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UPDATE PROCEDURES FOR THE MODEL 1, PACKAGE 2, DATA BASE OF THE FLIGHT SERVICE AUTOMATION SYSTEM

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16. Abstract

This document is part of an ongoing effort in the development of a data base for the Flight Service Automation System (FSAS). It identifies the plan by which the Model 1, Package 2, data base will be updated. It also describes the format and sequence that must be followed for automated and nonautomated data updates.

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1. INTRODUCTION.

1.1 PURPOSE.

This document is part of an ongoing effort in the development of a data base for the Flight Service Automation System (FSAS). It identifies the plan by which the Model 1, Package 2, data base will be updated. It also describes the format and time schedule that must be followed for automated and nonautomated data.

1.2 BACKGROUND.

Data Base (DB) update is a bifaceted function. One facet is data transfer. This includes transfer of data from the source (input data) to the Flight Service Station Branch, ACT-250, Data Base Team (DBT), and transfer of hard copy listings of the updated DB to the facilities affected by the updates. A second facet of data base update is update format. This includes a description of the update and the identification of the specific range of the current data base affected by the update operation.

2. DISCUSSION.

2.1 DATA TRANSFER.

Data transfer consists of two parts: One part is the flow of the data; i.e., the route the data travels to and from the DBT. The other part is the means by which the data is transferred; i.e., by mail, teletype, courier, etc.

2.1.1 Data Flow.

The most effective route for data flow is direct flow from the source initiating the update to the DBT followed by network flow from the DBT to all facilities affected by the DB update. Figure 1 is a block diagram of DB update information flow (magnetic tape and/or hard copy). Direct flow from the source to the DBT avoids delays, errors, and data losses due to excess handling.

2.1.2 Method of Transfer.

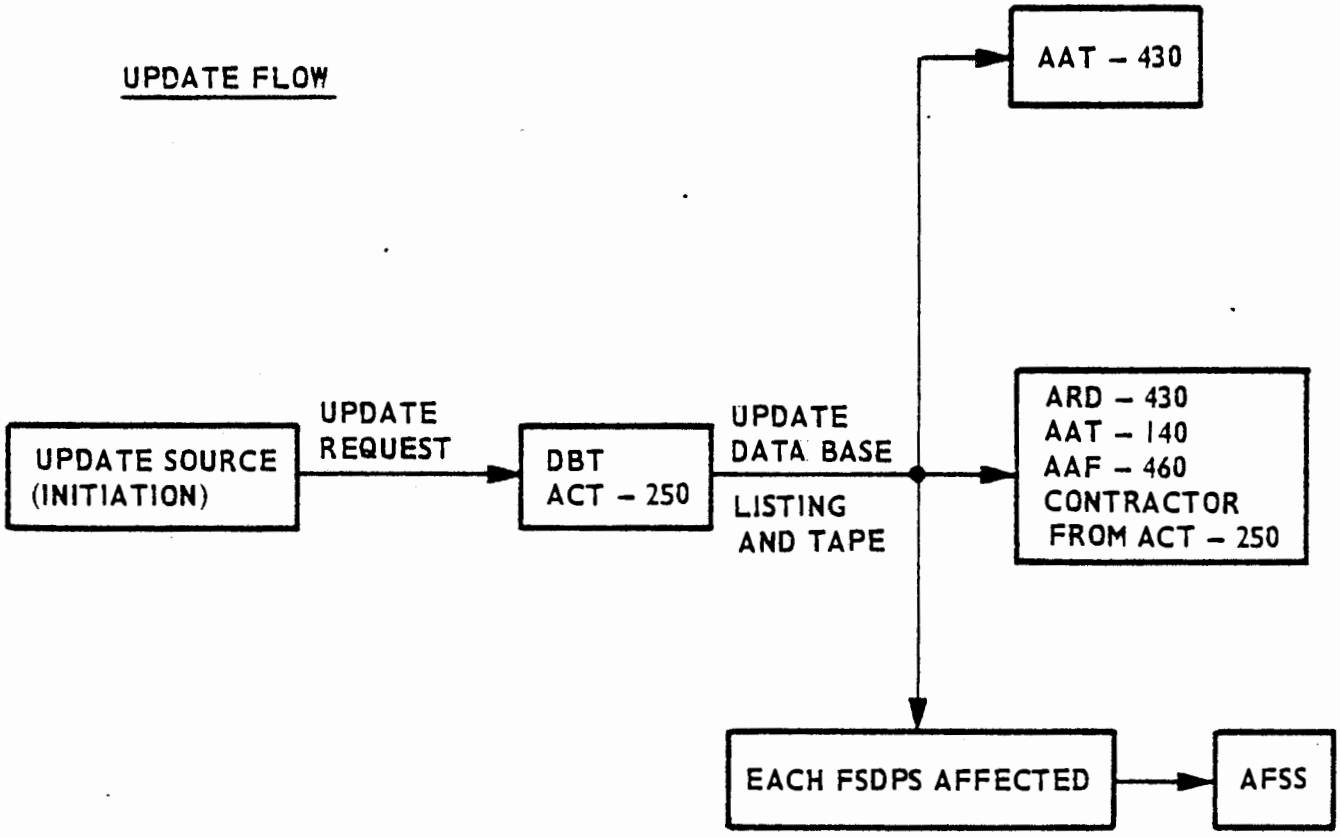
A network must be established for flow from the DBT to ensure all facilities affected by the data base update are furnished with the most current data base listing (i.e., must be locally available before it is activated).

2.1.2.1 Source Document.

Each facility will be provided with a current tape or listing of the data base from ACT-250 via the following network:

a. From the DBT to Systems Research and Development Service (ARD-430), Air Traffic Service (AAT-140 and 430), Airway Facilities Service (AAF-460), each Flight Service Data Processing System (FSDPS), and the Contractor.

b. To each Automated Flight Service Station (AFSS) from the associated FSDPS.



LEGEND

AAF – AIRWAY FACILITIES SERVICE
AAT – AIR TRAFFIC SERVICE
ACT – TECHNICAL CENTER
ARD – SYSTEMS RESEARCH AND DEVELOPMENT SERVICE
AFSS – AUTOMATED FLIGHT SERVICE STATION
FSDPS – FLIGHT S ERVICE DATA PROCESSING SYSTEM
DBT – DATA BASE TEAM

FIGURE 1. DATA BASE UPDATE INFORMATION FLOW

c. AAT-430 will have the National Flight Data Center (NFDC) master, as well as a copy of the FSAS listing and tape from ACT-250.

The listings will be disseminated in a tape format to those facilities that have the ability to make hard copies. Due to the amount of data, listings of the updates will only be provided upon request.

2.1.2.2 Data Flow Schedule.

The updates must be received by the DBT in compliance with the following:

a. AAT-430 and Contractor Tape Updates — eight working days before a data base update.

b. Others - 14 working days before a data base update.

The data that is extracted by the DBT from nonautomated sources; i.e., external airports, weather reporting types by station, etc., will reflect the information received by the DBT 14 working days before a data base update.

2.2 UPDATE FORMAT.

The update information transferred to the ACT-250 DBT may be provided in an automated form (i.e., requires no keyboard input by the DBT) or a nonautomated form. In either form, a rigid format must be followed.

2.2.1 Nonautomated Update.

All nonautomated updates shall be typed or printed using capital or block alphanumerics. If the letter "O" and zero are the same or not easily identified in input, the zero should be slashed "Ø."

The zero should always be slashed in printed inputs. If there is a chance for misinterpretation, the "S" should be underlined "S," in either input. Figure 2 contains the desired characters.

A B C D E F G H I J K L M N O P

Q R S T U V W X Y Z

$ Ø 1 2 3 4 5 6 7 8 9

FIGURE 2. SUGGESTED ALPHANUMERICS FOR REQUESTED UPDATES

The update information must include the following:

a. Type of update:

1. Updates shall be made on a per record basis. A record is defined as one line in the data base consisting of a total of 80 alphanumeric characters and spaces.

2. The following are the allowable types of updates: replace a record, delete a record, insert a record.

b. Range of data base affected:

1. This is specified by referring to the record sequence identification number (line number) in the current data base for the file identification.

c. The contents of the update:

1. This is the requested new or corrected data as it is to appear in the updated data base.

2.2.1.1 Nonautomated Format.

The previous information must be provided in a uniform format. An update request form is presented in figure 3. This form is an adaptation of the Federal Aviation Administration (FAA) Form 1370-2(8-68) and provides a means of providing update data in a uniform manner conforming to the following update format:

a. The name of the facility/office requesting the change shall be at the top of each page.

b. Every page shall be numbered and shall show the total number of pages (page____of____). All of the requested data base updates shall be included in one series of numbered pages.

c. The date of the update request shall be included on the first page.

d. The first line, the "statement" or work area, shall contain the file identification (i.e., Air Traffic Control Address (ATCA), Airway Route (AWAY), Flight Plan Storage (FPSTORE), etc.).

e. The next line following the file identification line shall contain the type of update requested. This shall pertain to all subsequent instruction lines until another update specification line is encountered. The lines following the update specification line are the update instruction.

f. Following the update request line, the appropriate update request is stated in compliance with the instruction for the nature of the update: replace record(s), delete record(s), insert record(s).

PROGRAM WORK SHEET

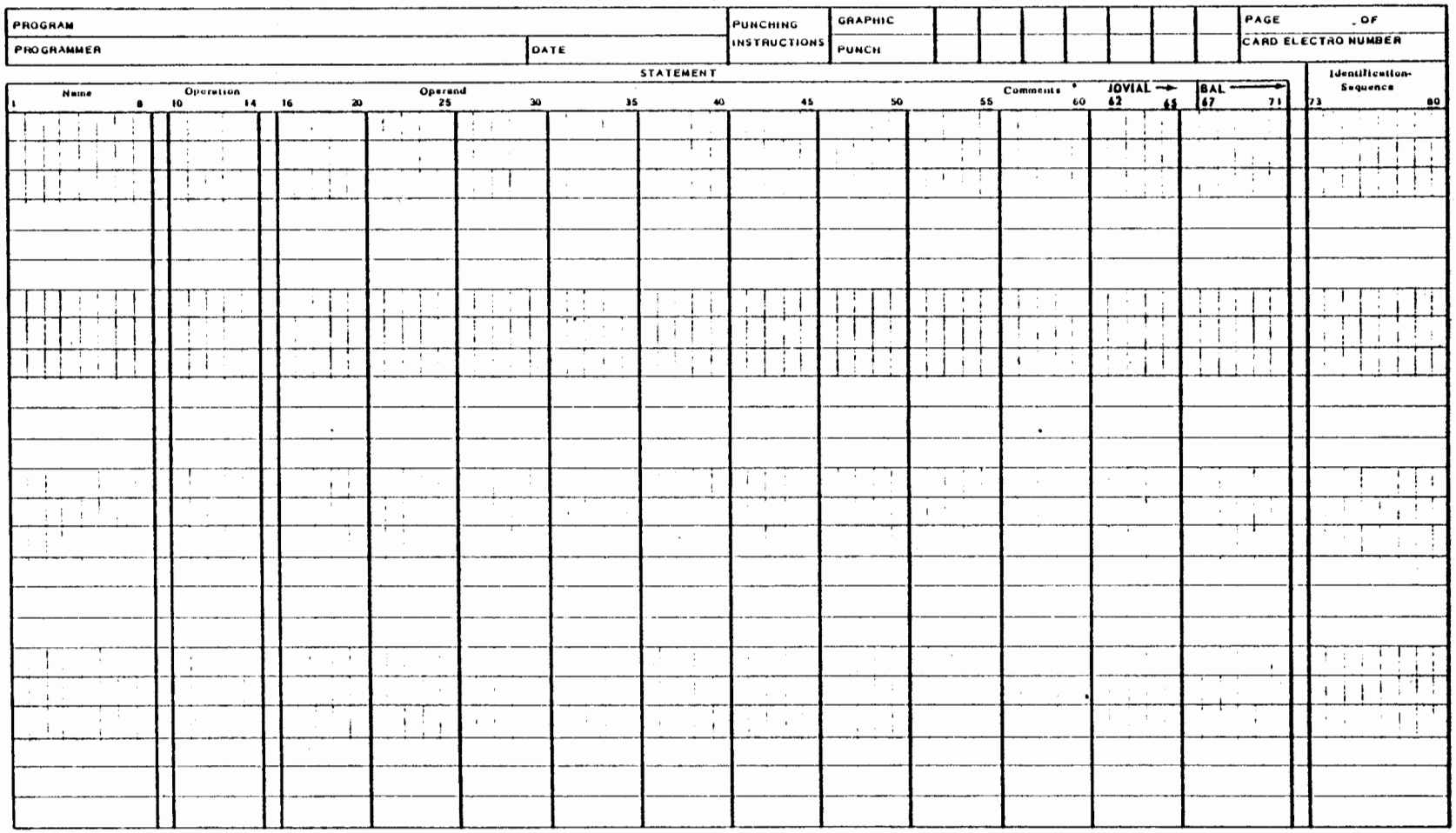


FIGURE 3. PROGRAM WORK SHEET

2.2.1.1.1 Replace Record(s).

Any alterations to a record in the data base shall require replacing the entire record with an updated version. This is indicated by a REPLACE identifier line.

The next line(s) shall contain the corrected data as it is to appear in the updated data base and the sequence/line identifier of the line to be replaced. The corrected data shall be located in columns 1 to 72 and the sequence/line identifier in columns 73 to 80.

REPLACE
Updated Record - SEQ Number

EXAMPLE:

REPLACE UPDATE

Original File:

```
                                                (Record Number)
ABE ABI ABQ ABR ABY ACK . . . . . . . . . . . . 100
AGC AGS AHN AIA AKO ALB . . . . . . . . . . . . 200
ESC ESF EVG EVV EVW EWB . . . . . . . . . . . . 300
          .
          .
          .
```

Update Request:

REPLACE

A L W _ A M A _ A M G _ A N B _ A D O _ A N D _ _ _ _ ....._ _ 200

```
Updated File:                                   (Record Number)
ABE ABI ABQ ABR ABY ACK . . . . . . . . . . . . 100
ALW AMA AMG NB ADO AND . . . . . . . . . . . . . 200
ESC ESF EVG EVV EVW EWB . . . . . . . . . . . . 300
          .
          .
          .
```

NOTE: Line 2 is now updated.

2.2.1.1.2 Delete Record(s).

If a record is superfluous and should be removed from the file, this is indicated by a DELETE identifier. To delete a single line of data or nonsequential lines of data, enter a sequence/line number on an instruction line. One instruction line for each deletion. Multiple lines/records are identified by the first and last sequence identification number, separated by a dash.

DELETE

SEQ number of 1st record through SEQ number of last record. The SEQ number shall be separated by a dash (-).

EXAMPLE:

DELETE UPDATE

Original File:

```
                                              (Record Number)
ABE ABI ABQ ABR ABY ACK . . . . . . . . . . . . 100
AGC AGS AHN AIA AKO ALB . . . . . . . . . . . . 200
ESC ESF EVG EUV EVW EWB . . . . . . . . . . . . 300
          .
          .
          .
```

Update Request:

DELETE

```
          2 0 0 _ _ _ _ _ _ _ _ _ ..... _ _ _ _ _ _ _
```

73 - 80

Updated File:

```
                                              (Record Number)
ABE ABI ABQ ABR ABY ACK . . . . . . . . . . . . 100
ESC ESF EVG EUV EVW EWB . . . . . . . . . . . . 200
          .
          .
          .
```

NOTE: Deletion of line 200 causes updated file to be renumbered (sequenced) when the update is completed.

DELETE

100 - 300 would delete all three records.

2.2.1.1.3 Insert Record(s).

If a new record(s) is to be added to the file, this is indicated by an INSERT identifier. The instruction line shall contain the new data in columns 1 through 72 and the sequence line number of the line that will immediately precede the new record(s) in the updated file in columns 72 through 80. If more than one record is to be inserted at a particular location in a file, the additional records will be located directly below the first new record and will reference the same sequence/ line number; e.g.,

INSERT

New Record(s) - SEQ number

EXAMPLE:

INSERT UPDATE

Original File:

(Record Number)

ABE ABI ABQ ABR ABY ACK 100
AGC AGS AHN AIA AKO ALB 200
ESC ESF EVG EVV EVW EWB 300
.
.
.

Update Request:

INSERT.

A L W _ A M A _ A M G _ A N B _ A D O _ A N D _ ..... _ _ _ 2 0 0

73 - 80

Updated File:

ABE ABI ABQ ABR ABY ACK 100
AGC AGS AHN AIA AKO ALB 200
ALW AMA AMG ANB ADO AND 300
ESC ESF EVG EVV EVW EWB 400
.
.
.

NOTE: New line(s) is inserted after the specified sequence number and causes updated file to be renumbered (sequenced) when the update is completed.

2.2.2 DBT Manual Updates.

The DBT may elect to use any of the update methods described. They may also edit and make on-line corrections to the current data base or use the methods described in paragraph 2.2.2.d.1.

2.2.2.1 DBT Automated Updates.

When available, information on contractor tape input will be included as required. The data provided by NFDC will replace all previous data received from that source. An Air Route Traffic Control Center (ARTCC) update will replace all data from that facility. A data base update will be processed as follows:

a. All nonautomated updates will be processed first. It is assumed that the NFDC and ARTCC data will be replaced, not changed.

b. The new NFDC data:

1. LOCFIX file processing

(a) Insert the missing connect fixes that were added to the AWAY file.

(b) Insert the external (non-U.S.) locations that were added to the previous file. This will include any manual changes to the data input for the current update.

2. AWAY file processing

(a) Insert the necessary additions for off-route airport and/or fix connections, extracted from the ARTCC tapes.

(b) Insert all manually input locations, with corrections.

(c) Validate the file and correct as necessary.

c. The new ARTCC data:

1. If one or more of the 20 ARTCC data base tapes are changed, the DBT will not know if the FSAS extracted data has changed. The ARTCC data, used to agument the NFDC supplied data, will be reprocessed and inserted in the appropriate files. All files derived from the ARTCC data (SIDRTE, SUBFIX, etc.) shall be recompiled.

2. If none of the ARTCC data base tapes are changed:

(a) The NFDC supplied data shall be augmented as described in paragraph 2.2.2.1(c) except that the ARTCC and manual input data used for the previous update may be applied without change.

(b) The other ARTCC-derived files shall remain the same, unless there are manual corrections to be applied.

d. Nonautomated Data

1. The DBT may elect to store the nonautomated changes on an automated storage device and have them automatically entered when the data base update is compiled. If this option is exercised, it will have to reference the current data base for sequence numbers and changes and will be limited to files that do not contain data derived from an automated source.

2. Manual updates to files that are derived from automated sources shall be input after the automated update is complete.

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