ORDER

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
GREAT LAKES REGION

GL AF 1370.3

9/28/90

MAINTENANCE MANAGEMENT SYSTEM (MMS) PHASE I IMPLEMENTATION
SUBJ: PLAN

1. **PURPOSE**. This order provides overall guidance and direction for the orderly implementation of Phase I of the Maintenance Management System (MMS) within the Great Lakes Region. This order is not intended to address every MMS issue but will cover activities associated with the initial start up. Areas deemed to be critical are covered in more detail.

2. **DISTRIBUTION**. This order is distributed to section level and above in the Airway Facilities Division and to all Airway Facilities Sectors and Field Offices.

3. **BACKGROUND**. The Maintenance Management System (MMS) is intended to automate all administrative functions involved with maintaining the National Airspace System (NAS). This program has been implemented in various stages beginning with the installation of the Tandem computers at all ARTCC's and some GNAS sectors. The Facility Master File (FMF) was completely converted to MMS on July 5, 1990, and facility outage reporting on MMS is scheduled to begin October 1, 1990. ARTCC sectors have been utilizing automated logging and automated preventive maintenance operations since MMS was first developed. GNAS sectors are not scheduled to begin MMS automated logging until October 1, 1991.

4. **RESPONSIBILITIES**.

   a. The Operations Resources Section, AGL-423, is responsible for managing the overall MMS program. This responsibility includes implementation, budgeting, and overall program guidance.

   b. The System Maintenance Engineering Branch, AGL-460, in conjunction with AGL-423, is responsible for managing the hardware and software associated with MMS. This also includes all hardware identified as Maintenance Data Terminals (MDT's).

   c. The Telecommunications and Spectrum Engineering Branch, AGL-480, is responsible for managing the overall telecommunications functions associated with MMS. This includes dial-up lines and all associated equipment designated as part of the Data Multiplexing Network.

d. Sector Manager Responsibilities.

(1) Sector mangers shall assign one primary and one alternate sector MMS System Administrator. These individuals shall serve as the sector focal point for all MMS issues. Appendix 1, contains the current listing of all MMS System Administrators within the Great Lakes Region. Sector managers shall submit changes in writing to AGL-420, ATTN: AGL-423.6, within 10 working days after changing their designated MMS System Administrators or alternates.

(2) Procedures shall be established for adding new users to the MMS system. These procedures shall include periodic reviews to ensure accountability of those individuals requesting MMS access.

(3) One primary and one alternate FSEP coordinator shall be assigned the responsibility of maintaining the FSEP on MMS.

(4) NAPRS reportable interruptions shall be verified each administrative day to ensure accuracy of the data in the national outage data base.

(5) Log entry authorization shall be made a matter of written record by the sector manager, the sector manager's designee, or higher authority.

(6) Sector managers shall develop procedures for maintaining the accuracy of the certification data base. Additions to an individuals certifications shall only be accomplished after certification authority has been granted in writing by the sector manager.

e. Air Route Traffic Control Center (ARTCC) Sector Manager Responsibilities. In addition to those responsibilities stated in paragraph 4d, these sector managers are responsible for hosting the MMS program on their Tandem computer systems. These sectors shall maintain the hardware and software in a manner which promotes the efficient operation of MMS. Each ARTCC directly supports two GNAS sectors with their MMS system and shall provide full MMS technical support to these sectors. This support includes the maintenance and operation of the Tandem computer, the Data Multiplexing Network as it connects to the corresponding ARTCC, and the MDT hardware configuration to allow MMS access.

f. MMS SYSTEM ADMINISTRATOR RESPONSIBILITIES. MMS System Administrators shall have total responsibility for maintaining all user access levels within their sectors. ARTCC MMS System Administrators are responsible for maintaining their corresponding GNAS MMS System Administrators' access levels. The regional MMS Program Manager (AGL-423.6) will act as the primary MMS System Administrator for regional office personnel. MMS System Administrators shall ensure personnel within their sectors/regional office are granted the minimum security or "Access" level necessary to allow performance of their assigned duties. The importance of this security administration cannot be overstated as the entire MMS data base could be destroyed with an operator error

5. **SECURITY.**

a. **ACCESS LEVELS.** The following are the maximum access levels allowed. Deviations from these levels to allow higher access shall only be approved by the regional MMS program manager.

POSITION	ACCESS LEVEL
(1) ADM - MMS ADMINISTRATION SUBSYSTEM	
ARTCC MMS System Administrator	4
Designated backups for ARTCC Administrator	4
Regional Office MMS System Administrator	4
GNAS MMS System Administrator	3
AFA Administrator (Certification Data Base)	3
Data Base Administrator, e.g., APR file	2
Supervisors (GNAS or ARTCC)	1
Regional Office Users	1
All others	0
(2) LOG - LOGGING SUBSYSTEM	
All technical personnel (GNAS, ARTCC, RO)	2
All supervisors	2
All others (administrative)	1
(3) REP - REPORT GENERATION SUBSYSTEM	
Staff Specialist (GNAS, ARTCC, RO)	3
Supervisors or their designees (GNAS, ARTCC, RO)	3
Technicians (GNAS, or ARTCC)	2
(4) FSE - FSEP MAINTENANCE SUBSYSTEM	
ARTCC MMS System Administrator and Backup	7
Regional Office MMS System Administrator	7
Regional PFF Manager	7
Sector designated FMF coordinator	6 *
Supervisors and Unit Designated Data Base Administrator	4 *
All others	2 *
* designates ARTCC, GNAS, and RO	
(5) PMS - PM/CERT SCHEDULING	
ARTCC MMS System Administrator and Backup	3
SFO/Unit Designated Data Base Administrator	3 *
SFO/Unit Supervisors	3 *
All others	1 *
* designates ARTCC, GNAS, and RO	

All NM's/NS's (ARTCC only)	1
MCC Ops Officers	1
All others	0

(7) <u>EMA</u> - ELECTRONIC MAIL SUBSYSTEM
  All users   1

b. <u>DOCUMENTATION OF MMS USERS</u>. Sector managers shall establish periodic reviews for tracking those individuals authorized to utilize MMS. These reviews shall ensure accountability of those individuals requesting MMS access.

c. <u>MMS USER IDENTIFICATION</u>. MMS system administrators shall assign unique initials to each user within their sector. Sectors are encouraged to use the individuals first initial, last initial, and then a sequence number depending on how many users within a sector have the same initials. All user initials shall be traceable to only one individual within each sector.

d. <u>REMOVING MMS USERS</u>. Removing an individual's MMS access shall be part of the individual's out-processing at the time of separation or departure from the sector. Individuals must be removed from MMS access immediately after leaving their sectors. Removal shall be accomplished by deleting the user from the ACC file. Under no circumstances shall an individual's Administrative Personnel Record (APR) be modified after that individual has been deleted from the ACC file. This will insure the individuals User-ID cannot be re-assigned. If this departure is a result of transferring to another sector, the gaining sector shall be responsible for adding the individual.

6. <u>LOGGING</u>. Refer to action notice A6000.12 for MMS logging requirements. When order 6000.15B is published, this action notice will be incorporated as a separate chapter covering MMS logging requirements. Those paragraphs of action notice A6000.12 requiring further expansion are addressed below.

NOTE: Detailed MMS user instructions for making the appropriate type entries can be found in the MMS Users Manual, TI 6030.1.

a. <u>ESTABLISHING LOGS</u>. Automated logs shall be established at facilities where and when such capability exists. Manual logging at a facility shall be discontinued when an automated system is implemented. With the exception of NAPRS interruption reporting and those facilities which have direct access to MMS at all times, GNAS sectors shall not utilize MMS logging at this time. Until the software is available for stand-alone MMS operations on an MDT, GNAS sector facilities not directly connected to MMS shall continue manual logging. This software is expected to be available after October 1, 1991. Those GNAS sectors with facilities directly connected to MMS at all times and wishing to implement MMS logging at this time shall contact AGL-423.6 for further guidance.

b. __LOG ENTRY AUTHORITY__. Log entry authorization must be made a matter of written record by the sector manager, the sector manager's designee, or higher authority. Log entry authorization shall not be granted until the employee completes required MMS training. All required training is listed in paragraph 13. ARTCC personnel who have received MMS user training and are currently making MMS log entries are not required to complete the training listed in paragraph 13. However, these individuals are encouraged to complete course 43611, MMS/IMCS OJT (Directed Study) as soon as practical.

c. __DELAYED ENTRIES__. The system automatically dates and time-stamps every entry when it is entered into the system. Future hard copies of log reports shall include system date and time. Delayed entries shall be made only when necessary to complete the record for all log entries. This is not to say that MMS entry start times have to coincide exactly with the system time. A technician is not expected to make a coordination log entry at the same instant the coordination took place. The start time should indicate the time the action occurred not necessarily the time the log entry is being made. Log entries entered into a Maintenance Data Terminal (MDT) not connected to the Maintenance Processor System (MPS) are not delayed entries.

d. __INTERRUPTION/OUTAGE LOG INTERRUPTION REPORT (LIR)__. Each reportable facility/service interruption shall be entered by the use of the LIR screen. Order 6040.15 current version, National Airspace Performance Reporting System, contains the definition of a reportable interruption.

e. __CERTIFICATION__. MMS supports logging of scheduled and unscheduled certifications. The certification statement shall be entered as specified in the maintenance technical handbooks. This shall be accomplished by requesting MMS to insert the required statement. This procedure will ensure the validity of the individual's certification credentials.

f. __CERTIFICATION AUTHORITY__. MMS provides a certification data base which identifies all facilities for which an individual holds certification authority. Sector managers shall develop procedures for maintaining the accuracy of this data base. Additions to an individuals certifications shall only be accomplished after certification authority has been granted in writing by the sector manager.

g. __TEMPORARY LOGS__. Hard copies of blank MMS logging screens shall be kept on hand and shall be initiated for temporary logging purposes when the automated logging system is out of service. The temporary entries shall be transposed to the automated system when MMS is restored, and the temporary hard copies shall then be destroyed.

h. __TRANSACTION MONITORING FACILITY (TMF)__. The Transaction Monitoring Facility (TMF) utility shall be properly configured, maintained, and operational whenever the MMS application is in use.

7. NAPRS OUTAGE REPORTING.

   a.   MMS OUTAGE REPORTING PROCEDURES. Outage reporting utilizing MMS shall be accomplished in accordance with the National Airspace Performance Reporting System (NAPRS) to MMS Transition Plan. Effective October 1, 1990, all NAPRS outages shall be entered into the MMS LIR screen. The method of entering outages is at the discretion of each sector manager. The outages may be entered by a single individual within the sector, e.g., MCC OPS Officer, or they may be entered directly by technicians or supervisors at Unit/SFO's.

   (1)   OUTAGE REPORTING DEADLINES. The following reporting deadlines will be effective October 1, 1990, for all sectors.

   (a)   Prior to the 5th calendar day of each month sectors shall run report R60403 for the previous months outages. All exceptions shall be corrected and the new data entered into MMS. ARTCC sectors shall also run report R60407D.

   (b)   On the 6th calendar day of each month the regional NAPRS coordinator will log onto MMS and extract each sectors' monthly outages. This shall be accomplished using reports R60403D and R60407D. No sector changes are allowed after the 5th calendar day of each month. The regional MMS coordinator shall rectify any exceptions and then transmit the data to Boeing time share by the 11th calendar day of each month.

   (2)   DAILY VERIFICATION. Outage reports shall be verified each administrative day by the sector manager or designee to ensure accuracy of the data in the national outage data base. GNAS and regional office MMS users have three basic methods to obtain daily NAPRS reports.

   (a)   Utilize the designated ARTCC dial-in phone number to access the MMS NAPRS Download. This number emulates a tinynet and will contain the last GNAS NAPRS data file. This file is in raw data format. The regional MMS collector site (ZAU, telephone: 708-897-1984) contains the regional concatenated file.

   (b)   Utilize an MMS port to access the MMS Report subsystem to obtain the NAPREP report via an MDT. This report is already formatted.

   (c)   The ZAU MMS and PC Tinynet combination serve as a collector facility and as such provide a concatenated data base file. This file is provided to the Regional Office Tinynet (FTS 384-7610). This Tinynet can be accessed by any facility/sector to retrieve the regional NAPRS file.

   (3)   MONTHLY VERIFICATION. Prior to October 1, 1990, the monthly 6040-3 reports shall continue to be produced at the sector level using the daily NAPRS data base files. It is imperative GNAS sectors continue to obtain the daily files as outlined in paragraph

accomplished for monthly verification.

(a) MMS R60403 COMPARISON WITH PC-NAPRS 6040-3. MMS provides
the capability to produce monthly 6040-3 reports. These reports are available as report-
formatted only and not as raw 6040-3 data. Special procedures are required to make the raw
data available to local sectors. Prior to working out these procedures, it shall be mandatory
local sectors run the MMS R60403 report and compare it with their PC-NAPRS 6040-3
generator output. **Sectors must have exercised this option for 1 month prior to eliminating
this dual reporting requirement and transitioning to the full MMS 6040-3 method.** All
discrepancies must be resolved between the two systems prior to converting. Procedures are
described in TI 6030.1 section 8.

(b) When executing report R60403, an exception report is also generated. This
exception report shall be reviewed and the MMS data corrected. The R60403 report shall
continue to be executed until all exceptions are cleared.

(c) When an acceptable R60403 report has been obtained, and if the GNAS
sector wishes a copy of the raw outage data, they can execute report R60403D. This
generates a hard copy printout and a data file consisting of the raw outage data. All
comments and initials are removed from this data. GNAS sectors must then contact their
ARTCC MMS System Administrator and arrange for extraction of the data file. The ARTCC
MMS System Administrator must utilize a command interpreter and download the data file to
a PC. The file can then be transmitted to the requesting GNAS sector via FAA.MAIL or
other electronic transfer method.

b. NAPRS REPORTING VIA PC. The present method of transmitting the daily NAPRS
data base via PC's and Tinynet will continue from ZAU. ZAU will perform a daily
conversion to PC NAPRS format and transmit this data daily to Washington Headquarters,
and the regional office tinynet. Sectors wishing to obtain copies of this daily file for
verification shall extract the data from ZAU as stated in para 7a(2)(a) or 7a(2)(b).

8. FACILITY SERVICE EQUIPMENT PROFILE (FSEP).

a. FMF TO FSEP TRANSITION. On June 1, 1990, the transition began to officially
utilize the MMS to host the Facility Master File (FMF). This transition has been completed
and now sector managers are directly responsible for maintaining their Facility Service
Equipment Profile (FSEP), formerly the FMF, data on MMS. Washington Headquarters has
determined that only the regional FMF coordinator is allowed to update the Facilities Pre-
commissioned File (FPF), formerly the PFF. Sectors shall not update the Facilities Pre-
commissioned File (FPF).

b. SECTOR FMF COORDINATORS. Sector managers shall assign two individuals, one
primary and one alternate, the responsibility for maintaining the FSEP on MMS These
individuals shall be trained on the necessary portions of MMS to allow them to perform the

c. PROCEDURES FOR UPDATING THE FSEP

(1) FMF PROCEDURES BEFORE MMS. Previously, all sectors sent their Facility Master File Change Documents, FAA Form 6000-12's, to the regional FMF coordinator for entry into the national FMF data base residing on the Boeing time share computer. With that process, a certain degree of internal control was in place by virtue of the fact all change documents were reviewed by one specialist prior to entry into the data base. Historically, this procedure added integrity to the process because errors were detected during the regional review.

(2) REGIONAL REVIEW. To ensure the continued integrity of the FSEP data base, sectors shall print a report R600012 after a change has been made to the FSEP data, and forward a copy to the regional FMF coordinator. The submitted forms will be reviewed by the regional specialist as in the past; however, errors will be corrected via a telephone call to the sector which submitted the update form. The sector will then be responsible for logging back onto MMS and correcting the error.

NOTE: If the FSEP update generates the message "WARNING - COMBINATION NOT FOUND IN FILE IDENT", complete the update and annotate the R600012 submitted to the region with the statement "Must be added to Location IDENT Validation Table."

(3) UPDATE DEADLINES. To ensure the MMS data base is totally correct as of the last day of the month, sectors shall submit their change sheets to be received in the regional office no later than the 25th of each month. No updates will be allowed after the 25th of the month without verbally coordinating with the regional FMF coordinator. This will allow time for both the regional review and any necessary sector level corrections. Sectors are encouraged to submit the R600012 immediately after the change has been made. Do not wait until the end of the month to submit all changes. The importance of the accuracy of the FMF on the last day of the month is the same as in the past; the data base is distributed to other users, quarterly staffing standards are developed, etc.

9. VALIDATION FILE UPDATES.

a. Five validation files are maintained on each MMS system and are used by the FSE subsystem to validate fields prior to allowing FMF updates to occur. These files are maintained and distributed from Washington Headquarters. However, occasionally, it may be necessary for the Regional MMS System Administrator to update the IDENT and COSTC files in order for FMF updates to be made. The five files are:

TYPES - Facility types and status codes
IDENT - Location identifiers
COSTC - Cost center codes
CODEC - Facility code and class
'HN a MF   P-,   _   _   _

b. **UPDATE PROCEDURES**. All updates to the IDENT and COSTC files shall only be accomplished by the regional FMF coordinator. Sectors wishing to update these two validation files shall submit a written request to the regional FMF coordinator. All requests shall be addressed to AGL-420, ATTN: AGL-423.4. The regional FMF coordinator shall review the request for accuracy and then accomplish the update on the ZAU MPS. After an update to the COSTC or IDENT file is complete, the ZAU MMS System Administrator shall transfer these files to ZID, ZMP, and ZOB MPS systems. This transfer will require close coordination between the ZAU MPS System Administrator and the other MPS System Administrators. The validation files shall be transferred from ZAU to the other MPS sites at least monthly.

c. Updates to the SHNAME, TYPES, and CODEC files are not authorized. Washington headquarters is the only organization having authority to change these files.

10. **REQUIREMENTS FOR MPS BACK-UP OF MMS DATA**. The ARTCC MMS System Administrator is responsible for accomplishing back-up's of the MMS system. Order 6140.5, Maintenance of the Maintenance Processor Subsystem (MPS), and Action Notice A6000.12 Automated Facility Maintenance Log, establish these backup requirements. Additionally this order establishes a quarterly requirement.

a. **DAILY**. Backup all files modified since the previous backup.

b. **WEEKLY**. Backup all MMS data base files. Procedures are defined in the Administrators Guide for the Maintenance Management System, TI 6030.2.

c. **MONTHLY**. Backup the entire MMS system. Procedures are defined in the Administrators Guide for the Maintenance Management System, TI 6030.2.

d. **QUARTERLY**. Archive all MMS Logging Data which is older than 12 months. If system capacity permits, data which is 12 to 24 months old may be kept on-line.

11. **NOTIFICATION OF MMS/MPS OUTAGES**.

a. **SCHEDULED MMS OUTAGES**. Scheduled outages of the MMS system for hardware or software maintenance shall be coordinated between the ARTCC and the GNAS facilities. The ARTCC MMS System Administrator is responsible for notifying the supported GNAS MCC specialists at least 24 hours prior to shutting down the system for maintenance. All scheduled maintenance shall avoid the end-of-shift time frames to allow technicians the opportunity to close out pending log entries prior to ending their shift. Notification shall also be accomplished 5 minutes prior to shutdown via an on-line message to all users currently logged on.

b. **UNSCHEDULED MMS OUTAGES**. All unscheduled outages expected to exceed 1 hour during administrative hours shall be reported by the ARTCC NAS Manager to the associated GNAS MCC specialist. After GNAS MCC's are staffed for 24 hour operation, then any unscheduled outage shall be reported to the associated GNAS MCC

c. <u>GNAS MCC SPECIALISTS</u> are responsible for notifying all MMS users within their sector of the dates and times MMS will be out of service.

12. <u>IMPLEMENTATION OF NEW MMS VERSIONS</u>.

a. <u>ARTCC USER NOTIFICATION</u>. Prior to installing new versions of MMS on the Tandem computer, the following steps shall be taken by the ARTCC MMS System Administrator.

(1) A date and time for fully installing the new version shall be established.

(2) All changes to the system shall be reviewed for impact on the users.

(3) All users within the ARTCC shall be briefed on new capabilities, changes, and impact to the system.

b. <u>GNAS USER NOTIFICATION</u>. The ARTCC MMS System Administrator shall be responsible for briefing the supported GNAS MMS System Administrators on the new capabilities and changes to the MMS program. The GNAS System Administrators shall in turn brief their corresponding MMS users.

c. <u>NOTIFICATION DEADLINES</u>. A minimum of 14 days notice shall be given to all MMS users prior to installing new versions of MMS software that will significantly impact users. This should allow enough time to brief all affected personnel prior to the change.

13. <u>TRAINING REQUIREMENTS</u>.

a. <u>ARTCC SYSTEM ADMINISTRATOR TRAINING</u>. The following are the minimum training requirements necessary to serve as an ARTCC MMS System Administrator.

(1) Course 12007, Tandem Concepts and Facilities
(2) Course 12009, Tandem Software
(3) Course 47405, Cobol Programming Language (CBI)
(4) Course 43498, Tandem Applications
(5) Course 43522, Tandem Pathway
(6) Course 43525, Tandem System Management
(7) Course 49223, MPS Software Training
(8) Course 94513, General Maintenance Handbook for Airway
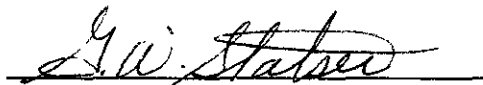   Facilities, Order 6000.15A. (Directed Study)

b. <u>GNAS SYSTEM ADMINISTRATOR TRAINING</u>. The following training is required to be a GNAS Sector/Regional Office MMS System Administrator.

(1) Course 43611, MMS/IMCS OJT (Directed Study) or
    Course 43548 MMS IMCS OJT Resident

(2) Course 94513, General Maintenance Handbook for Airway Facilities, Order 6000.15A. (Directed Study)

c. <u>TECHNICIAN TRAINING</u>. The following are training requirements for ARTCC/GNAS sector technicians or users of MMS.

(1) Course 43611, MMS/IMCS OJT (Directed Study) or
Course 43548, MMS/IMCS OJT (Resident)
(2) Course 94513, General Maintenance Handbook for Airway Facilities, Order 6000.15A. (Directed Study)

G. W. Statser
Manager, Airway Facilities Division, AGL-400

APPENDIX 1

SECTOR MMS SYSTEM ADMINISTRATORS
All Numbers FTS

SECTOR	PRIMARY	ALTERNATE	TELEPHONE
DAK	JIM KNIGHT	TOM SCHAUER	783-4208
IND	GORDON MUSSER	STEVE LAWRENCE	332-0325 332-0467
MCH	DANIEL CHAMBERS	BEVERLY MANSFIELD	372-3290
MIN	WAYNE MEIER	ROGER JOHNSON	725-4241
ILL	RAYMOND ECKARD	MAUREEN BEHARELLE	955-4966
CHI	SYED RIZVI	PAT McCORMICK	886-6262
OHI	MICHAEL LITTLETON	DUNG CHU	942-2350
WIS	JAMES SWIFKA	TOM JOHNSON	360-3820
ZAU	HANNS KNITTER	NORM HAASE	388-9392
ZOB	MANUAL DEJESUS	DALE LEWIS	292-8175
ZID	DICK MILLER	JERRY CROSBY	332-0344
ZMP	MIKE BRUNIG	JERRY RUSSEL	784-3257 784-3277

REGIONAL MMS COORDINATORS

POSITION	PRIMARY	ALTERNATE	TELEPHONE
MMS ADMINISTRATOR	JODY OLES	VINN BEIGH	384-7449
FMF COORDINATOR	ROSEMARY SPILLMAN	JODY OLES	384-7597
FPF COORDINATOR	ROSEMARY SPILLMAN	JODY OLES	384-7597