certificate for each tender bid, MT-INN would need to change those regulations and its business practices to allow carriers to maintain standing Independent Pricing Certificates on file with MTMC.

Evaluation

The evaluation of tender bids involves two steps: an administrative compliance check and a price evaluation. Both steps would be automated in an electronic environment.

Evaluating Compliance of Tender Bids

The MT-INN would need to develop an automated system, step [5] in Figure 3-1, to verify that electronically submitted tender bids are in compliance with its administrative requirements. That system would need the capability to accept electronic bids, edit them for completeness and accuracy, and either accept or reject them.

Under today's procedures, MT-INN evaluates bids for compliance after the opening date. This periodically results in the delay of tender award because noncompliant bids must be reviewed by MTMC's Office of the Judge Advocate General. We propose that MT-INN authorize electronic compliance checks of all bids submitted through VANs before the bid closing date. Carriers that elect to transmit their bids directly to the secure computer also should receive an administrative compliance notice in advance of the closing date.

However, conducting compliance checks on electronic bids prior to the closing date could be construed by the less automated carriers as an unfair business practice. Because most of those carriers are likely to be small businesses, MT-INN needs to be highly sensitive to this situation. One alternative *would be for* MT-INN to develop procedures for dealing with preclosing compliance checks of paper-based tenders. We believe that preclosing compliance checks eventually would reduce the number of noncompliant bids and increase the number of carriers participating in the final price evaluation process.

Following the automatic compliance check, the system would transmit an ASC X12 824 Compliance Notice, step [5A] in Figure 3-1, to carriers. That notice would identify both compliant and noncompliant bids and thereby allow carriers to correct and resubmit any noncompliant tenders. After the electronic compliance check, the bids would be returned to the secured computer where they would remain until opening day.

Evaluating Price of Tender Bids

After a tender bid has passed the administrative compliance check, the same computer system would automatically evaluate the bid, step [6] of Figure 3-1, ranking each tender according to its total evaluated cost. At this point in the process,

an MT-INN negotiator could supplement the tenders with additional administrative data, including dates, rates, and equipment types.

Automating this process would reduce the time it takes MT-INN to perform a price evaluation from weeks to hours, which would enable MT-INN analysts to spend more time developing new GT business.

Award

The award process entails three key data flows: award notice, awarded tender and abstract, and SRO. We describe each below.

Sending Award Notices

As shown in step [7] of Figure 3-1, the price evaluation system would create the award notice and transmit it to the public VAN for further distribution to the carriers, shipping activity, Military Service/agency headquarters, MTMC Area Command, and GSA. We believe that the ASC X12 864 Transaction Set could be used to transmit GT award notices. We estimate that the cost of MT-INN transmitting all award notices electronically for any solicitation would be less than $3.00 (each notice would cost approximately $0.09 to transmit), including all Government trading partners and an estimated 20 carriers per solicitation.

Sending Awarded Tender and Abstracts

The price evaluation system would generate copies of awarded tenders as ASC X12 602 Transaction Set and the pricing abstract as ASC X12 864 Transaction Set, Figure 3-1 steps [8] and [10]. It also would make the pricing abstract available to other interested parties on the VAN bulletin board for a limited time. Although this electronic operating concept includes transmission of pricing abstracts, MT-INN should consider changing its business practices to eliminate that data flow. That data would be readily available from MTMC's GT system.

As shown in Appendix C, we estimate that the cost of transmitting a tender would be approximately $0.09 per tender with the cost of making all abstracts available for 30 days on a bulletin board less than $840.00.

Issue Standing Route Orders

A MTMC Area Command would transmit, through the CFM system, the SRO to DoD shippers (step [9] in Figure 3-1). The CFM system also would provide online access to SROs for shippers with a direct link to the MTMC Area Commands.

SUMMARY

This chapter presents an electronic operating concept for processing and awarding GT solicitations. That concept identifies the key steps and data flows within the GT solicitation process that are candidates for automation and EDI. However, before MT-INN implements that process, it needs to resolve a number of issues, including the following:

- The MT-INN needs to assure the carrier industry that their electronic bids would remain confidential and secure until the solicitation opening date. To provide that assurance, it needs to examine alternative technical solutions that preserve tender bid security, select the best approach, and develop an information package that describes the electronic business procedures it will use with the carriers.

- The information requirements of GT solicitations, particularly the cover letter, need to be simplified and, if possible, standardized before EDI standards can be developed or modified. We believe that existing ASC X12 standards can be readily modified to accommodate the tender rate tables and other portions of the rate-filing section.

- The MT-INN needs to eliminate three paper-based steps: submission of Independent Pricing Certificates with every tender bid, public display of all tender bids on opening day, and distribution of tender abstracts after evaluation. We propose that MT-INN hold Independent Pricing Certificates on file and require the carriers to update them periodically. Because evaluated tenders would be generated from the GT system, we propose they replace the opening-day distribution of tender bids and the postevaluation abstracts. MT-INN should assess the effects of these changes on the carrier industry and, if negligible, formally propose such changes to MTMC's Office of the Judge Advocate General.

- The MT-INN needs to develop procedures for identifying noncompliant tender bids before closing dates. If all carriers used EDI to submit bids, many compliance problems would be eliminated. Additionally, by performing an automated compliance edit before bid closing, noncompliant carriers could resubmit their bids. We recommend that MT-INN and MTMC's Office of the Judge Advocate General determine if reviewing confidential bids for

compliance check prior to closing is permissible for electronic and paper tender bids.

- A key feature of the proposed electronic operating concept is the use of electronic bulletin boards to advertise solicitations and distribute the resulting notices and evaluation information. MT-INN needs to promote the use of this service to all commercial carriers and DoD customers.

Our proposed electronic operating concept will require MT-INN to change the way it conducts GT business, modify its relations with the carrier industry, and simplify and standardize many paper-oriented and free-form data requirements. We believe that these activities can best be accomplished through the development and testing of a prototype system. Use of a prototype offers a low-cost, low-risk approach to implementing the proposed electronic operating concept. It also allows MTMC to resolve regulatory, procedural, and policy issues and to finalize system design requirements for an eventual migration to the CFM system, and, when appropriate, mandatory electronic participation by commercial carriers. In Chapter 4, we present a three-phased approach to developing such a prototype, along with an implementation plan and timetable.

CHAPTER 4

PROTOTYPE IMPLEMENTATION STRATEGY

In Chapter 3, we present an electronic operating concept for conducting GT business, describe several outstanding issues that complicate implementation of that operating concept, and propose development of a prototype system for resolving those issues. In this chapter, we describe a phased approach for developing that prototype and detail an implementation plan for the first phase.

PHASED PROTOTYPE APPROACH

The development of a microcomputer-based prototype GT system will offer MT-INN a number of advantages including quick development, flexibility, low cost, and minimal risk. It also will yield design specifications for the production software that eventually will be embedded in the CFM system. Finally, it will provide MT-INN with an opportunity to test conducting GT business electronically. We propose that MT-INN, in Phase I of the prototype, automate much of the GT process while simultaneously resolving the outstanding issues. In Phase II, it will develop and implement the VAN bulletin board. MT-INN will complete the automation process in Phase III. We describe the composition of each phase in more detail below.

Phase I

In this phase, MT-INN, with assistance from the Logistics Management Institute (LMI), is implementing a prototype system that will establish a flexible foundation for further system enhancements. An overview of the major activities comprising this phase follows, along with a specific project plan for accomplishing them.

Presolicitation

We will develop software to aid MT-INN negotiators in the development of tenders for the solicitation package. That software will generate electronic copies of tenders and store them for use in the automated evaluation process; it also will create paper copies of rate tables for the solicitation package.

Solicitation

The information on the existing tender needs to be simplified and standardized before it can be transmitted using EDI standards. As part of the standardization process, we will propose changes to current EDI standards by submitting data maintenance requests to the ASC X12 Transportation Subcommittee. Because of the length of this change process, we will not address the use of electronic solicitations in this phase. MT-INN will continue to use paper solicitations until it completes Phase III. Nonetheless, the carriers will have the option to submit bids in ASC X12 formats through a VAN. The prototype will receive those bids and assure their security by using procedural and electronic protection methods, as required.

Evaluation

The prototype will accommodate data entry from tender bids submitted on paper. It will perform an automated compliance check on all bids and generate and transmit noncompliance notices when appropriate. That check will occur after the solicitation opening date. Finally, the software will evaluate the price of all compliant bids, rank the carriers according to prices, and generate a bid abstract of the entire evaluation process. The CFM system will then compare the winning GT tenders against existing voluntary tenders to determine if a final award should be made.

Award

We will develop software that prints award notices, awarded tenders, and tender abstracts.

Phase I Project Plan

The Phase I project plan, as shown in Figure 4-1, lays out a 14-month schedule for implementing a prototype electronic GT system. We estimate that the design specifications for the system should be completed in April, with the remaining time devoted to developing and testing the prototype.

Activity	1992											1993		
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1. Complete implementation plan														
2. Identify functional requirements														
3. Design GT*STEP system specifications														
4. Develop EDI standards and conventions														
5. Develop GT*STEP software														
6. Test and refine the GT*STEP software														
7. Establish telecommunications capability														
8. Establish trading partners														
9. GT*STEP prototype acceptance test														
10. Assess need for Phase II														

Note: GT*STEP = Guaranteed Traffic Standard Tender Processing system.

FIG. 4-1. GT PROTOTYPE PHASE I PROJECT SCHEDULE

1. Complete Implementation Plan

In this activity, MT-INN designated a project team comprised of representatives from the MTMC CFM office, LMI, and its own staff. This team reviewed and finalized the proposed GT project and identified additional activities that must occur.

2. Identify Functional Requirements

During this activity, we worked with MT-INN to identify all functions that needed to be incorporated into the Phase I prototype. We prepared a detailed functional specification that includes a step-by-step automated operating concept, a list of outstanding legal and business issues with accompanying action plans, and a detailed data requirement for use in the system specifications.

3. Design GT*STEP System Specifications

In conjunction with the project team, we developed the system specifications for Phase I to include identifying the hardware and software requirements; describing software inputs, processes, and outputs; and detailing the procedures for satisfying other system requirements such as telecommunications and translation of ASC X12 standards.

4. Develop EDI Standards and Conventions

Building upon the system specifications, we determined the ASC X12 standards modifications necessary to meet the data requirements of the GT solicitation process and then guided them through the normal ASC X12 maintenance process. We also developed rules for using the new standards and publish them in an EDI convention document. Finally, we developed an instruction manual and other documentation for distribution to MT-INN's trading partners.

5. Develop GT*STEP Software

In this activity, we will develop the software for the Phase I system in accordance with the specifications prepared in activities 3 and 4 and test the software with the aid of selected MT-INN negotiators. This activity also entails modifying MTMC's applications systems, developing a system users manual, and preparing procedures for trading partners to exchange GT information with MT-INN electronically.

6. Test and Refine the GT*STEP Software

In this activity, we will work with MTMC's VAN and carrier trading partners to test the system for efficiency and reliability. To allow for system corrections and modifications, we will begin software testing approximately halfway into development to ensure delivery of an accurate and reliable prototype.

7. Establish Communications Capability

In this activity, we will work with MTMC's VAN service provider to establish an EDI mailbox for receiving tender bids from carriers.

8. Establish Trading Partners

In this activity, MT-INN will identify carriers that may participate in the prototype, establish trading partner agreements with all interested parties, and provide the trading partners with the necessary technical and training documentation. MT-INN, aided by LMI, also will work with commercial software vendors to develop tender generation software for use by carriers in accordance with the conventions document prepared in activity 4. Because trading partner development is an ongoing activity, MT-INN should assign those responsibilities to a specific individual.

9. GT*STEP Prototype Acceptance Test

Upon completion of internal software testing, MT-INN monitors the operation of the Phase I prototype system primarily to determine its potential to serve as a production system. MT-INN will grade the system according to a list of acceptance criteria. This task will result in a test result summary containing recommendations and next steps for the program.

10. Assess Need for Phase II

In this activity, MT-INN will assess the success of the prototype and examine the feasibility of completing the second phase. Phase II activities are presented below.

Phase II

The primary thrust of Phase II is to develop and implement an electronic bulletin board for use in the GT solicitation process. Such a bulletin board would be used in the following manner.

Solicitation

To develop rules for each GT solicitation package, MTMC uses a commercial word processor. We will transmit those rules along with the Phase I rate tables to the VAN bulletin board, which the carriers would then use to prepare their bids.

Evaluation

If the Office of the Judge Advocate General approves preopening compliance checks of EDI tender bids, we will modify the Phase I software to perform that check. The modified software would automatically transmit an EDI notice to the carrier through the VAN as described in Chapter 3.

Award

In the GT solicitation process, this step produces three outputs: the award notice, awarded tender, and evaluation abstract. We will convert these to an electronic format and distribute them through the VAN according to the operating concepts described in Chapter 3.

Phase III

Building on the software developed in Phases I and II, we will modify that software to accommodate any new policies. We also will undertake a number of other enhancements, several of which are highlighted below.

Presolicitation

We will work with MT-INN to standardize the solicitation cover letter, modify the ASC X12 standards to accommodate it, and design and develop the software needed to produce it. The electronic solicitation package then would consist of all Phase I and II functions plus these enhancements.

Solicitation

We will upload the electronic solicitation package to the electronic bulletin board. That package would then remain available to the public for a specific time.

Evaluation

We will modify the evaluation software to incorporate any new policies in checking carrier compliance.

Award

Although no additional changes to the award process are anticipated, we may need to make some modifications to capitalize upon new opportunities.

SUMMARY

This chapter presents a three-phased approach to upgrading the MT-INN's GT rate solicitation and evaluation process. Phase I is key to the overall process of that approach because it includes several activities that are fundamental to automating MT-INN's procedures. To ensure the success of that phase, we provide a detailed project plan that MT-INN should be able to complete by April 1993.

APPENDIX A

GUARANTEED TRAFFIC VOLUME STATISTICS

This appendix presents the number of guaranteed traffic solicitations and tenders processed by the Military Traffic Management Command's Inland Traffic Negotiations Division (MT-INN) during 1990 and 1991. Table A-1 breaks out the solicitations and tenders by branch within MT-INN and by shipper service.

TABLE A-1

NUMBER OF GUARANTEED TRAFFIC SOLICITATIONS AND TENDERS

(1990 – 1991)

Branch and shipper service	Number of solicitations developed	Number of solicitations mailed	Number of tender bids received	Number of noncompliant tenders	Number of effective tenders distributed
INNC — Classification					
DLA	1	41	360	12	100
Air Force	1	40	6	0	2
Navy	7	220	43	0	8
Subtotal	9	301	409	12	110
INNR — General Commodities					
Army	16	645	1,586	27	163
DLA	5	254	1,413	6	144
Air Force	3	207	264	4	132
Navy	12	821	226	8	125
Marine Corps	2	100	80	8	29
Subtotal	38	2,027	3,569	53	593
INNS — Special Services					
Army	2	142	18	1	7
DLA	18	1,510	2,371	121	620
Air Force	13	586	124	1	35
DMA	3	197	35	6	14
Navy	25	1,160	229	18	145
Marine Corps	2	100	13	0	6
Other	1	214	2,000	72	500
Subtotal	64	3,909	4,790	219	1,327
Total	111	6,237	8,768	284	2,030

Note: DLA = Defense Logistics Agency; DMA = Defense Mapping Agency.

APPENDIX B

RATE TABLE DATA ANALYSIS

INTRODUCTION

This appendix presents the results of an analysis of 25 guaranteed traffic (GT) rate solicitations. Our objective in performing that analysis was to identify ways that the Military Traffic Management Command (MTMC) could simplify its procedures for soliciting competitive rates from carriers; we also sought to provide MTMC with more flexibility to meet future GT business requirements. We begin by briefly describing the scope and methodology of our analysis, then we address our results and conclude with three sample applications.

SCOPE

A GT solicitation consists of a cover letter and rate filing section.

The cover letter, which is in free-form text, introduces the solicitation. It describes the number of shipments, types of equipment requested, schedules, route information, and rules and guidelines pertaining to a specific shipper requirement. The carriers base their bids upon the requirements presented in the cover letter.

The rate filing section consists of tables that the carriers use to offer their transportation rates. It repeats most of the requirements from the cover letter but in the form of rate tables.

When a carrier responds to a GT rate solicitation, it submits a tender of service that consists primarily of completed rate tables from the rate filing section. In our efforts to simplify and improve the rate solicitation process, we focused on tender formats.

METHODOLOGY

In our analysis, we reviewed the following:

- Actual GT solicitations

- GT Solicitation Abstracts (the results of the MTMC tender evaluation process)

- Standard tender forms: *Department of Defense Standard Tender of Freight Services*, Military Traffic (MT) Form 364-R; and *Uniform Tender of Rates and/or Charges for Transportation Services*, Optional Form 280

- Existing Department of Defense (DoD) conventions for the voluntary freight tender.

We also interviewed several staff members of MTMC's Inland Traffic Negotiations Division (MT-INN) who are experienced in all aspects of the guaranteed traffic process.

During these reviews and interviews, we

- Compared and classified physical characteristics of the sample solicitation rate sections

- Searched for common factors among the different rate sections and determined how those factors influence the rate structure ultimately selected

- Consolidated rate structures by standardizing terminology and simplifying their physical layout

- Applied existing price evaluation formulas to the consolidated rate structures

- Compared and consolidated the price evaluation formulas

- Tested the consolidated rate structures and evaluation formulas with other possible tender configurations that were not included in the source documents.

While performing this analysis, we ignored any constraints on the form and content of GT data imposed by the use of paper. Typically, those constraints do not exist in an electronic environment.

RESULTS

We began by examining each component of the GT rate solicitation: the cover sheet information, route description, and rate table. We found that the information presented in both the cover sheet and route description can be transmitted electronically using an existing electronic data interchange (EDI) standard. We also found that the rate table can be simplified and standardized. Our specific findings are presented below.

Cover Sheet

All data in the existing tender cover sheet can be translated to EDI standards using MTMC's rate filing conventions for voluntary tenders.

Route Description

Guaranteed traffic route descriptions can take one of three forms: point-to-point, point-to-region, and region-to-region. Each form can be easily described following existing MTMC's rate filing conventions. Using the guidelines already established for the voluntary tender, a route description can apply to one or more sets of rate tables.

Rate Table

A rate table is composed of one or more individual rates, an x-axis or column labels, a y-axis or row labels, and a title area that contains information applicable to all rates in the table. In the following subsections, we describe the components of rates and how groups of rates are used to build rate tables that satisfy all existing GT solicitations.

Rates

A single GT rate is usually accompanied by three component evaluation factors (see Table B-1). Two other factors carried in the header area of the rate table, a minimum charge and a minimum quantity, also are associated with a rate. We address those factors in the rate table descriptions.

The carriers use the evaluation factors to develop their rates. In turn, MT-INN uses those same factors to perform a price evaluation of the rates. Although most GT rate structures do not use every factor, they all must be accounted for in an electronic

TABLE B-1

RATE EVALUATION FACTORS

Evaluation Factors			Rate
Estimated Quantity	Mileage	Number of Equipment/ Trips	

process. Table B-2 lists the price evaluation factors and the rules for using them in an electronic environment.

TABLE B-2

PRICE EVALUATION FACTORS

Factor	Rule
Rate	Rate must be expressed as dollars and cents per unit indicated by the rate qualifier. If a rate is expressed in any other terms (i.e., percent of Class 100 rates), it must be converted before using the formulas.
Minimum Quantity	Always use one (1) for minimum quantity when a minimum does not apply. The minimum quantity must be expressed in the same units as the rate. For example, if the minimum quantity is expressed in pounds and the rate is per hundredweight, the minimum quantity must be divided by 100 before using the formulas.
Minimum Charge	If a minimum charge does not apply, use zero (0). The minimum charge must be expressed as dollars and cents per shipment. If it is expressed in any other terms (i.e., four pallets at the per pallet rate), it must be converted before using the formulas.
Estimated Quantity	If estimated quantity is zero (0), use the minimum quantity. The estimated quantity must be expressed in the same units as the rate (see minimum quantity example).
Mileage	Always use one (1) for mileage for non-"per mile" rate qualifiers. If midpoint miles are specified, mileage = (high miles + low miles)/2.
# Equip/Trip	This is the estimated number of pieces of equipment or number of trips. Use one (1) for this factor for "per type of equipment" rate qualifiers. If not one (1) then, (# Equip/Trip) = (Estimated Quantity) /(Minimum Quantity).

All GT rates can be expressed as a function of the price evaluation factors using a set of evaluation equations predetermined by an MT-INN negotiator.

Evaluation Equations

After examining all of the source rate filing sections and their corresponding evaluation equations, we derived a set of three equations for pricing each rate (see Table B-3). Using those equations and the rules presented in Table B-2, a MT-INN negotiator could calculate an estimated cost (the largest dollar amount obtained from the equations) for moving cargo under that rate. If a particular rate evaluation factor is not submitted, the rules prescribe a substitute value. The end result is that a GT tender consists of a group or "table" of rates.

TABLE B-3

PRICE EVALUATION EQUATIONS

Equation 1 = (#Equip/Trip)×(Minimum Charge)

Equation 2 = (Rate) × (# Equip/Trip)×(Minimum Quantity) ×(Mileage)

Equation 3 = (Rate)×(Estimated Quantity)×(Mileage)

Tables

Each rate table is framed by header information that applies to all rates in the body of the table. The header information includes the following:

- *Route Description.* The particular route to which the rate table applies.

- *Title.* The title, which frames the body of the rate table, defines the labels of the columns (minimum quantity breaks) and rows (mileage breaks).

- *Rate Qualifier.* The rate qualifier defines the unit of measure used to express a rate such as per hundredweight or per mile. MTMC has defined 15 rate qualifiers for use with the MT Form 364-R tender. Optional Form 280 tenders use five additional qualifiers. Table B-4 lists all 20 qualifiers.

- *Minimum Charge.* If a rate is found to be less than the minimum charge, then the evaluated cost is replaced with the minimum charge. This minimum charge is calculated using price evaluation Equation 1 for each rate in the table.

- *Minimum Quantity.* Each column of the table is labeled with a minimum quantity, which demarks the "breakpoint" quantity between two rates. This quantity is also calculated by price evaluation Equation 2.

TABLE B-4

RATE QUALIFIERS IN GT TENDERS

Rate Qualifier	Definition
BB	Per barrel
DH	Per hundredweight per dromedary service shipment
DL	Per dromedary service shipment
DZ	Per hundredweight per mile per dromedary service shipment
PC	Per rail car used
PG	Per gallon
PH	Per hundredweight
PJ	Per mile per vehicle moved
PL	Per vehicle used
PM	Per mile per vehicle used
PQ	Percent of Class 100
PV	Per vehicle moved
PY	Per gallon per mile
PZ	Per hundredweight per mile
ST	Per short ton
Z1 *	Per vehicle used per round trip
Z2 *	Per mile per vehicle used per round trip
Z3 *	Per loaded 463L pallet
Z4 *	Per special charge (such as stop off, disability, and constant surveillance service)
Z5 *	Per movement

Note: The type of special charge in Z4 must be qualified.

* New rate qualifier; for the purposes of this document, we assigned the Z1 through Z5 codes.

The body of the table contains rows and columns of individual rate cells together with their evaluation factor components. Each rate cell follows the format shown in Table B-1.

A rate table applies to a single type of rate offering for a specified lane (route) of traffic. A tender may combine different types of rate tables and include several copies of specific tables.

From our analysis of rate filing sections, we believe that MT-INN could replace the myriad of rate tables it receives from carriers with just three: a table of a single rate, a table of one row or one column of individual rates, and a table of rows and columns of individual rates. We describe each of these tables in more detail below.

GT Rate Table 1, Single Rate. This table, which corresponds to Section E – Table A and Section F of MT Form 364-R, would be used when a single rate applies to a specific route. Minimum quantities and mileage groups would not apply to this rate. Table B-5 shows the format of this table.

<div align="center">

TABLE B-5

GT RATE TABLE 1: SINGLE RATE

</div>

Evaluation Factors			Rate
Estimated Quantity	Mileage	Number of Equipment/ Trips	

GT Rate Table 2, Single Rate Per Minimum. This table would be used when a single rate applies to individual minimum quantity categories. At least one minimum quantity must be identified. The format of this table corresponds to Section D, Section D-1, Section E – Tables B and C, and Section E-1 of MT Form 364-R. Table B-6 presents a sample layout of this table.

GT Rate Table 3, Single Rate Per Minimum Per Mileage Group. This table would be used when a single rate applies to an individual minimum quantity category within a specified mileage group. At least one minimum quantity and one mileage group must be identified. The format of this table corresponds to Section E – Tables D, E, and F of MT Form 364-R. Table B-7 shows the structure of this table.

In the following section, we demonstrate the use of the three rate tables with actual data.

TABLE B-6

GT RATE TABLE 2: SINGLE RATE PER MINIMUM

Minimums											
A				B				C			
Evaluation Factors				Evaluation Factors				Evaluation Factors			
Estimated Quantity	Mileage	#Equip /Trip	Rate	Estimated Quantity	Mileage	#Equip /Trip	Rate	Estimated Quantity	Mileage	#Equip /Trip	Rate

TABLE B-7

GT RATE TABLE 3: SINGLE RATE PER MINIMUM PER MILEAGE GROUP

Mileage		Minimums											
		A				B				C			
		Evaluation Factors				Evaluation Factors				Evaluation Factors			
Low	High	Est. Qty	Mile- age	#Equip /Trip	Rate	Est. Qty	Miles	#Equip /Trip	Rate	Est. Qty	Mile- age	#Equip /Trip	Rate

SAMPLE APPLICATIONS

The three examples that follow illustrate the use of the new table formats to calculate the price evaluation cost for a particular bid. In each example, we use rate data from actual GT rate solicitations. Our results are identical to those obtained manually.

Single Rate Price Evaluation

Table B-8 shows a carrier's bid for a point-to-point shipment with a per gallon rate qualifier and no minimum charge. Because this is a one-time shipment and no minimum charges apply, we can use GT Rate Table 1.

EXAMPLE: SINGLE RATE PRICE EVALUATION

GT RATE TABLE 1: Single Rate				
From: DFSP, Beaufort, NC To: MCAS, New River, NC				
Rate Qualifier: PG – Per Gallon Minimum Charge: $0.00				
Price Evaluation Formula	**Evaluation Factors**			**Rate**
	Estimated Quantity	**Mileage**	**# Equip/Trip**	
	6,400,000 Gallons	1[a]	6,400,000[b]	0.025
[1] = (# Equip/Trip)×(Minimum Charge)				
[2] = (Rate)×(# Equip/Trip)×(Minimum Quantity)[c]×(Mileage)	$(0.025) \times (6,400,000) \times (1) \times (1)^d = 160,000.00$			
[3] = (Rate)×(Estimated Quantity)× (Mileage)	$(0.025) \times (6,400,000) \times (1)^d = 160,000.00$			
Total Evaluation Cost for This Table	$160,000.00			

Note: DFSP = Defense Fuel Supply Point; MCAS = Marine Corps Air Station.

[a] Mileage is always "1" for non-"per mile" rate qualifiers.

[b] (# Equip/Trip) = (Estimated Quantity)/(Minimum Quantity) where minimum quantity is "1" when minimum does not apply to the shipment.

[c] Minimum quantity is always "1" when minimum does not apply to the shipment.

[d] Mileage is always "1" when mileage does not exist for the shipment.

The table shows an estimated quantity factor of 6.4 million gallons. We assigned the mileage and # Equip/Trip values following the rules in Table B-2. Normally those are provided by an MT-INN negotiator before distributing the solicitation.

The carrier has bid a rate of $0.025 per gallon. That rate and the evaluation factors are substituted into the evaluation equations to determine the total cost of the bid, or $160,000.

Single Rate Per Minimum Price Evaluation

Table B-9 illustrates a tender bid over a point-to-point route with a per hundredweight rate qualifier and no minimum charge presented in a GT Rate Table 2 format. Minimum quantities occur in the form of weight breaks, which means the rate in a particular column applies to shipments that are less than or equal to the weight shown. When the minimum quantity is surpassed, the rate in the next column applies to the shipment. The table allows for multiple columns of individual rates.

The table contains three evaluation factors for each rate: estimated quantity, miles, and equipment/trips. An MT-INN negotiator typically assigns those values before distributing the solicitation.

In this example, the carrier has supplied a bid under each minimum column. The price evaluation formulas are then used to calculate three prices for each rate, with the highest taken as the evaluation cost for that rate. The individual costs then are added together to yield a total evaluation cost for the table.

Single Rate Per Minimum Per Mileage Group Price Evaluation

Table B-10 is a tender bid for shipments over a point-to-point route with a per hundredweight rate qualifier and no minimum charge. Minimum quantities occur in the form of weight breaks (columns) and mileage breaks (rows). The structure of the tender fits that of GT Rate Table 3.

The table contains evaluation factors for each rate in the first row. Although no evaluation factors are supplied in the second row, the MT-INN negotiator is asking for additional rates simply by including this row.

The carrier has supplied a bid under every minimum quantity column for each mileage break row. As in the previous example, the three price evaluation equations are used to determine the highest cost for each rate, which are then added together to arrive at a total evaluation cost for the table.

SUMMARY

The current paper-based system that MTMC uses to solicit and evaluate GT tenders allows rates to be expressed in a variety of formats with each format using a different method of price evaluation. We believe that MTMC can replace those

TABLE B-9

SINGLE RATE PER MINIMUM PRICE EVALUATION

GT RATE TABLE 2: Single Rate Per Minimum

From: All points in the states of: CA, ID, NV, OR, WA   To: All points in the states of: CA, ID, NV, OR, WA
(Excludes California and Washington intrastate shipments)

Rate Qualifier: PZ -- Per Hundredweight Per Mile   Minimum Charge: $300.00

	Minimums															
	10,000 lb				**20,000 lb**				**30,000 lb**				**40,000 lb**			
Price Evaluation Formula	Evaluation Factors				Evaluation Factors				Evaluation Factors				Evaluation Factors			
	Est Qty	Miles	# Equip/Trip	Rate	Est Qty	Miles	# Equip/Trip	Rate	Est Qty	Miles	# Equip/Trip	Rate	Est Qty	Miles	# Equip/Trip	R.
	469,298	339	33	0.005	504,560	273	18	0.004	1,156,658	342	33	0.003	6,346,967	470	160	0.002
(1) = (# Equip/Trip) x (Minimum Charge)	(33) x (300.00) = $9,900.00				(18) x (300.00) = $5,400.00				(33) x (300.00) = $9,900.00				(160) x (300.00) = $48,000.00			
(2) = (Rate) x (# Equip/Trip) x (Minimum Quantity) x (Mileage)	(0.005) x (33) x (10,000/100) x (339) = $5,593.50				(0.004) x (18) x (20,000/100) x (273) = $3,931.20				(0.003) x (33) x (30,000/100) x (342) = $10,157.40				(0.002) x (160) x (40,000/100) = $60,160.00			
(3) = (Rate) x (Estimated Quantity) x (Mileage)	(0.005) x (469,298/100) x (339) = $7,954.60				(0.004) x (504,560/100) x (273) = $5,509.80				(0.003) x (1,156,658/100) x (342) = $11,867.31				(0.002) x (6,346,967/100) x (470) = $59,661.47			
Evaluation Cost Per Rate	$9,900.00				$5,509.80				$11,867.31				$60,160.00			

Total Evaluation Cost for This Table = 9,900.00 + 5,509.80 + 11,867.31 + 60,160.00 = $87,437.11

TABLE B-10

SINGLE RATE PER MINIMUM PER MILEAGE GROUP PRICE EVALUATION

GT RATE TABLE TABLE 3: Single Rate Minimum Per Mileage Group

From: Defense Distribution Region West, Lathrop, CA   To: Defense Distribution Region West, Lathrop, CA, RFCC Subregion 2

Rate Qualifier: PH – Per Hundredweight   Minimum Charge: $0.00

Minimums

Mileage		15,000 lb				20,000 lb				30,000 lb				40,000 lb			
		Evaluation Factors				Evaluation Factors				Evaluation Factors				Evaluation Factors			
Low	High	Est Qty	Miles[a]	# Equip/Trip[b]	Rate	Est Qty	Miles[a]	# Equip/Trip[b]	Rate	Est Qty	Miles[a]	# Equip/Trip[b]	Rate	Est Qty	Miles[a]	# Equip/Trip[b]	Rate
1	100	215,691	1	14.45	0.55	522,289	1	26.11	0.54	181,175	1	6.04	0.53	127,233	1	3.18	0.52
101	over	0	1	0	0.54	0	1	0	0.53	0	1	0	0.52	0	1	0	0.51

Calculations for 1 – 100 Mileage Group

Price Evaluation Formula

(1) = (# Equip/Trip) × (Minimum Charge)

    (14.45) × (0) = 0   (26.11) × (0) = 0   (6.04) × (0) = 0   (3.18) × (0) = 0

(2) = (Rate) × (# Equip/Trip) × (Minimum Quantity) × (Mileage)[c]

    (0.55) × (14.45) × (15,000/100) × (1) = 1,192.13

    (0.54) × (26.11) × (20,000/100) × (1) = 2,819.88

    (0.53) × (6.04) × (30,000/100) × (1) = 960.36

    (0.52) × (3.18) × (40,000/100) × (1) = 661.44

(3) = (Rate) × (Estimated Quantity) × (Mileage)[c]

    (0.55) × (215,691/100) × (1) = 1,186.30

    (0.54) × (522,289/100) × (1) = 2,820.36

    (0.53) × (181,175/100) × (1) = 960.23

    (0.52) × (127,233/100) × (1) = 661.61

Evaluation Cost Per Rate

    $1,192.13 $2,820.36 $960.36 $661.61

Calculations for 101 and Over Mileage Group

Price Evaluation Formula

(1) = (# Equip/Trip) × (Minimum Charge)

    (0) × (0) = 0   (0) × (0) = 0   (0) × (0) = 0   (0) × (0) = 0

(2) = (Rate) × (# Equip/Trip) × (Minimum Quantity) × (Mileage)[c]

    (0.54) × (0) × (15,000/100) × (1) = 0

    (0.53) × (0) × (20,000/100) × (1) = 0

    (0.52) × (0) × (30,000/100) × (1) = 0

    (0.51) × (0) × (40,000/100) × (1) = 0

(3) = (Rate) × (Estimated Quantity) × (Mileage)[c] [d]

    (0.54) × (15,000/100) × (1) = 81.00

    (0.53) × (20,000/100) × (1) = 106.00

    (0.52) × (30,000/100) × (1) = 156.00

    (0.51) × (40,000/100) × (1) = 204.00

Evaluation Cost Per Rate

    $81.00 $106.00 $156.00 $204.00

Total Evaluation Cost for This Table = 1,192.13 + 2,820.36 + 960.36 + 661.61 + 81.00 + 106.00 + 156.00 + 204.00 = $6,181.46

Note: RFCC = Regional Freight Consolidation Center

[a] Mileage is always "1" for non "per mile" rate qualifiers

[b] (# Equip/Trip) = (Estimated Quantity) / (Minimum Quantity)

[c] Quantities are divided by 100 because the rate qualifier is per hundredweight

[d] Minimum quantity is used here because the estimated quantity is zero

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formats with three that meet all existing GT requirements, as well as those expected from expanded use of the GT program. To aid in the use of those three formats, we provide a universal set of price evaluation equations. The new formats and price evaluation equations can be readily incorporated into an automated GT solicitation and rate evaluation system.

APPENDIX C

PAPER AND ELECTRONIC SOLICITATION COSTS

This appendix compares the cost of the Military Traffic Management Command (MTMC) soliciting guaranteed traffic rates through normal paper processes with those incurred if it used electronic processes. To aid in that comparison, we use a typical Defense Logistics Agency (DLA) solicitation package.

PAPER SOLICITATION

A DLA depot solicitation package averages 251 pages in length. If MTMC pays $0.03 per page to reproduce the package, or $7.53, and $2.90 to mail it, the total cost of distributing a typical DLA solicitation package is $10.43. MTMC normally mails solicitation packages to 220 interested parties, for a total cost of $2,294.60.

ELECTRONIC SOLICITATION

If MTMC elected to send that same DLA solicitation package electronically, it would incur a transmission cost to a value-added network (VAN) and a cost to store the solicitation on a VAN bulletin board. The cost of transmitting information to a VAN is usually calculated by the number of kilocharacters (1,000 characters) sent. Table C-1 shows the estimated cost to send a 251-page solicitation to a VAN bulletin board. To estimate the cost of storing 251 pages on a VAN bulletin board for 30 days, we multiplied the $27.10 rate (most likely) of transmitting the solicitation by 30 to arrive at a total storage cost of $813.00. Adding that amount to the $27.10 cost of the initial transmission, we obtain a total cost of $840.10. After conferring with network representatives, however, we believe that our estimate of the storage cost is too high.

ELECTRONIC TENDER BIDS

Because tender bids usually consist of just one page, our DLA solicitation would result in 300 tender responses from carriers, which, as shown in Table C-1, would most likely cost $32.40.

TABLE C-1

ESTIMATED COST OF ELECTRONICALLY TRANSMITTING A TYPICAL DLA SOLICITATION

Cost type[a]	Estimated cost ($) per kilocharacter[b]		
	Low (0.05)	Most likely (0.09)	High (0.15)
Cost to send one solicitation (301.2 kilocharacters)[c]	15.06	27.11	45.18
Cost to receive 300 tender bids (360.0 kilocharacters)[d]	18.00	32.40	54.00

[a] One page from a paper document averages 1.2 kilocharacters per page.

[b] See LMI Report PL005TR1, *EDI Telecommunications Strategy for Defense Transportation*, April 1990, for a discussion of transmission costs to a VAN.

[c] 251 pages × 1.2 kilocharacters.

[d] 300 pages × 1.2 kilocharacters.

In summary, the cost of reproducing and mailing a typical DLA solicitation is approximately $2,295.00. If MTMC decided to electronically solicit and receive that same bid from carriers, the total cost would be less than $900.00, or 60 percent lower.

APPENDIX D

STANDARDS MODIFICATIONS

This appendix outlines the changes that the Military Traffic Management Command would need to make to the American National Standards Institute Accredited Standards Committee X12 Transaction Set 602, *Transportation Services Tender*, so it could accommodate a standardized guarantee traffic tender rate table.

Table D-1 shows the proposed layout of the Traffic Evaluation Factors segment of the *Transportation Services Tender* Transaction Set. That segment would be used to carry traffic estimates for each rate in a tender. Table D-2 shows a looping structure that should accommodate the processing requirements for the standard rate tables described in Appendix B. Table D-3 presents a completed *Transportation Services Tender* Transaction Set for the sample tender Rate Table 2 in Appendix C.

TABLE D-1

PROPOSED LAYOUT FOR THE TRAFFIC EVALUATION FACTORS SEGMENT

Segment:	SRF — Traffic Evaluation Factors.
Purpose:	To specify factors used to generate and/or evaluate transportation rates and charges.
Syntax:	1. C0102 — If SRF02 is present, then SRF01 is required.
Comment:	A. SRF01 qualifies the value in SRF02.
	B. SRF02 specifies an estimated volume of traffic in pounds, truckload, carloads, miles, trips, etc.
Used In:	602

SEGID	POS	Data Element Name	DE	REQ	Type	Min/Max
SRF	01	Unit of Measurement Code	355	C	ID	2/2
SRF	02	Measurement Value	739	C	R	1/10

Note: SEGID = The ASC X12 Segment Identifier; it begins a data record that is in X12 format. POS = Position; it is the position of a data element relative to other data elements within an X12 segment. DE = Data Element; the ASC X12 data element is the number of the data element that occurs at this position. REQ = Requirement Designator; it is the ASC X12 designator that identifies the conditionality of the data element.

TABLE D-2

PROPOSED LOOP STRUCTURE FOR GUARANTEED TRAFFIC RATE TABLES

POS	SEGID	Name	REQ	Use	Loop	Index
290	LX	Assigned number	0	1	LX	200
300	SRD	Scale rate detail	0	1		
310	SRM	Scale rates	0	1	SRM	100
320	SRF	Traffic evaluation factors	0	5		

TABLE D-3

EXAMPLE OF GUARANTEED TRAFFIC RATE TABLE

```
SB*1 n/1                              ;Begin GT Matrix #2
                                      ;Begin lane description
GY*F*P*SP*CA    n/l                   ;Begin from descriptions
GY*F*P*SP*IN    n/l
GY*F*P*SP*NV    n/l
GY*F*P*SP*OR    n/l
GY*F*P*SP*WA    n/l
GY*T*P*SP*CA    n/l                   ;Begin to descriptions
GY*T*P*SP*IN    n/l
GY*T*P*SP*NV    n/l
GY*T*P*SP*OR    n/l
GY*T*P*SP*WA    n/l


SC*1*2 n/l                            ;Identify rate Matrix 2
                                      ;Begin rate(s) description

SRT*A*{scac}*HM*LB**300.00 n/l        ;Identify rate qualifier
MIN*10000 n/l                         ;Describe column headers (minimums)
MIN*20000 n/l
MIN*30000 n/l
MIN*40000 n/l

LX*1 n/1                              ;Begin row description

SRM*.005 n/l                          ;Rate                        Cell #1
SRF*LB*469298 n/l                     ;Estimated Pounds
SRF*DH*339 n/l                        ;Estimated Miles
SRF*TC*33 n/l                         ;Estimated Truckloads

SRM*.004 n/l                          ;Rate                        Cell #2
SRF*LB*504560 n/l                     ;Estimated Pounds
SRF*DH*273 n/l                        ;Estimated Miles
SRF*TC*18 n/l                         ;Estimated Truckloads

SRM*.003 n/l                          ;Rate                        Cell #3
SRF*LB*1156658 n/l                    ;Estimated Pounds
SRF*DH*342 n/l                        ;Estimated Miles
SRF*TC*33 n/l                         ;Estimated Truckloads

SRM*.002 n/l                          ;Rate                        Cell #4
SRF*LB*6346967 n/l                    ;Estimated Pounds
SRF*DH*470 n/l                        ;Estimated Miles
SRF*TC*160 n/l                        ;Estimated Truckloads
```