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Terminal

User's Manual

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Flight Data Input/Output (FDIO) System

TM-4-1

FLIGHT DATA INPUT/OUTPUT (FDIO) SYSTEM

USER'S MANUAL

TM-4-1

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FOREWORD

This publication provides guidance and technical information for terminal Air Traffic Control Specialists in the operation of the Flight Data Input/Output (FDIO) System.

Management and staff of Daytona Beach Air Traffic Control Tower were instrumental in providing information and field-testing facilities for the development of this publication.

This publication is intended for use by Air Traffic Control Specialists in the Federal Aviation Administration and is not intended to replace, substitute for, or supersede official regulations, procedures, or directives.

Charles E. Saunders
Manager, Training, ATX-100

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CHAPTER 1: INTRODUCTION

PURPOSE

This manual is designed to provide terminal air traffic controllers with an understanding of how the Flight Data Input/Output (FDIO) system works. It explains and describes the components of the system, the way in which the system allows terminal facilities to interface with the ARTCC Host computer, and system inputs and outputs.

It should be noted that the information presented in this manual is generic in nature and does not address input, output, or message format changes arising from locally adapted patches or due to any other local applications.

SCOPE

This manual covers the hardware components of the FDIO system, message entry procedures, and interpretation of system responses to message entry.

ORGANIZATION

This manual is organized into five chapters and three appendices:

Chapter 1 Introduction - States purpose, scope, and basic organization of the manual and lists references that support the manual's contents

Chapter 2 System Description - Provides an overview of the FDIO system and how ATCTs interface with the ARTCC Host computer

Chapter 3 Equipment Operation - Provides an overview of the controls and indicators found on each of the peripheral units

Chapter 4 Message Field Format and Content - Lists the format and requirements for selected message fields and provides examples of correct field data and the types of error messages that may be encountered

Chapter 5 Message Composition and Entry - Explains message composition rules and formats, ways to amend messages, and ways to respond to error indications

Appendix A Quick Reference - Field Formats (and Error Messages)

Appendix B Quick Reference - Message Formats (and Error Messages)

Appendix C Acronyms/Abbreviations

REFERENCES

Information presented in this manual comes from the following source material:

	Publication/Title	Number
1.	Message Entry and Checking	NAS-MD-311
2.	Route Conversion and Posting	NAS-MD-312
3.	Local Outputs	NAS-MD-314
4.	Flight Data Input/Output (FDIO) System	TI 6130.6
5.	M2501010 Flight Strip Printer Operator's Manual	TI 6130.8
6.	IER 512C-FSP Printer User Guide	
7.	Air Traffic Control	FAAO 7110.65

CHAPTER 2: SYSTEM DESCRIPTION

GENERAL

FDIO distributes flight plan data, weather information, and general information messages among an Air Route Traffic Control Center (ARTCC) Host computer, ARTCC printer peripherals, and associated Air Traffic Control Tower (ATCT) remote sites. Remote sites having Terminal Radar Approach Control (TRACON) capability are included in the ATCT designation.

Figure 2-1 illustrates the relationships among the various FDIO components and the ARTCC Host computer.

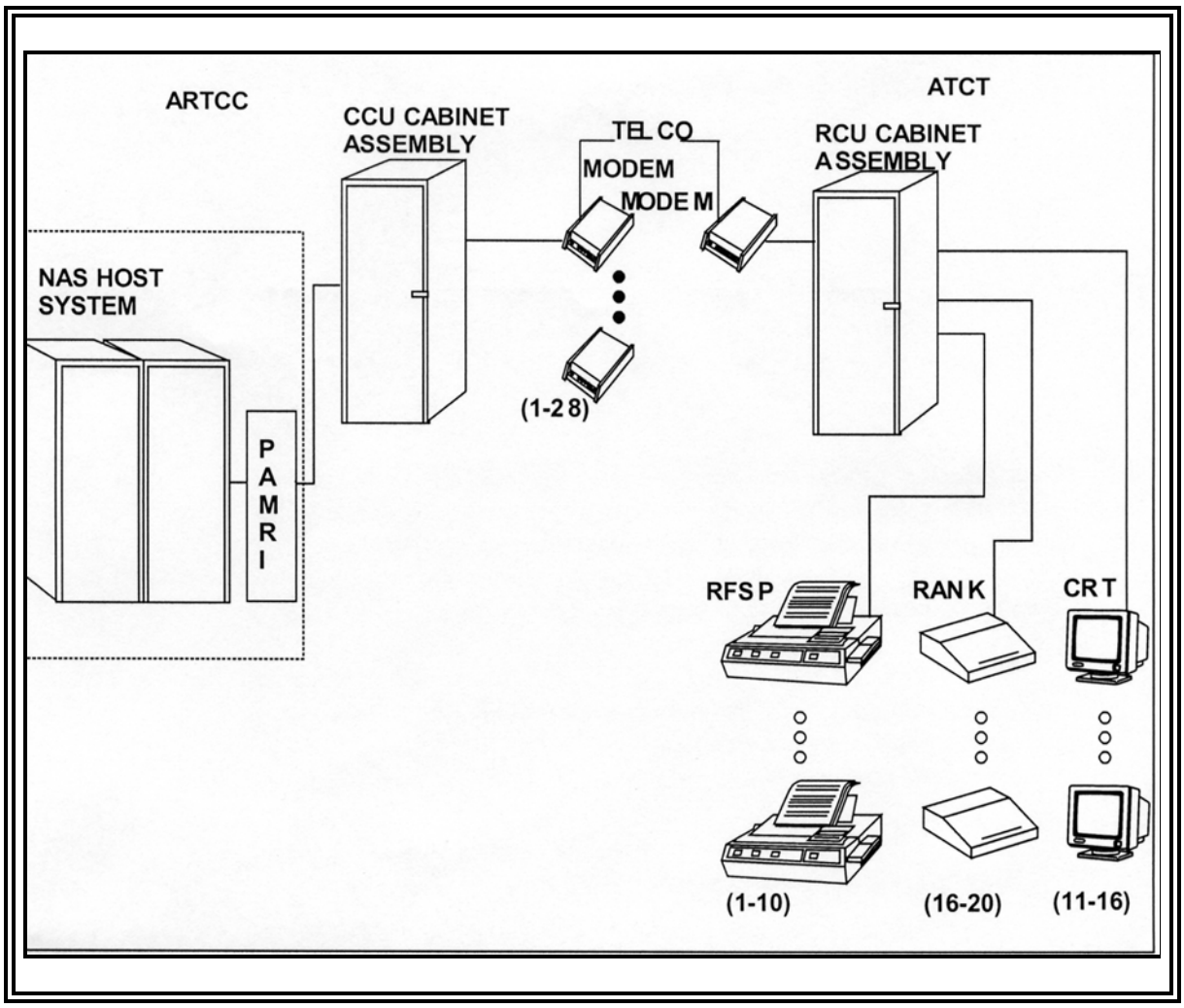

Figure 2-1. FDIO System Components

The FDIO system allows ATCTs to interface via modems with the Central Control Unit (CCU) in the ARTCC. The CCU is connected to the Host computer via a Peripheral Adaptation Module Replacement Item (PAMRI).

SYSTEM COMPONENTS

Central Control Unit (CCU)

The CCU is a control element that provides interface between the Host computer and up to 28 Remote Control Units (RCUs) through modems.

This component is located only in the ARTCC.

Remote Control Unit (RCU)

The RCU is a control element that receives signals from the modem connected to the CCU at the ARTCC. The RCU routes these signals to the appropriate device at the ATCT.

This component is located only at the remote sites.

Replacement Alphanumeric Keyboard (RANK)

The RANK is a peripheral element in the ATCT that allows the operator to compose, edit, and enter messages into the FDIO system. Two different types of RANK are used in ATCTs, but they function similarly.

An RCU can accommodate up to 5 RANKs.

Cathode Ray Tube (CRT)

The CRT is a peripheral element in the ATCT that is used to display flight strip messages, general information messages, weather data, and a composition (preview) and editing area for FDIO messages. Three different CRTs are used, but they function similarly.

An RCU can accommodate up to 5 CRTs.

Replacement Flight Strip Printer (RFSP)

The RFSP is a peripheral element in the ATCT that provides a printout of flight strip messages. In addition, it prints out pertinent flight data, echoes locally composed FDIO messages, and logs error messages at the ATCT.

An RCU can accommodate up to 10 RFSPs.

NOTE: There are several different types of flight strip printers available. The printer in use will vary from facility to facility.

Modulator/Demodulator (Modem)

The modem provides communication between the ARTCC CCU and the ATCT RCU through commercial telephone transmission lines.

CHAPTER 3: EQUIPMENT OPERATION

INTRODUCTION

This chapter examines each of the peripheral elements (RANK, CRT, and RFSP) in detail. The various functions, indicators, status lamps, and switches for each of the models currently in use in the field are explained.

In addition, any routine operator maintenance such as adjusting forms and changing paper or ribbon cassettes are covered as applicable. Facility directives should specify which, if any, of these routine maintenance procedures are to be carried out by Air Traffic personnel and which are to be handled by Airway Facilities personnel. Before performing any such procedures shown for FDIO equipment covered in this manual, be sure to refer to the appropriate documents.

REPLACEMENT ALPHANUMERIC KEYBOARD (RANK)

The RANK is a peripheral device used to compose, edit, and enter messages into the FDIO system.

Pairing with Other Devices

The RANK is paired with either a Cathode Ray Tube (CRT) or a Replacement Flight Strip Printer (RFSP). If the RANK is paired with a CRT, the backup device is always an RFSP. If the CRT should fail, data that would normally be echoed on the CRT would be echoed on the RFSP. Additionally, when the RANK is paired with a CRT, a visible cursor indicates the next logical entry position in the message composition area. When the RANK is paired with an RFSP, there is no visible cursor. One line is echoed at a time rather than one character at a time.

To verify proper RANK-CRT pairing, press several keys on the RANK. These characters should be echoed on the paired CRT. To verify proper RANK-RFSP pairing, press several keys on the RANK and then press the NEW LINE key. The characters should print at the paired RFSP.

RANK Model Designators

There are two models of RANKs:

1. Model FA 10095/3
2. Model FA 10095/17

RANK MODEL FA 10095/3

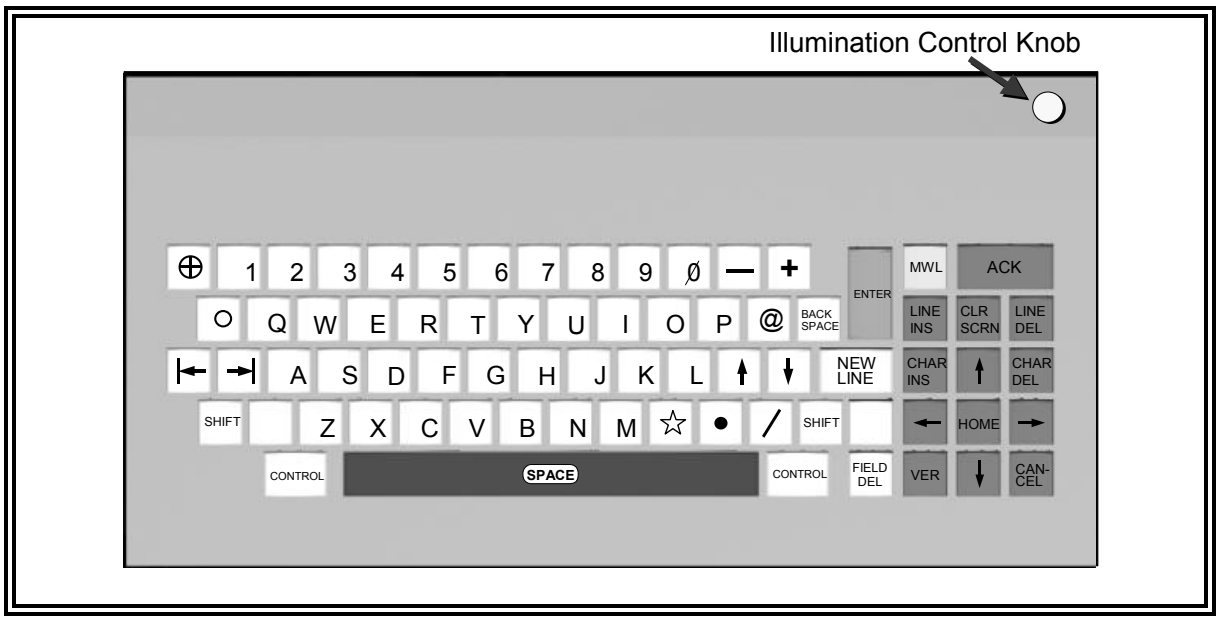

Figure 3-1. RANK Model FA 10095/3

Controls/Indicators

The ON/OFF power switch is located at the back of the RANK peripheral element.

The FA 10095/3 RANK is divided into two basic sections by color. The white section is for message entry, and the blue section is for message editing. Two other colors also occur on this RANK. The ENTER key is green, and the MWL (Message Waiting Light) indicator is yellow.

All keys, including the space bar, are illuminated. A control knob located in the top right corner of the RANK is used to control keyboard illumination. Increased brightness is obtained by turning the knob clockwise. A built-in stop prevents extinguishing keyboard illumination.

The keyboard is laid out in standard typewriter format. With the exception of the ACK (Acknowledge) key, all keys affect the composition area of the display only. The control functions are always constant; they are not affected by pressing the SHIFT or CONTROL keys.

When the VERIFY mode is selected, the system will check each field of the message when the ENTER key is pressed. If the message is accepted, it is sent to the Host computer. If the message is not accepted, an indication is displayed at the RANK echo device, corrections may be made, and the message may be resubmitted. Once the message is accepted, the VERIFY mode is turned off.

The RANK is unavailable when a message is being verified or when the MWL is flashing.

RANK MODEL FA 10095/3 (Cont'd)

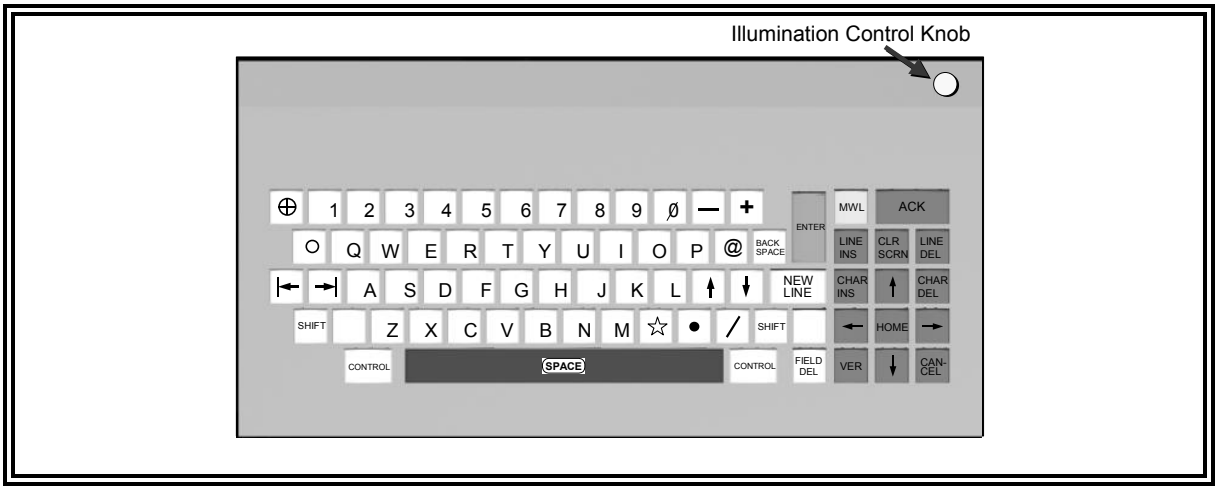

Figure 3-1. RANK Model FA 10095/3

Controls/Indicators (Cont'd)

CONTROL/ INDICATOR	FUNCTION
⊕	Special character that indicates overcast weather
O (Left of Q key)	Special character that indicates clear weather
|←	Moves the cursor to the beginning of the previous field
→|	Moves the cursor to the beginning of the next field
BLANK keys (2)	No function - reserved for future use
ENTER	Sends completed message as presented to the Host computer
MWL	Flashes when a flight strip or GI message is waiting to be displayed on the CRT
ACK	Acknowledges a flight strip or GI message sent to the CRT
LINE INS	Inserts a line at the cursor (The bottom line is deleted.)
CLR SCRN	Clears the message entry area
LINE DEL	Deletes the line at the cursor (All lines below the cursor are moved up one line. A blank line is inserted at the bottom.)
NEW LINE	Causes the current RANK message to be output to its paired printer
CHAR INS	Inserts a blank space at the cursor location; moves the remainder of the line one position to the right
↑	Moves the cursor up one line
CHAR DEL	Deletes the character at the cursor location; moves the remainder of the line one position to the left
←	Moves the cursor one position to the left
HOME	Moves the cursor to the beginning of the composition area
→	Moves the cursor one position to the right
FIELD DEL	Deletes the field at the cursor location
VER	Toggle switch that puts the system into or out of the VERIFY mode
↓	Moves the cursor down one line
CANCEL	Cancels the entire entry; clears the screen; returns the system to the NON-VERIFY mode

RANK MODEL FA 10095/17

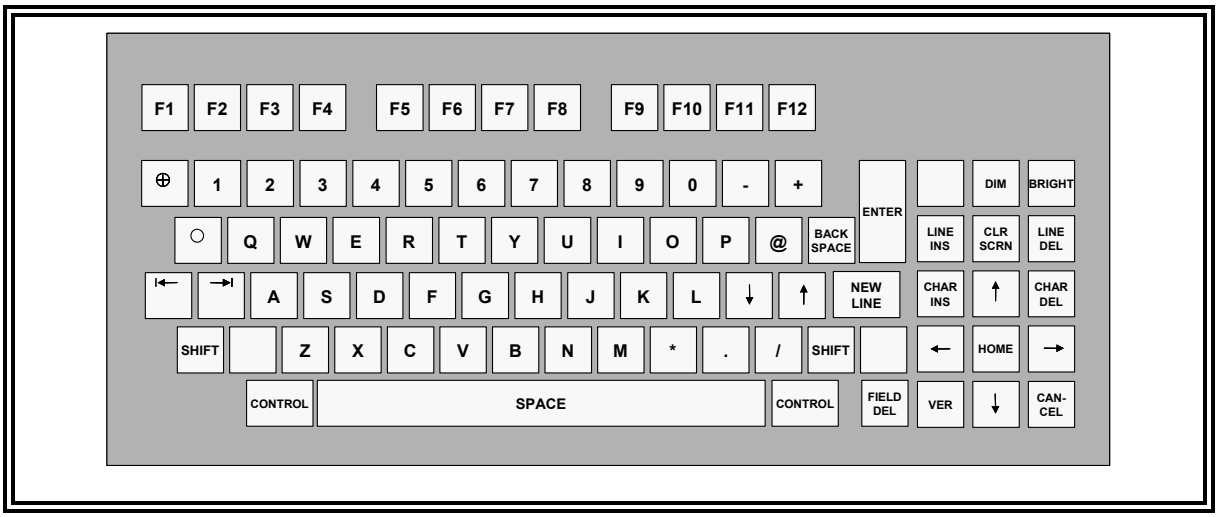

Figure 3-2. RANK Model FA 10095/17

Controls/Indicators

The ON/OFF power switch is located at the back of the RANK peripheral element.

The FA 10095/17 RANK is divided into three basic sections by function. The alphanumeric section is for message entry. The keypad to the far right is for editing messages. The top row of function keys is reserved for future use.

The keyboard is laid out in standard typewriter format. However, the control functions are always constant; they are not affected by pressing the SHIFT or CONTROL keys.

All keys, including the space bar, are illuminated. The DIM and BRIGHT keys located at the upper right on the keypad are used to control keyboard illumination. Increased brightness is obtained by pressing the BRIGHT key.

When the VERIFY mode is selected, the system will check each field of the message when the ENTER key is pressed. If the message is accepted, it is sent to the Host computer. If the message is not accepted, an indication is displayed at the RANK echo device, corrections may be made, and the message may be resubmitted. Once the message is accepted, the VERIFY mode is turned off.

The RANK is unavailable when a message is being verified.

RANK MODEL FA 10095/17 (Cont'd)

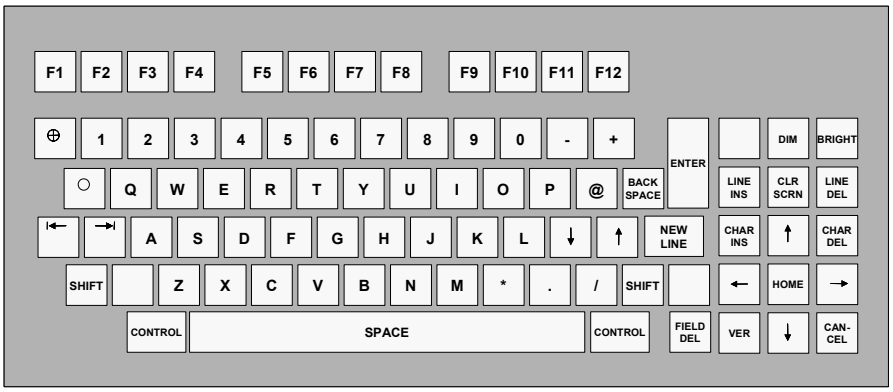

Figure 3-2. RANK Model FA 10095/17

Controls/Indicators (Cont'd)

CONTROL/ INDICATOR	FUNCTION
F1-F12 keys	No function - reserved for future use
⊕	Special character that indicates overcast weather
O (Left of Q key)	Special character that indicates clear weather
|←	Moves the cursor to the beginning of the previous field
→|	Moves the cursor to the beginning of the next field
BLANK keys (3)	No function - reserved for future use
ENTER	Sends completed message as presented to the Host computer
DIM	Adjusts the brightness of the key characters
BRIGHT	Adjusts the brightness of the key characters
LINE INS	Inserts a line at the cursor (The bottom line is deleted.)
CLR SCRN	Clears the message entry area
LINE DEL	Deletes the line at the cursor (All lines below the cursor are moved up one line. A blank line is inserted at the bottom.)
NEW LINE	Causes the current message to be output to its paired printer
CHAR INS	Inserts a blank space at the cursor location; moves the remainder of the line one position to the right
↑	Moves the cursor up one line
CHAR DEL	Deletes the character at the cursor location; moves the remainder of the line one position to the left
←	Moves the cursor one position to the left
HOME	Moves the cursor to the beginning of the composition area
→	Moves the cursor one position to the right
FIELD DEL	Deletes the field at the cursor location
VER	Toggle switch that puts the system into or out of the VERIFY mode
↓	Moves the cursor down one line
CANCEL	Cancels the entire entry; clears the screen; returns the system to the NON-VERIFY mode

CATHODE RAY TUBE (CRT)

The CRT display is a peripheral device that provides both a display area for messages that have been printed by a printer and an area for composing and editing FDIO messages.

The CRT screen is a high-resolution, 12.5-inch viewing area that displays green phosphor characters on a dark green background.

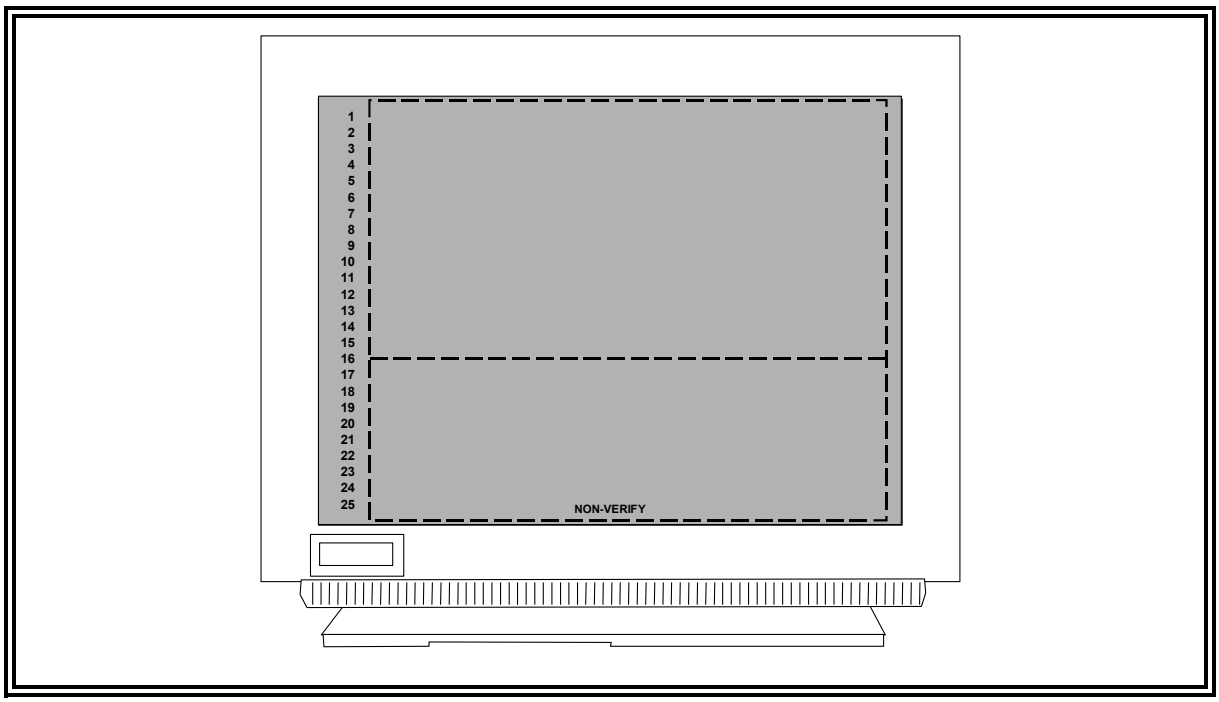

Figure 3-3. CRT Viewing Area

The viewing area is comprised of 25 lines and 80 columns. It is divided into two sections. In the first section, Lines 1-15 are used to scroll messages from the printer paired with the CRT. In the second section, Lines 16-24 are used for message composition and entry and Line 25 is used to indicate whether the system is in the VERIFY or NON-VERIFY mode.

Pairing with Other Devices

The CRT is paired with a RANK at most sites. It may be paired with an RFSP, in which case messages printed on the printer are displayed on the CRT paired with the printer.

CRT Model Designators

There are three models of CRTs commonly in use:

1. Model FA 10095/4
2. Model FA 10095/12
3. Model FA 10095/18

CRT MODEL FA 10095/4

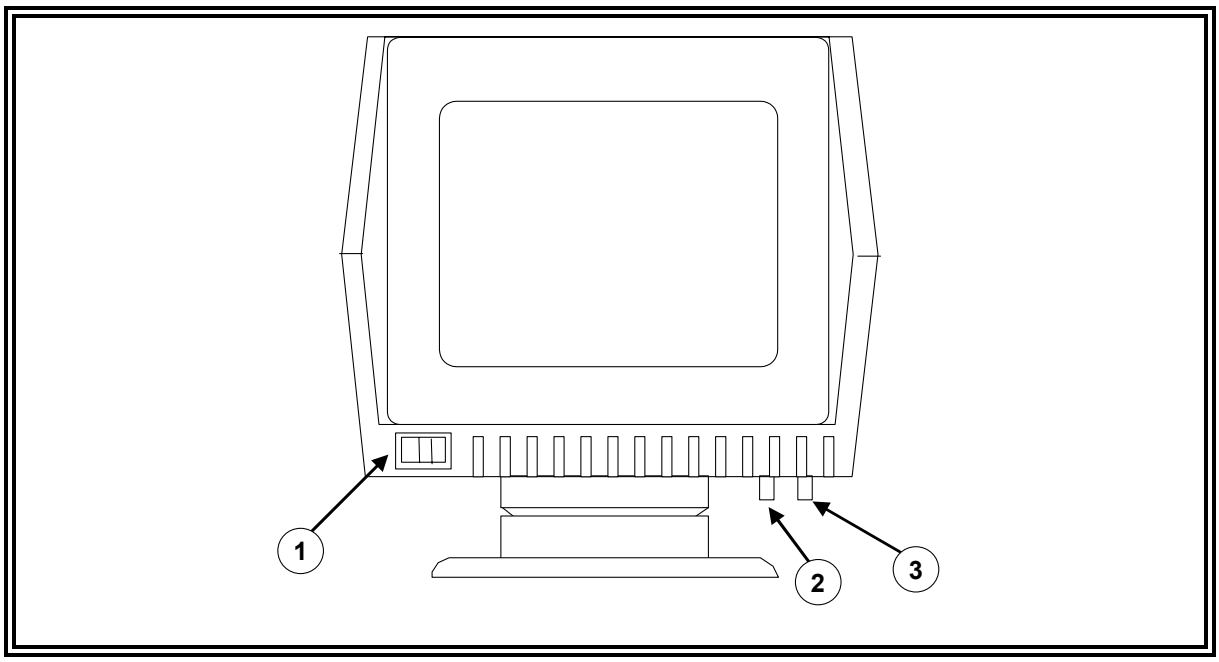

Figure 3-4. CRT Model FA 10095/4

Controls

CONTROL	FUNCTION
1 - POWER ON-OFF	Circuit breaker that controls power to the unit
2 - CONTRAST	Variable resistor knob that controls screen intensity
3 - BRIGHTNESS	Variable resistor knob that controls screen brightness

CRT MODEL FA 10095/12

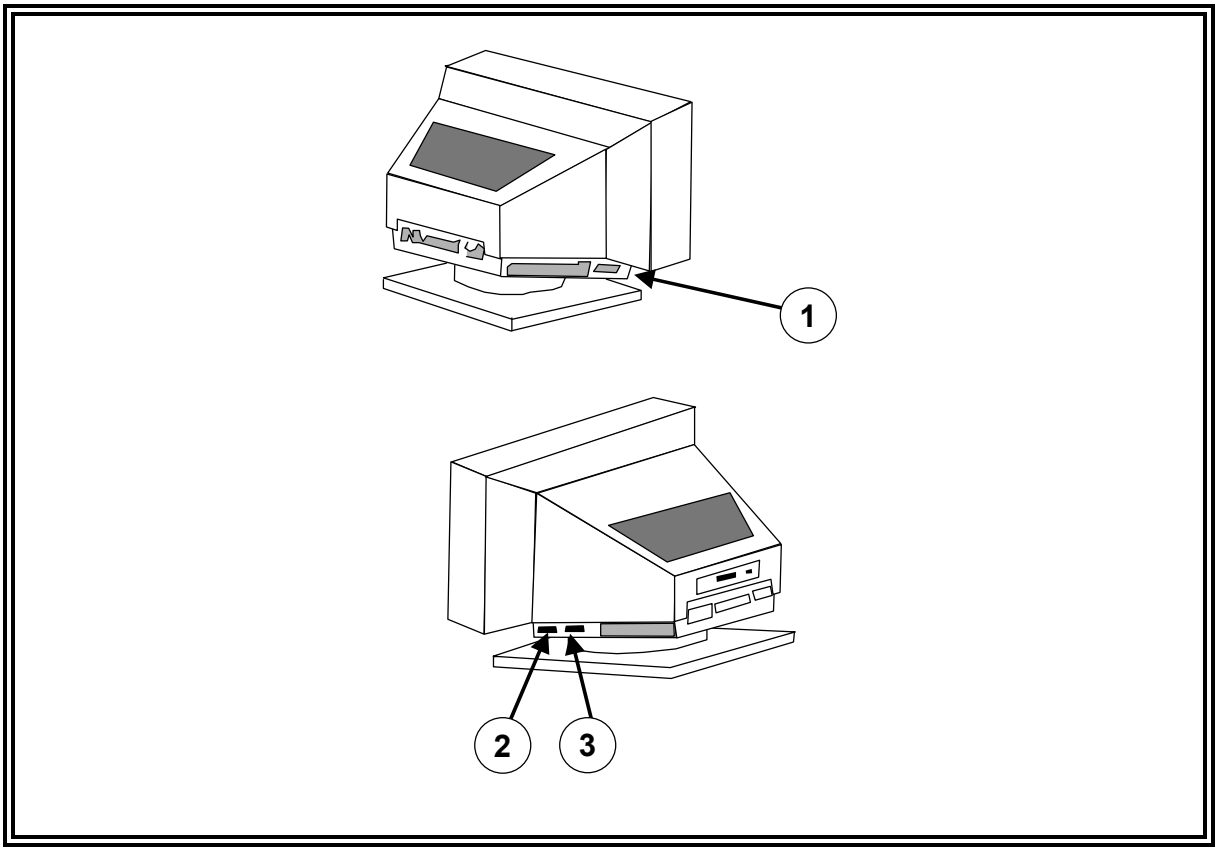

Figure 3-5. CRT Model FA 10095/12

Controls

CONTROL	FUNCTION
1 - POWER ON-OFF	Circuit breaker that controls power to the unit
2 - CONTRAST	Dial that controls screen intensity
3 - BRIGHTNESS	Dial that controls screen brightness

CRT MODEL FA 10095/18

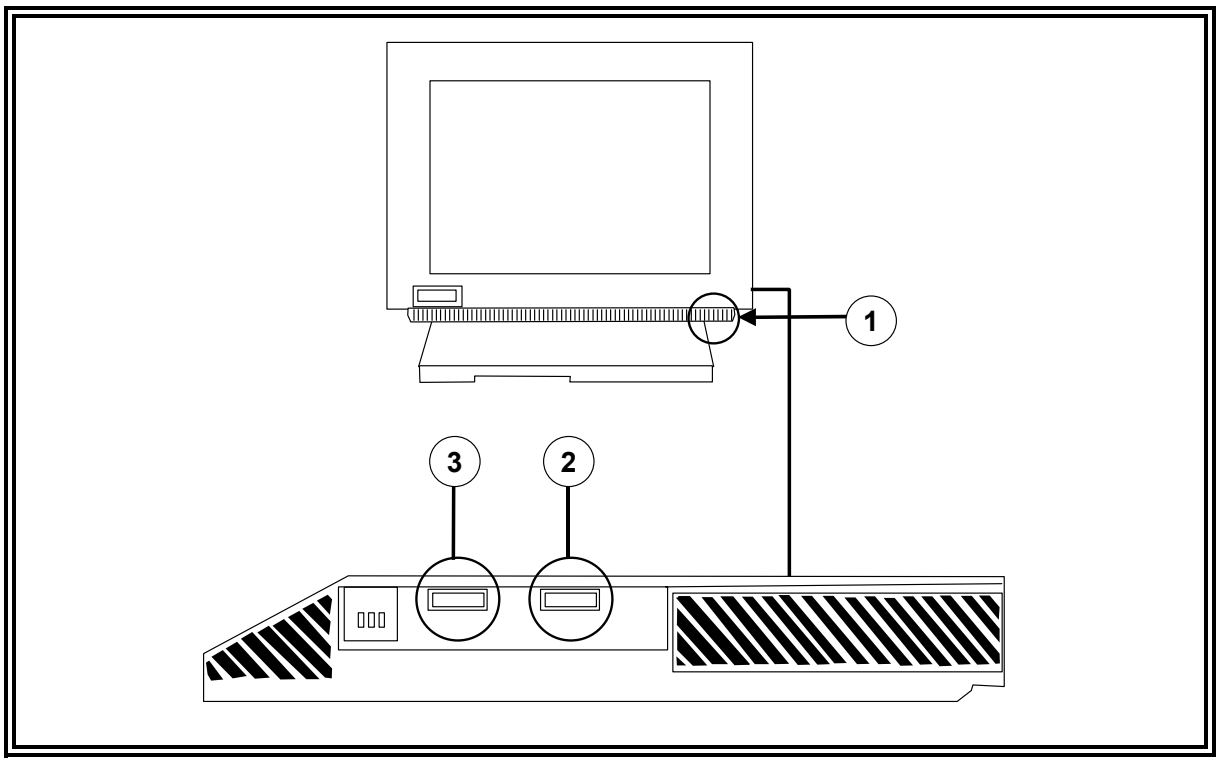

Figure 3-6. CRT Model FA 10095/18

Controls

CONTROL	FUNCTION
1 - POWER ON-OFF	Circuit breaker that controls power to the unit
2 - CONTRAST	Variable resistor knob that controls screen intensity
3 - BRIGHTNESS	Variable resistor knob that controls screen brightness

REPLACEMENT FLIGHT STRIP PRINTER (RFSP)

The RFSP is a peripheral device that prints out various types of messages. It can receive input from either the Host computer or a RANK.

Pairing with Other Devices

RFSPs have only one backup, either another RFSP or a CRT.

RFSPs may be paired with a RANK. If paired with a RANK, the RFSP will echo one line of data at a time.

An RFSP is always the backup device for a CRT that is paired with a RANK.

RFSP Model Designators

There are three models of RFSPs commonly in use:

1. Model FA 10095/2
2. Model FA 10095/11
3. Model FA 10095/14

Two of the printers (Models FA 10095/2 and FA 10095/11) utilize a ribbon cassette and are 71-column dot matrix printers with near letter quality printing. The third printer (Model FA 10095/14) uses thermal printing technology and requires heat-sensitive paper. The Model FA 10095/14 is intended to eventually replace the two dot matrix printers.

RFSP MODEL FA 10095/2

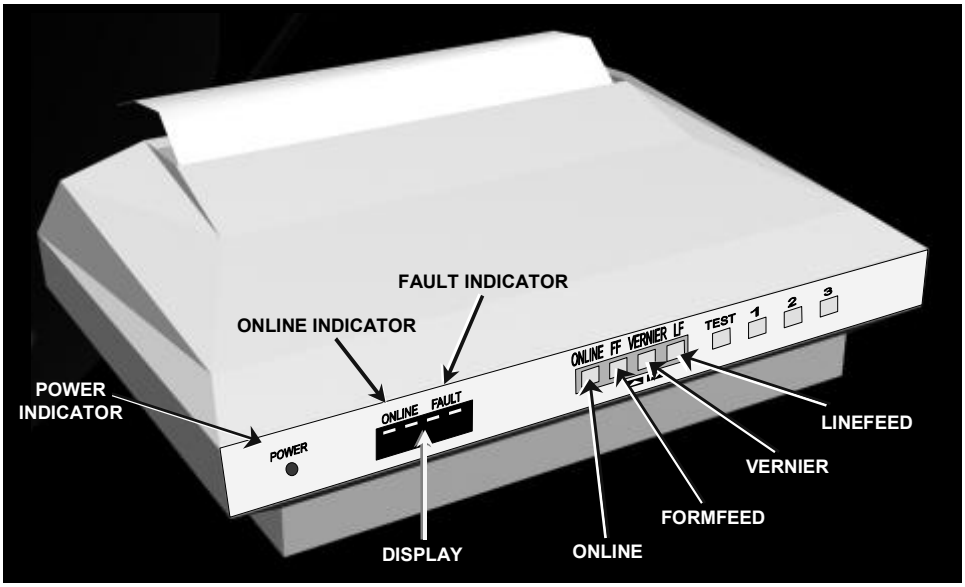

Figure 3-7. RFSP Model FA 10095/2

Controls/Indicators

CONTROL/INDICATOR	DESCRIPTION
POWER INDICATOR	Lamp that illuminates while the power is on
DISPLAY	Four 7-segment characters that provide a fault code
ONLINE INDICATOR	Lamp that indicates on-line status
FAULT INDICATOR	Lamp that flashes alternately with the display when a fault condition exists
ONLINE	Button that toggles the printer on line and off line manually
FORMFEED (FF)	Button that advances paper to the tear position
VERNIER	Button that enables line adjustment 1. When pressed simultaneously with FORMFEED, paper advances continuously until the buttons are released. 2. When pressed simultaneously with LINEFEED, paper retracts until the buttons are released.
LINEFEED (LF)	Button that advances the paper one line
POWER ON-OFF	Rocker switch that controls printer power

RFSP MODEL FA 10095/2 (Cont'd)

Operator Maintenance - Installing Strips

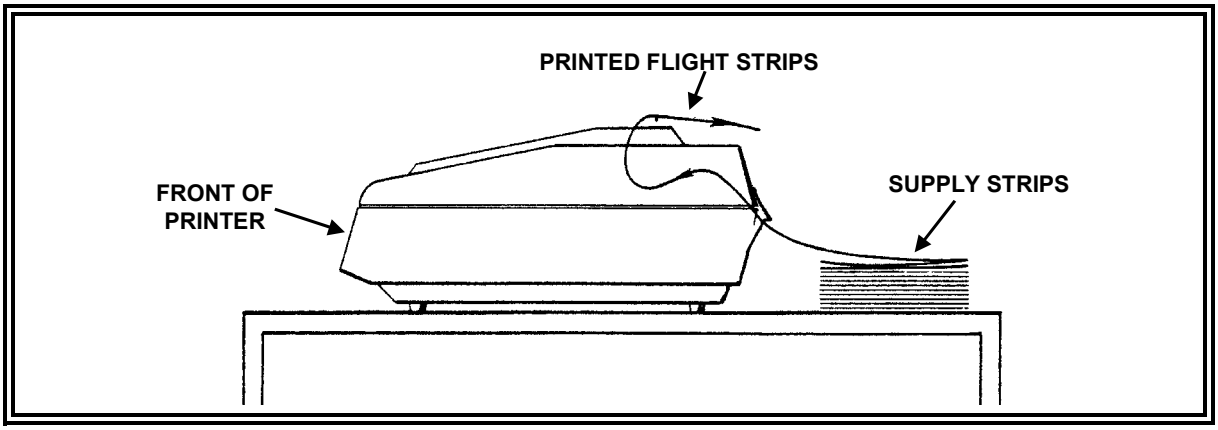

Figure 3-8. Installing Strips Steps 1-3

STEP	ACTION
1	Flip the printer power switch to OFF (located at back of unit on left).
2	Place the flight strip paper behind the printer and bring the first page of strips up to the tractors.
3	Tilt the top cover to the vertical position.

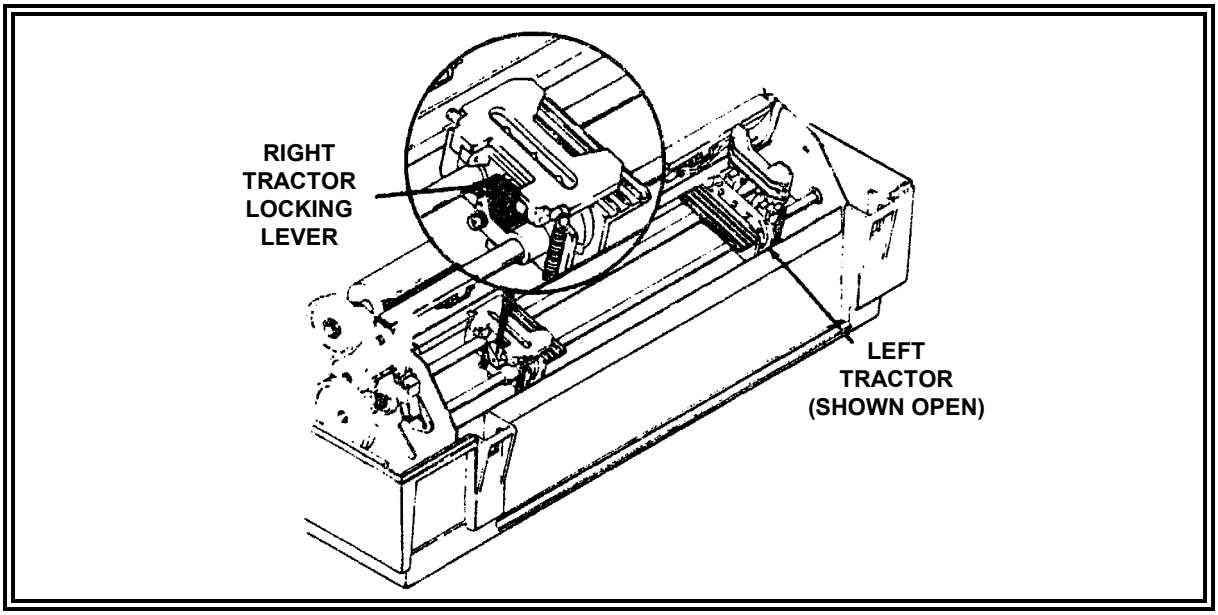

Figure 3-9. Installing Strips Steps 4-6

STEP	ACTION
4	Open the left tractor to expose the tractor pins.
5	Align the first 4 or 5 holes of the edge of the first page of strips with the left tractor pins and close the tractor.
6	If necessary, unlock the right tractor and align it with the right side of the flight strips.

RFSP MODEL FA 10095/2 (Cont'd)

Operator Maintenance - Installing Strips (Cont'd)

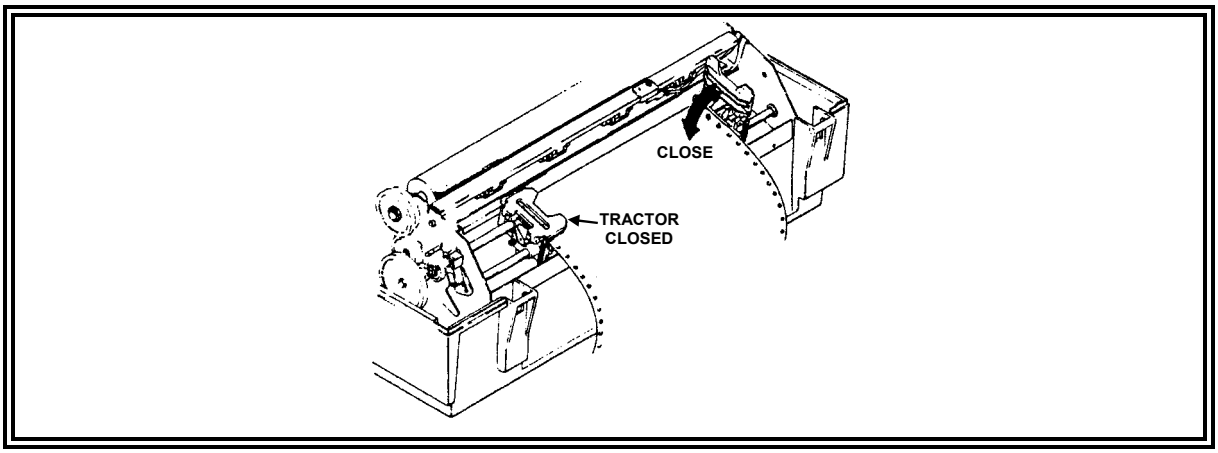

Figure 3-10. Installing Strips Steps 7-10

STEP	ACTION
7	Open the right tractor and align the same number of holes as on the left tractor. Close the tractor. Reposition the tractor to remove slack, and lock it in place.
8	Open the paper bail.
9	Flip the printer power switch to ON. (The flight strip paper will be fed automatically to the bail capture position.)
10	After the printhead moves to the left and right margin, close the bail and the top cover.

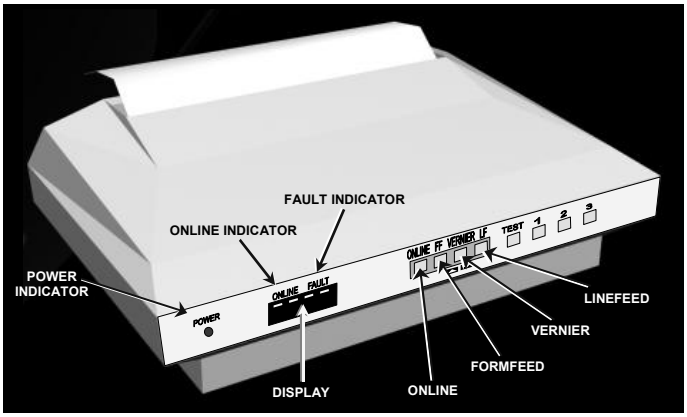

Figure 3-11. Installing Strips Steps 11-13

STEP	ACTION
11	Move the perforation of the flight strip paper to the tear bar by pressing VERNIER simultaneously with either FORMFEED or LINEFEED.
12	Set the top-of-form by pressing the VERNIER and ONLINE buttons simultaneously.
13	Press the ONLINE button, which places the printer on line and move the form to the first print position.

RFSP MODEL FA 10095/2 (Cont'd)

Operator Maintenance - Changing the Ribbon Cassette

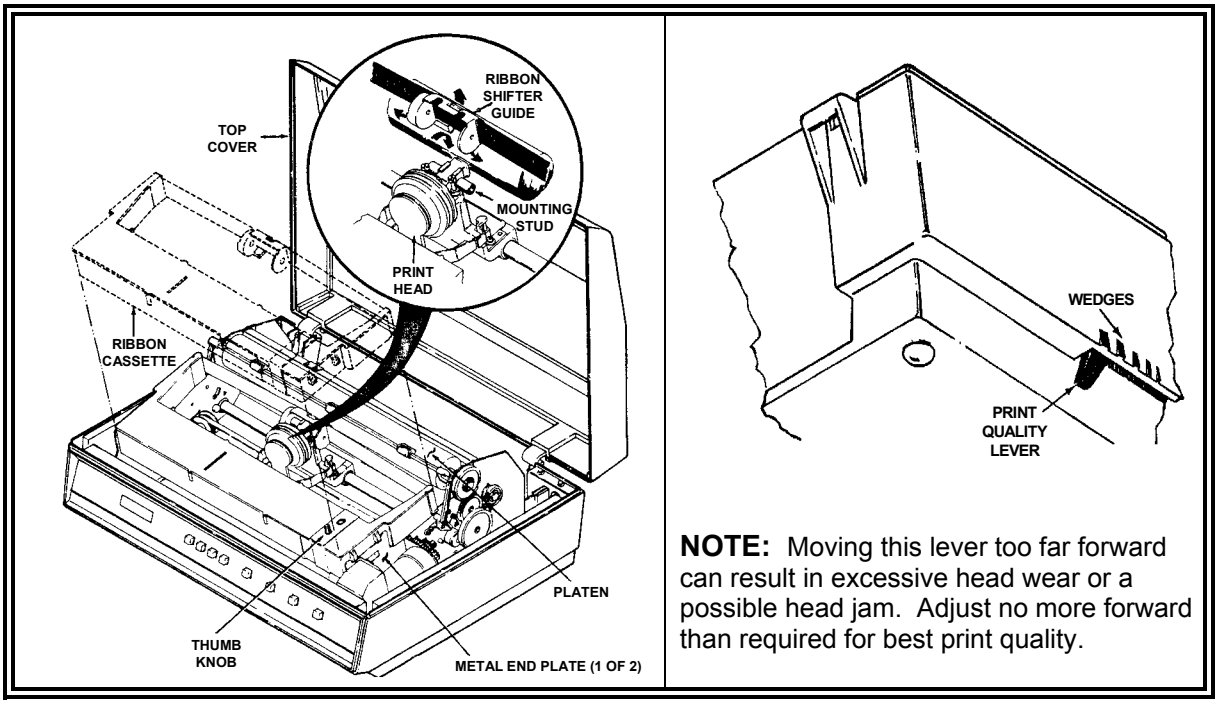

Figure 3-12. Changing Ribbon Cassette

STEP	ACTION
1	Flip the printer power switch to OFF (located at back of unit on left).
2	Tilt the top cover to the vertical position.
3	Move the print-quality lever (located at lower left rear of unit) rearward to Position 5 to obtain the greatest clearance between the printhead and platen.
4	Carefully move the printhead to the middle of the platen.
5	Rotate the top of the ribbon shifter guide toward the front of the printer and, prying outward at the outer edges of the guide, lift the guide out past the printhead.
6	Lift up and remove the ribbon cassette.
7	Remove the white plastic ribbon holder from the ribbon cassette.
8	Align the new cassette and set it down onto the metal end plates, pressing downward until both ends snap into place.
9	Carefully position the ribbon shifter guide and slip it into place between the printhead and platen. The guide should snap easily into place onto mounting studs and rotate ¼ turn toward the platen.
10	Take up ribbon slack by turning the thumb knob clockwise and set the print-quality lever to the proper position.
11	Close the top cover.
12	Flip the printer power switch to ON.
13	Place the print-quality lever in the desired position.

RFSP MODEL FA 10095/11

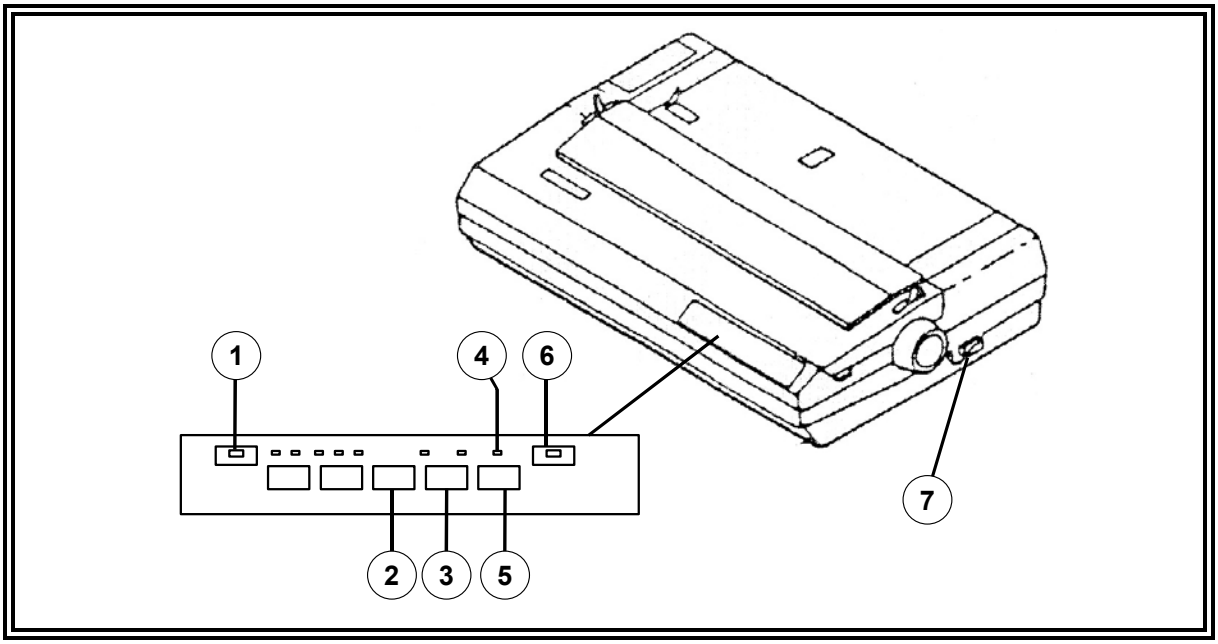

Figure 3-13. RFSP Model FA 10095/11

Controls/Indicators

CONTROL/INDICATOR	DESCRIPTION
1 - FAULT	Lamp that flashes to indicate a fault condition
2 - FORMFEED (FF)	Button that advances paper to the first line of the next form
3 - LINEFEED (LINE FD)	Button that advances paper one line (Printer must be off line)
4 - ONLINE	Lamp that illuminates when the printer is on line
5 - ON/OFFLINE	Button that toggles the printer on line and off line manually
6 - POWER INDICATOR	Lamp that illuminates when power is on
7 - POWER ON-OFF	Switch that controls power to the unit

RFSP MODEL FA 10095/14

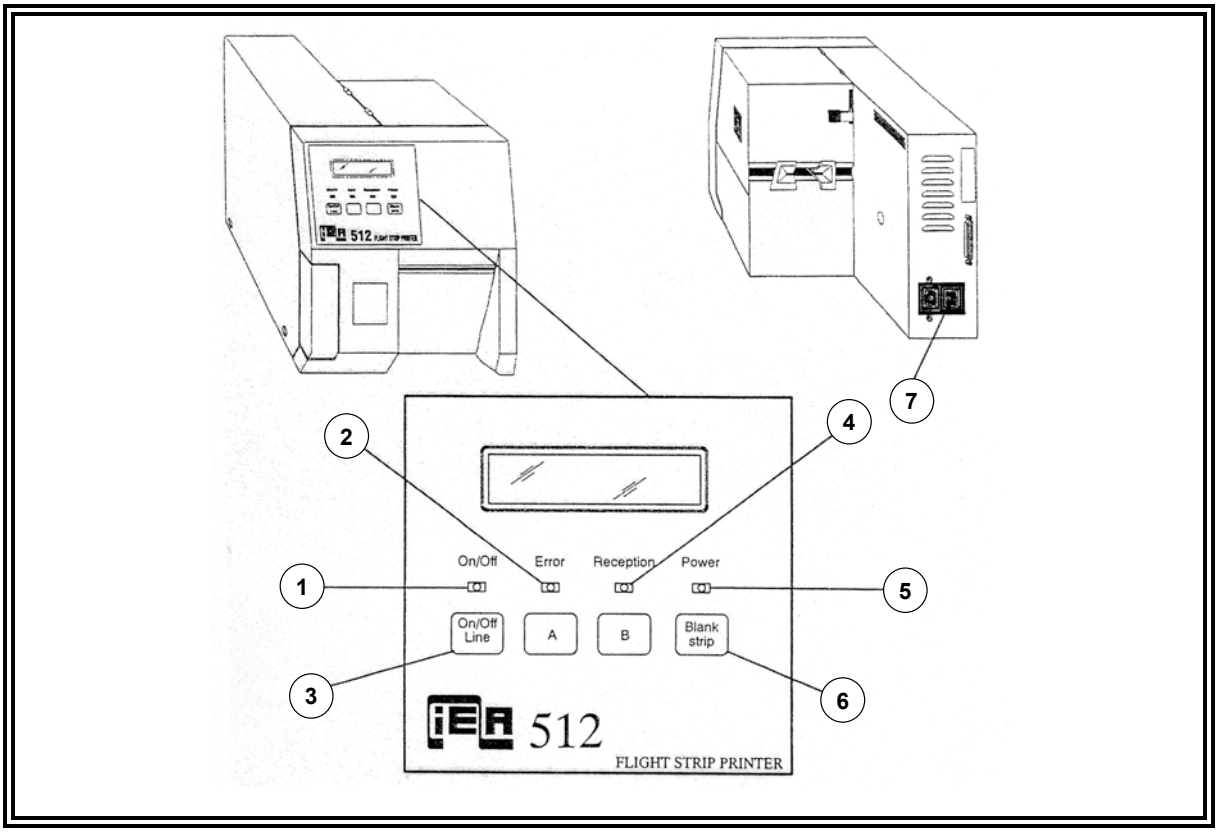

Figure 3-14. RFSP Model FA 10095/14

Controls/Indicators

CONTROL/INDICATOR	DESCRIPTION
1 - ONLINE	Lamp that illuminates when on line
2 - ERROR	Lamp that, when illuminating, indicates mechanical error and, when flashing, indicates an error in message reception
3 - ON/OFFLINE	Button that toggles the printer on line and off line manually
4 - RECEPTION	Lamp that indicates printer is receiving a message
5 - POWER	Lamp that indicates the printer is on
6 - BLANK STRIP	Button that prints a blank strip
7 - POWER ON-OFF	Switch that controls power to the unit

RFSP MODEL FA 10095/14 (Cont'd)

Operator Maintenance - Installing Strips

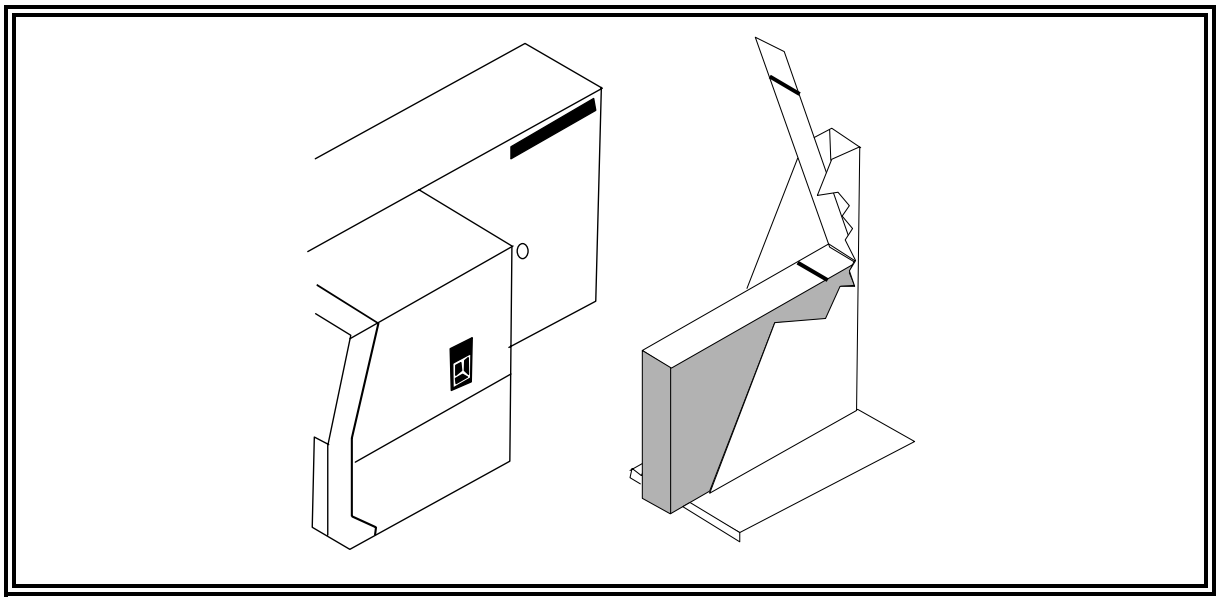

Figure 3-15. Installing Strips Step 1

STEP	ACTION
1	Install a stack of flight strips in the dispenser box such that the black marks on the strips face down.

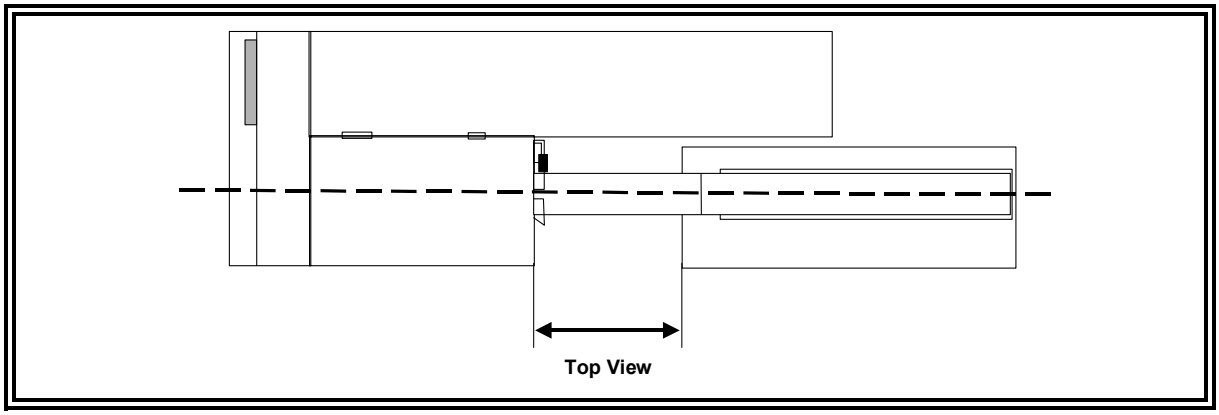

Figure 3-16. Installing Strips Step 2

STEP	ACTION
2	Place the flight strip dispenser box at the rear of the printer in such a way that the stack of flight strips is centered in relation to the paper path and the dispenser box is placed at an adequate distance from the printer so that media flow is smooth.

RFSP MODEL FA 10095/14 (Cont'd)

Operator Maintenance - Installing Strips (Cont'd)

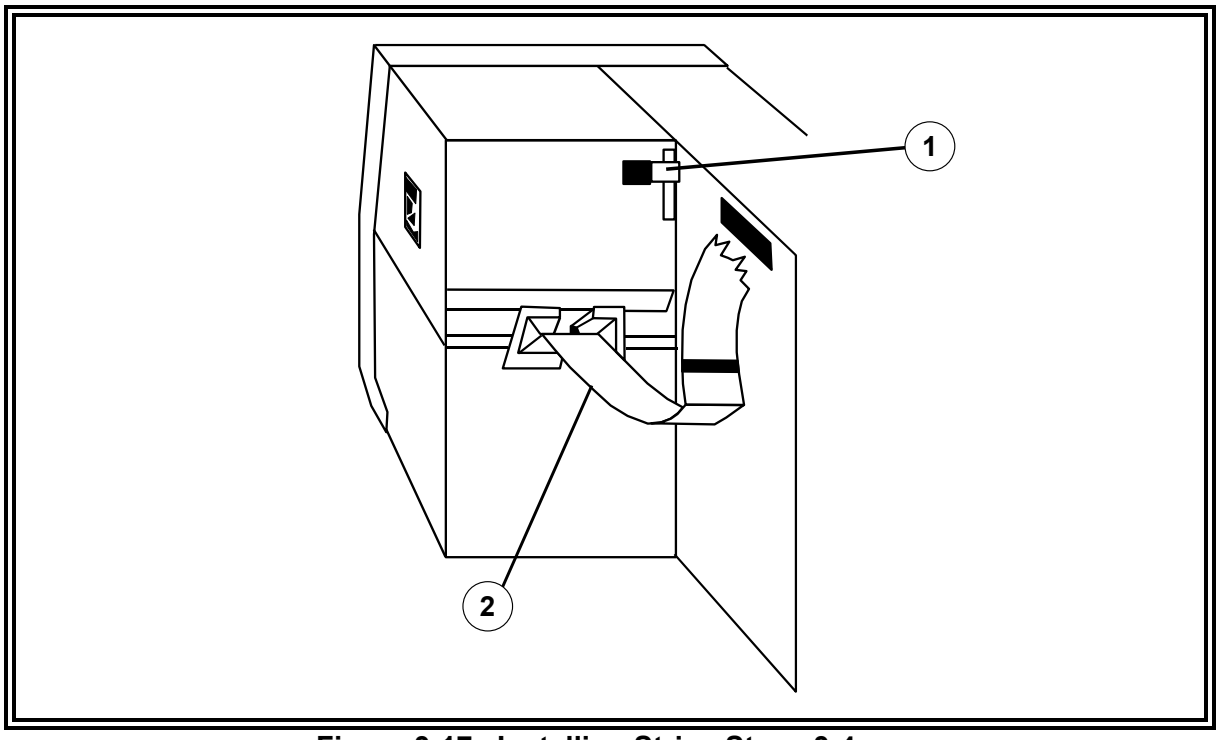

Figure 3-17. Installing Strips Steps 3-4

STEP	ACTION
3	The flight strip edge with the black mark next to it is considered the leading edge. Move the printhead lever (1) up and feed the leading edge of the flight strip (2) into the paper guides of the insertion slot until the strip emerges from the ejection slot. (The motor will start operating to facilitate the operation.)
4	Lower the printhead lever (1). (The first strip will eject from the printer and separate from the stack.)

CHAPTER 4: MESSAGE FIELD FORMAT AND CONTENT

GENERAL

FDIO messages are composed of fields of data. These fields are made up of one or more items of information call elements. For any given type of FDIO message, certain fields are mandatory while other fields are optional. Likewise, for any given message field, some elements are required and others are optional.

The general rules for fields:

1. Fields are identified by a number, and in some cases, an abbreviation.

2. When composing FDIO messages, either the field number or the abbreviation may be used.

3. If a field number has a leading zero (e.g., “06”), the zero is optional.

4. Fields are separated from each other by a space.

5. Elements within a field are separated from each by one of the following:

   a. A slant (/)
   b. A period (.)
   c. Two periods (..)

   The correct usage of these field separators will be shown later in this chapter.

6. Field elements have a specific format that must be followed, otherwise the message will not be accepted by the Host computer.

The following table explains the coding used to define the format for each of the message fields presented in this chapter.

LETTER/ SYMBOL	MEANING
L	Represents a letter
a	Represents an alphanumeric character (letter, number, symbol, etc.)
d	Represents a digit
( )	Indicates that the field or data is optional

FIELD NUMBERS AND ABBREVIATIONS

This manual covers the seventeen FDIO messages most commonly used by terminal ATC facilities. The field numbers and abbreviations listed below are used to compose those messages.

FIELD NUMBER	ABBREVIATION	FIELD NAME
01	MSG	Message Type
02	AID	Aircraft Identification
03	TYP	Aircraft Data
04	BCN	Beacon Code
05	SPD	Speed
06	FIX	Coordination/Departure Fix
07	TIM	Coordination Time
08	ALT	Assigned Altitude
09	RAL	Requested Altitude
10	RTE	Route
11	RMK	Remarks
12		Field Reference
13		Location Identifier
15		Message Cancellation
16		Output Routing
17		Amendment/Correction Data
18		Progress Report Data
21		Hold Data
34		Altimeter Data
35		Data Entrance Time
45		Weather Data

NOTE: There are field numbers as large as 918. This chapter covers only those fields most commonly used in FDIO messages entered by terminal facilities. For a complete listing of all message fields, refer to NAS-MD-311, Message Entry and Checking, Appendix E.

FIELD CONTENT, FORMAT, AND REQUIREMENTS

Field 01 - Message Type

Message type is a unique two-letter designator entered in the first field to identify the type of message being entered for processing. The exception to this rule is a message being composed in response to an error message (see Chapter 5).

The following chart lists the message types most commonly used by terminal facilities. When used, the message type is separated from other fields by a space.

MESSAGE TYPE	DESIGNATOR	PURPOSE
Amendment	AM	To modify, add to, or delete previously filed data for a stored flight plan
Altimeter Setting	AS	To enter altimeter reference data for selected adapted stations
Departure	DM	To activate a proposed flight plan
Flight Plan	FP	To enter initial flight plan data in the computer
Flight Plan Readout	FR	To request a flight plan readout
General Information	GI	To enter information desired for output at a specified location
Hold	HM	To initiate, modify, terminate, or cancel a hold action for a specified flight
Progress Report	PR	To update the status of an active flight plan or to release a flight from holding
Restore ARTS Database	RB	To transmit current flight plan data for flight plans previously transmitted to the ARTS computer
Request Flight Plan Transfer	RF	To transmit flight plan data to an ARTS facility regardless of the scheduled time for transmission
Remove Strip	RS	To remove from computer storage all flight data and the associated track, if any, for a flight
ARTS-NAS Cancellation	RX	To cancel the stored data in the ARTCC program, but not in the ARTS program, of a flight plan that has been transmitted from NAS to ARTS
Stereo Flight Plan	SP	To enter an abbreviated flight plan
Strip Request	SR	To request printing or reprinting of one flight progress strip at a desired position for a specified flight
Test Device	TD	To provide an output test message to a specified output device
Weather Request	WR	To request printout or display of stored weather data for specified adapted stations
Weather	WX	To enter weather observation data for selected adapted reporting stations

Field 02 - Aircraft Identification (AID)

Field 02 contains the Aircraft Identification (AID), which may be the aircraft call sign, the Computer Identification number (CID), or the aircraft's assigned discrete beacon code.

When possible, use the CID instead of the call sign. There may be more than one flight plan in the system for the same aircraft. If so, the computer will not know which of the flight plans your message pertains to.

The aircraft may have proposed flight plans in the system for departures from several different airports. In this case, the departure airport may be specified in Field 02 in order to distinguish between flight plans.

Field 02 contains the following elements formatted in the order listed below:

ELEMENT	FORMAT	EXAMPLE(S)
Aircraft Call Sign or Computer Identification Number (CID) or Discrete Beacon Code	La(a)(a)(a)(a)(a) or ddd or ddL or dddd	N135CD VV25476 or AAL549 473 08A 2156
Element Separator	/	
Departure Point	aa(a)(a)(a)(/)(a)(a)(a)(a)(a)(a)	N12C/JAX
Field Separator	Space	

Field 02 requirements/remarks:

1. The field must contain at least 2 but not more than 20 characters.
2. The first character of a call sign must be a letter.
3. A call sign must match stored Aircraft Identification (except for initial flight plan entry).
4. A beacon code must consist of octal digits (0-7) only.
5. A beacon code must not have "00" as the last two digits.
6. There cannot be two active flight plans with the same Aircraft Identification or two identical proposed flight plans in the system at the same time.

Field 03 - Aircraft Data (TYP)

Field 03 is used to enter the number (if greater than 1) and type of aircraft and the equipment suffix. It also indicates if the aircraft is in the Heavy weight category or is a nonheavy B757.

Field 03 contains the following elements formatted in the order listed below:

ELEMENT	FORMAT	EXAMPLE(S)
Number of Aircraft and/or Heavy Jet or Nonheavy B757 Indicator, if applicable (i.e., H or F)	d(d) or d(L) or L	10 9H F
Element Separator	/	
Type of Aircraft	La(a)(a)	B52 C182 BE58
Element Separator	/	
Airborne Equipment Suffix	a [As adapted]	A
Field Separator	Space	

Example: A flight of four heavy C141 aircraft with an "A" equipment suffix would be entered as "4H/C141/A".

Field 03 requirements/remarks:

1. The field must contain at least 2 but not more than 9 characters.

2. If there is more than one aircraft in the flight, the number of aircraft must be specified.

3. If the Heavy Jet or Nonheavy B757 indicator is present:

   a. It must immediately precede the element separator.
   b. The number of aircraft in the flight cannot exceed 9.

4. The airborne equipment suffix must be an adapted equipment qualifier.

Field 04 - Beacon Code (BCN)

Field 04 contains the aircraft's assigned beacon code.

The format for Field 04 is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Beacon Code	dddd	4352 0600
Field Separator	Space	

Field 04 requirements/remarks:

1. The beacon code must consist of octal digits (0-7) only.
2. A discrete beacon code must not be in use by another aircraft.

Field 05 - Speed (SPD)

Field 05 contains the aircraft speed expressed as one of the following:

1. True Airspeed (in knots)
2. Mach Speed
3. Classified Speed

The format for Field 05 is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
True Airspeed or Mach Speed or Classified Speed	dd(d)(d) or Mddd or SC	495 M087 SC
Field Separator	Space	

Field 05 requirements/remarks:

1. The field must contain at least 2 but not more than 4 characters.
2. Four digits of speed expressed in knots cannot exceed 3700.
3. When "SC" is input, the equivalent numeric speed is in NAS adaptation.

Field 06 - Coordination/Departure Fix (FIX)

Field 06 contains the coordination fix for active flight plans or the departure fix for proposed flight plans.

A fix in Field 06 is generally described as one of the following:

1. Two- or three-character fix, e.g., OKC
2. Five-character fix or intersection, e.g., ATOKA
3. Fix/radial/distance, e.g., OKC120035
4. Latitude/longitude, e.g., 3030/08141

NOTE: Compass locators have two-letter identifiers and may also be used as coordination fixes.

The format for Field 06 is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Coordination Fix or Departure Fix	aa(a)(a)(a)(/)(a)(a)(a)(a)(a)(a)	OMN BARBS CRG155025 3334/08248
Field Separator	Space	

Field 06 requirements/remarks:

1. The field must contain at least 2 but not more than 12 characters.

2. “S” (south latitude) and “E” (east longitude) must be entered if applicable.

3. “N” (north latitude) and “W” (west longitude), when omitted, are implied. They may be entered in Field 06 if desired. If either “N” or “W” is specified, both must be entered.

Field 07 - Coordination Time (TIM)

Field 07 contains the UTC time associated with the Field 06 fix.

Except when used in a Departure Message (DM), the time is prefixed by one of the following:

1. "E" for estimated time (active flight plan)
2. "P" for proposed departure time
3. "D" for actual departure time

Time may be entered as either of the following:

1. Four digits of time (e.g., 2245) where the first two digits represent hours and the last two digits represent minutes

2. Time relative to the current clock time

   Example: "XX25" means "current clock time plus 25 minutes."

The format for Field 07 elements is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Type of Time	L	E P D
Time	dddd or XXdd	1450 XX04
Field Separator	Space	

Field 07 requirements/remarks:

1. The field must contain at least 4 but not more than 5 characters.
2. When used in a Departure Message (DM), the type of time **SHALL** be omitted.
3. The digits "dd" in the "XXdd" format cannot exceed 99.

Field 08 - Assigned Altitude (ALT)

Field 08 contains the assigned altitude for an aircraft on an active flight plan.

The altitude may have one of the following descriptors:

1. "OTP" indicates the aircraft is operating VFR-on-top.
2. "VFR" indicates the aircraft is operating under Visual Flight Rules.

NOTE: "OTP" and "VFR" may be entered with or without an altitude following the descriptor.

3. "ABV" indicates the aircraft will maintain above an altitude.
4. "B" between two altitudes indicates the aircraft has been assigned a block of altitudes.

Field 08 may also include a fix between two altitudes. This means the aircraft will maintain the first altitude until the fix and then climb or descend to the second altitude after the fix.

The format for Field 08 is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Assigned Altitude	(d)dd or OTP or OTP/(d)dd or VFR or VFR/(d)dd or ABV/(d)dd or (d)ddB(d)dd or (d)dd/fix/(d)dd	70 OTP OTP/75 VFR VFR/135 ABV/600 130B150 40/ABC/80
Field Separator	Space	

Field 08 requirements/remarks:

1. The field must contain at least 2 but not more than 20 characters.
2. When specifying a fix, use the Field 06 fix criteria.
3. Altitude is expressed in hundreds of feet.
4. Altitudes expressed as a block are inclusive, and the lower altitude is always expressed first.

Field 09 - Requested Altitude (RAL)

Field 09 indicates the aircraft's requested altitude (proposed flight plan).

The format for Field 09 is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Requested Altitude	(d)dd or OTP or OTP/(d)dd or VFR or VFR/(d)dd or ABV/(d)dd or (d)ddB(d)dd	230 OTP OTP/165 VFR VFR/55 ABV/150 190B230
Field Separator	Space	

Field 09 requirements/remarks:

1. The field must contain at least 2 but not more than 7 characters.
2. Altitude is expressed in hundreds of feet.
3. Altitudes expressed as a block are inclusive, and the lower altitude is always expressed first.

Field 10 - Route (RTE)

Field 10 contains the aircraft route of flight.

The route field is comprised of two types of elements:

1. Fix elements, which describe geographic locations
2. Route elements, such as airways, direct routes between fixes, Instrument Departure Procedures (DPs), and Standard Terminal Arrival Routes (STARs)

Field 10 - Route (RTE) (Cont'd)

The following rules apply to element separators in Field 10.

1. If you have two consecutive fix elements or two consecutive route elements (like elements), separate them with two periods.

   Examples: OKC..TUL
   V6..V8

2. If you have consecutive route and fix elements (unlike elements), separate them with a single period.

   Example: OKC.V4.TUL

The format for Field 10 elements is shown below. Any of these elements may be used in Field 10 as applicable.

ELEMENT	FORMAT	EXAMPLE(S)
Fix Name	aa(a)(a)(a)	OKC
Fix/Radial/Distance	aa(a)(a)(a)dddddd	OKC180025
Latitude/Longitude	dddd(L)/(d)dddd(L)	2430N/8915W 2430/8915
PDR/PAR/PDAR Suppression	*	PHL*
Airway	aa(a)(a)(a)(a)(a)(a)	V13 V521 J78
Coded Route	aa(a)(a)(a)(a)(a)(a)	OB20 SAM2
DP	aa(a)(a)(a)d	PARK2
STAR	aa(a)(a)(a)d	FORTS1
Incomplete Route Indicator	XXX	XXX
Visual Flight Rules (VFR) Indicator	VFR	VFR
Defense Visual Flight Rules (DVFR) Indicator	DVFR	DVFR
Reentry Operator	+Rd(d) or +Sd(d) or +RD(d)+Sd(d)	+R4 +S3 +R7+S11
Stereo Tag	La(a)(a)(a)(a)(a)(a)	FOXTROT7
Estimated Time En Route (ETE)	/dddd	/0130
Estimated Time of Arrival (ETA)	/dddd	/1445
Delay Data	/D(d)d+dd	/D1+45
Element Separator	. or ..	OKC.V14 OKC..TUL
Tailoring Indicator	/	MIA./.CTY.V295
Routing Change Indicator	+	+TLH.V295.CTY+
Field Separator	Space	

Field 10 - Route (RTE) (Cont'd)

Field 10 requirements/remarks:

1. The first element in Field 10 must be a fix.
2. The maximum number of fields allowed is 48.
3. A stereo tag is a unique route name that, when used, must be the only element in Field 10.
4. If used, delay data must be suffixed to a fix, fix/radial/distance, or latitude/longitude, e.g., "JAX/D0+30" indicates a 30-minute delay at JAX.
5. To suppress the assignment of a PDR or PDAR, insert an asterisk (*) after the departure fix (the first fix in Field 10).
6. To suppress the assignment of a PAR or PDAR, insert an asterisk (*) after the destination fix (the last fix in Field 10).
7. If used, the DP must be the second element in Field 10.
8. If used, the STAR must be the next to last element in Field 10.
9. Flight plan processing stops at the "XXX" element.
10. "VFR" or "DVFR" are route elements.
    a. When filed as the second element of the field, they must be followed by a fix.
    b. If "VFR" or "DVFR" is included somewhere other than the second element of the field, flight plan processing stops at the "VFR" or "DVFR" element.
11. If used, an ETA/ETE must be suffixed to the last filed fix element.
    a. An ETE is filed with a proposed flight plan only.
    b. An ETA is filed with an active flight plan only.
12. Plus signs (+) bracketing a route in Field 10 indicate that subsequent strips for the aircraft will show the routing between the plus signs as the aircraft's route of flight.

Field 11 - Remarks (RMK)

Field 11 allows remarks to be entered into Flight Plan (FP), Stereo Flight Plan (SP), and General Information (GI) messages.

The format for Field 11 is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Remarks	⊕ followed by plain text and/or O followed by plain text	⊕ ONE VOR INOP and/or O REQ RAVEC WX
Field Separator	Space	

Field 11 requirements/remarks:

1. The symbol "⊕" is used for intrafacility remarks. Remarks are printed only on flight progress strips sent to the Host computer sectors and/or facilities.

2. The symbol "O" is used for interfacility remarks. Remarks will be printed on all strips from departure to destination.

3. If both symbols are used, "⊕" must be specified first.

4. The allowable length of Field 11 depends on the type of message and the capabilities of the input device.

   a. For FP messages, the intrafacility remarks are limited to 20 characters and the total number of interfacility and intrafacility remarks characters cannot exceed 40.

   b. For SP messages, the intrafacility remarks are limited to 21 characters and the interfacility remarks are limited to 121 characters.

Field 12 - Field Reference

When making an Amendment Message (AM), Field 12 is used to specify to the computer which field(s) to amend.

A field reference number is used to designate a field of stored data to be amended. An abbreviation, if one exists, may be used in lieu of the field reference number.

The format for Field 12 is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Field Reference Number or Abbreviation	(d)d or LLL	04 4 TYP RAL
Field Separator	Space	

Field 12 requirements/remarks:

1. The field must contain at least 1 but not more than 3 characters.
2. The field reference number must refer to a valid field number.
3. Leading zeros are optional.

Field 13 - Location Identifier

Field 13 may be used to identify any of the following:

1. ARTS facility in Restore ARTS Database (RB) and Request Flight Plan Transfer (RF) messages

2. Reporting stations in Altimeter Setting (AS), Weather Request (WR), and Weather (WX) messages

3. Strips requested by the fix posting identifier in a Strip Request (SR) message

    a. When used in an SR message, the fix posting may be identified as one of the following:

        i. Two- or three-character fix
        ii. Five-character fix/intersection
        iii. Fix/radial/distance
        iv. Latitude/longitude

The format for Field 13 is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Location Identifier	aa(a)(a)(a)(/)(a)(a)(a)(a)(a)(a)	MEM ADDAX MEM120026 3500/14000 JJJ
Field Separator	Space	

Field 13 requirements/remarks:

1. The field must contain at least 2 but not more than 12 characters.

Field 15 - Message Cancellation

Field 15 is used to cancel a message only in response to an Error message.

The format for Field 15 is shown below:

ELEMENT	FORMAT	EXAMPLE(S)
Message Cancellation	CXX	CXX
Field Separator	Space	

Field 15 requirements/remarks:

1. Field 15 must only contain the characters “CXX”.

Field 16 - Output Routing

Field 16 is used to specify which operating position or facility will receive information requested from the Host computer.

The format for Field 16 is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Sector Identifier or Adjacent Manual ARTCC or Terminal FDIO or KVDT Position Identifier	dd or LLL or aaaL or aaaLaaa or Ld	42 ZMA TLHT PNSO ORDDSSW G4
Field Separator	Space	

Field 16 requirements/remarks:

1. The field must contain at least 2 but not more than 7 characters.

2. The three-letter adjacent manual center must match the stored facility identifier.

3. The “L” in the “aaaL” and “aaaLaaa” formats identifies the FDIO terminal for which the message is intended and may only be one of the following:

   a. “T” for tower FDIO
   b. “O” for approach control overflight FDIO
   c. “A” for approach control arrival FDIO
   d. “D” for approach control departure FDIO

   The second “aaa” in the “aaaLaaa” format is required if a printer name for an approach control departure or arrival FDIO is adapted.

4. In the “Ld” format, the “L” must be one of the following:

   a. “S” for Primary A
   b. “W” for Watch Supervisor/Flow Controller
   c. “E” for Systems Engineer
   d. “G” for General A
   e. “C” for Host Computer System

Field 17 - Amendment/Correction Data

Field 17 contains the new or corrected data for the message field referenced by the preceding field reference number or abbreviation in Field 12.

The format for Field 17 is shown below.

ELEMENT	FORMAT
Amended/Corrected Data	The format of this field must correspond to that required for the designated field being amended and consist of the amended/corrected data for the field referenced by the preceding field reference number or abbreviation (Field 12) or Error message. **Example:** If Field 04 is being amended, Field 17 must contain data that meets the format requirements for Field 04, i.e., four octal digits (0-7).
Field Separator	Space

Field 18 - Progress Report Data

Field 18 is used to update the time that an aircraft passes over a fix in a Progress Report (PR) message.

The format for Field 18 elements is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Fix	aa(a)(a)(a)(/)(a)(a)(a)(a)(a)(a)	AGS SWO347045
Element Separator	/	
Time	(dddd)	1121
Field Separator	Space	

Field 18 requirements/remarks:

1. The field must contain at least 2 but not more than 17 characters.
2. The fix element is mandatory, but the time element is optional. The fix must be a fix on the stored route of flight.
3. If time is not specified, the computer will automatically input the current time.
4. FDIO eligibility is required (see page 5-1).
5. An element separator is required if both fix and time are entered.

Field 21 - Hold Data

Field 21 contains optional data when entering a Hold Message (HM).

The format for Field 21 elements is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Fix	Same as fix name in Field 10	GEF
Element Separator	/	
Time	dddd	1147
Action to Cancel Previous Hold	C	C
Field Separator	Space	

Field 21 requirements/remarks:

1. The field must contain at least 1 but not more than 17 characters.
2. If specified, the fix must match an unambiguous fix in the flight plan route.
3. Absence of a fix causes a hold at the present position.
4. Absence of a time causes an indefinite hold at a fix, if entered, or at the present position.
5. If both fix and time are entered, the fix must be specified first.
6. If “C” is used, it must be the only element in the field.

Field 34 - Altimeter Data

Field 34 identifies the altimeter setting.

The format for Field 34 is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Altimeter Setting or Missing Data Indicator	ddd or M	992 M
Field Separator	Space	

Field 34 requirements/remarks:

1. Field 34 requires either 1 or 3 characters.
2. An implied leading digit of altimeter setting is understood as follows:

   a. 000-499 implies 3000-3499
   b. 500-999 implies 2500-2999

   Example: An entry of “992” indicates an altimeter setting of 29.92.

Field 35 - Data Entrance Time

Field 35 is used to specify the time of the weather or altimeter setting data.

The format for Field 35 is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Time	dddd	2359
Field Separator	Space	

Field 35 requirements/remarks:

1. Field 35 must contain four digits.
2. The first two digits (hours) cannot exceed 23.
3. The last two digits (minutes) cannot exceed 59.

Field 45 - Weather Data

Field 45 contains the weather observation data that is entered in Weather (WX) messages.

The format for Field 45 is shown below.

ELEMENT	FORMAT	EXAMPLE(S)
Weather Data	O followed by plain text (*)	O 25010KT 7 SKC (Etc.)
Field Separator	Space	

Field 45 requirements/remarks:

1. Field 45 may not exceed 240 characters, excluding the O and * symbols.
2. This field must start with the clear weather symbol (O).
3. To indicate that an additional weather sequence may follow, an asterisk (*) must be placed at the end of the field.

CHAPTER 5: MESSAGE COMPOSITION AND ENTRY

GENERAL

This chapter examines how to use message fields in appropriate combinations to compose FDIO messages and how to edit them both before and after entry.

In order for a FDIO message to be accepted by the computer, it is critical that it be entered in the proper format. Proper format means not only having all of the required fields, but also entering the required and optional fields in the correct order and ensuring that the content of each field is correct.

As information is entered via the alphanumeric keyboard, it is displayed in the preview area of the CRT. As an aid in message composition, a blinking cursor indicates the location where the next typed character will be displayed.

Once message composition is complete, the message is transmitted to the computer for processing by pressing the ENTER key. At this point, the message is transmitted to the computer. If the format and content are correct, the computer generally responds with an acceptance message and/or the desired output message. If the message does not pass the acceptance checks, the computer will generate either an Error or Reject message.

FDIO ELIGIBILITY

In order to enter most messages, you must have "FDIO eligibility." This refers to Sector FDEP Eligibility Rules (SFER), a feature that must be turned on at the Host computer. For the purposes of this manual, SFER are assumed to be on.

An FDIO is eligible to enter a message if one of the following applies:

1. The flight is proposed and will depart from an airport adapted to the terminal facility.

2. The flight is active and a strip for the flight has been printed at the terminal facility.

3. A strip is printed at the terminal facility because of a strip request.

MESSAGE CORRECTION PRIOR TO ENTRY

Messages may be corrected by the controller prior to entry by either of the following methods:

1. The controller may use the editing keys on the alphanumeric keyboard (CHAR INS, CHAR DEL, BACKSPACE, arrow keys, etc.) to make corrections to the message. Incorrect data may be typed over. Refer to Chapter 3 in this manual for the functions of the various alphanumeric keyboard keys.

2. The controller may press the CLEAR key to clear the entire contents of the preview area and reenter the entire message.

MESSAGE CORRECTION AFTER ENTRY

If an FDIO message contains errors, the system will generate one of two possible responses: a Reject message or an Error message.

NOTE: Refer to Appendices A and B of this manual for a listing of commonly seen Reject and Error messages. For a complete listing, refer to NAS-MD-311, Message Entry and Checking, Appendix C.

Reject Message

A Reject message indicates that the input message has been rejected and removed from storage. The reason for rejection follows the word "REJECT."

Example: REJECT - NOT YOUR CONTROL

If the computer generates a Reject message, note the error and resubmit the message.

Error Message

If an Error message is generated, the input message is retained pending correction.

For Fields 01 through 11, an Error message will contain the field number and abbreviation along with the contents of the field in error (cofie) and the type of error.

Example: 07 TIM INVALID

For fields other than 01 through 11, the type error and sometimes the cofie will be displayed.

Example: INVALID FIX

There are four ways to respond to Error messages:

1. Respond with a correction message by typing in the correct data and pressing the ENTER key.

   a. The field in error may be deleted by pressing the ENTER key without entering any correction data.

   Correct only one field at a time.

   Exception: A Field 06/10 connect error requires two Field 17 data entries.

2. Type in a new message. The computer interprets this as a cancellation of the original message, and the new message is processed normally. (Implicit cancellation)

3. Explicitly cancel the message by typing the letters "CXX", which tells the computer to cancel the message in question.

4. Cancel the message by taking no action. If no action is taken within the site-specific time frame, the message in error is automatically canceled.

MESSAGE TYPES AND DESIGNATORS

This section describes the purpose and format of the FDIO messages listed below and includes examples of each message type. All of these messages require pressing the ENTER key in order for the message to be processed.

MESSAGE TYPE	DESIGNATOR
Amendment Message	AM
Altimeter Setting	AS
Departure Message	DM
Flight Plan	FP
Flight Plan Readout	FR
General Information (GI)	GI
Hold Message	HM
Progress Report	PR
Restore ARTS Database	RB
Request ARTS Transfer	RF
Remove Strip	RS
ARTS-NAS Cancellation	RX
Stereo Flight Plan	SP
Strip Request	SR
Test Device	TD
Weather Request	WR
Weather	WX

NOTE: In this section, field numbers enclosed in parentheses indicate optional field data in the message format. Field numbers followed by "(Etc.)" refer to field data that may be input as many times necessary in one message.

Amendment Message (AM)

An Amendment Message is used to modify, add to, or delete previously filed and accepted flight plan data (Fields 02-11). It must contain a message type designator, Aircraft Identification, field reference (number or abbreviation), and the data to be entered.

Flight plan amendments result in one-for-one field substitution. The flight plan is then rechecked to ensure that the amended data and all fields affected by amending these fields contain only meaningful and unambiguous data.

More than one field may be amended in a single AM, except when amending the Aircraft Identification, in which case only Field 02 can be included in the message.

Format and Examples

The format for the AM consists of the following fields in the order shown:

FIELDS:	01	02	12	(17)	(12) (17) (Etc.)
DATA:	Message Type	Aircraft ID	Field Reference	Amendment/ Correction Data	Additional Field Reference(s) and Amendment/ Correction Data
EXAMPLE 1:	AM	UAL720	SPD	225	RAL 90
EXAMPLE 2:	AM	342	05	225	09 90

Examples 1 and 2 change the speed in the flight plan for UAL720 (CID 342) to 225 knots and the requested altitude to 9,000 feet.

Original flight data: UAL720 B727/A 450 P1720 170 HAR V265 DCA
Amended flight data: UAL720 B727/A 225 P1720 90 HAR V265 DCA

Example 1 uses the aircraft call sign to identify the aircraft, while Example 2 uses the Computer Identification number (CID). Example 1 uses the field reference numbers to identify the fields being amended, while Example 2 uses the abbreviations.

EXAMPLE 3:	AM UAL720 TIM P1930

Example 3 changes the proposed time for UAL720 to 1930Z.

Amended flight data: UAL720 B727/A 225 P1930 90 HAR V265 DCA

Amendment Message (AM) (Cont'd)

Guidelines and Requirements

1. FDIO eligibility is required.

2. If Field 02 is being amended, no other field may be amended in that AM.

3. Amendments to Field 06 must be accompanied by a Field 07 and/or Field 10 amendment.

4. Amendments to the letter prefix in Field 07 must be from:

   a. "D" to "E", or
   b. "P" to "D", or
   c. "P" to "E"

5. In Field 07, you may **NOT** change:

   a. "E" to "D", or
   b. "D" to "P", or
   c. "E" to "P"

6. Duplicate field references (Field 12) are not allowed in the same amendment message.

7. An amendment to Field 10 of a stereo flight plan causes deletion of the stereo tag.

Results/Output

1. Either an update message or new flight progress strip is output.

2. A Remove Strip (RS) message is generated to those sectors/facilities that were posting strips prior to a route amendment but which are now completely bypassed by the route amendment.

3. An Accept, Reject, or Error response to an AM input is returned to the entering source.

Amendment Message (AM) (Cont'd)

Field 10 Amendments

Because of the many unique rules and requirements associated with amendments to an aircraft's route of flight, they are discussed separately here.

Normally, Field 10 is amended exclusively. If any other fields are to be amended in the same message, Field 06 must also be included.

Formats and guidelines for amending Field 10 may vary depending on whether the flight plan is proposed or active.

Field 10 Fix/Route Element Types

There are two types of fix/route elements:

1. Unambiguous - A fix/route that appears only once in the filed route
2. Ambiguous - A fix/route that appears more than once in the filed route

Field 10 Symbols

1. The symbol "/" is considered a route element and is referred to as a "tailoring" or a "truncation" symbol, depending on its location in Field 10.

   a. When used as a tailoring symbol, it is inserted as the second element, retaining the departure fix.

      Example: AMA./.OKC.V14.TUL

   b. When used as a truncation symbol, it is inserted next to the last element.

      Example: OKC.V14.TUL.V121.FSM./.MEM

2. The symbol "↑" following a single element in Field 10 indicates a change in departure point.

3. The symbol "↓" following the last of more than one element in Field 10 indicates a change in destination.

Uses for Field 10 Amendments

Field 10 amendments are used to modify filed route data. An amended Field 10 may:

1. Replace the departure fix only
2. Completely replace the stored Field 10
3. Merge new routing with the stored Field 10

Amendment Message (AM) (Cont'd)

To Replace Departure Fix Only

Regardless of whether the flight plan is active or proposed, in an AM to change only the departure fix:

1. Field 10 cannot exceed one element.
2. The single element of the entered route data must be followed by a departure indicator (↑).
3. Both Field 06 and Field 10 must be amended.

Example: Changing the departure fix from HAR to MDT on a flight plan:

Filed Route: HAR.V210.LRP.V457..V265.DATED..DCA
Amendment: AM AID 06 MDT 10 MDT↑
Result: MDT.V210.LRP.V457..V265.DATED..DCA

To Completely Replace Stored Field 10

Sometimes a change in the filed route of flight is so significant that the entire route needs to be replaced, in which case:

1. A destination indicator (↓) is attached to the last element in the amended Field 10.
2. The entered route data completely replaces the stored Field 10.

   Exception: For an active flight plan, the departure fix is retained and followed by the tailoring symbol (/).
3. The last element of the entered route data becomes the new destination.

Example: Proposed (inactive) flight plan:

Filed Route: TLH.V97.PZD
Amendment: AM AID 10 TLH.V198.MAI.V521.RRS..DHN↓
Result: TLH.V198.MAI.V521.RRS..DHN

Amendment Message (AM) (Cont'd)

To Completely Replace Stored Field 10 (Cont'd)

Example: Active flight plan - 10 miles into the flight, the pilot changes the route of flight. (In this case, Field 06 must be amended to show where the new route starts.)

Filed Route: RKA.V483.DNY.V34.IGN
Amendment: AM AID O6 RKA155010 10 RKA155010..HNK..LHY↓
Result: RKA./.RKA155010..HNK..LHY

(If the time for the new coordination fix is necessary, Fields 06, 07, and 10 may be amended in the same message.)

To Merge New Routing with Stored Field 10

Quite often, only a portion of the filed route of flight needs to be changed. In this case, the **FIRST** and/or **LAST** element of the entered Field 10 must match an unambiguous element of the stored Field 10.

1. If the **FIRST** element of the entered Field 10 matches an unambiguous element in the filed route, the entered route data replaces the stored Field 10 after the unambiguous element. All data preceding the unambiguous element is unchanged.

   Example: The pilot wants to amend the filed route after MLT.

   Filed Route: BGR.V93.PNN.V314.MLT..BML..PWM..AUG
   Amendment: AM AID 10 MLT.V39.RLU..SUH↓
   Result: BGR.V93.PNN.V314.MLT.V39.RLU..SUH

2. If the LAST element of the entered Field 10 matches an unambiguous element in the filed route, the entered route data replaces the stored Field 10 between the departure point and the unambiguous element. All data after the unambiguous element is unchanged.

   If the flight plan is active, the computer inserts the tailoring symbol (/) after the departure fix.

   Example: Merging new routing into the original stored route of flight at RRS on an active flight plan:

   Filed Route: JAX.V198.MAI.V521.RRS.V241.CSG
   Amendment: AM AID 06 GEF 10 GEF.V7.RRS
   Result: JAX./.GEF.V7.RRS.V241.CSG

Amendment Message (AM) (Cont'd)

To Merge New Routing with Stored Field 10 (Cont'd)

3. In the event that **BOTH** the first and last elements of the entered Field 10 match unambiguous elements in the filed route, the entered route data replaces the stored Field 10 between the unambiguous elements. All data before the first unambiguous element and after the last unambiguous element is unchanged.

   Example: Changing the routing between PIE and VRB (both unambiguous elements):

   Filed Route: OMN.V152.PIE.V97.LBV.V225.VRB..MLB..DAB
   Amendment: AM AID 10 PIE.V35.RSW..VRB
   Result: OMN.V152.PIE.V35.RSW..VRB..MLB..DAB

Amendment Processing of Fields 06 and 10

When amending Fields 06 and 10 in the same AM, Field 06 becomes the new coordination/departure fix. Route conversion and calculation begin at the fix entered in Field 06.

If the time in Field 07 is not valid, perform a Field 06, 07, and 10 amendment.

Inhibit Preferential Arrival Route (PAR)

The asterisk (*) may be used in an AM to inhibit the application of a Preferential Arrival Route (PAR).

Example: Inhibiting the application of a PAR into Philadelphia:

Filed Route: BOS.V139.DRIFT.V312.CYN..PHL
Amendment: AM AID 06 HTO 10 HTO.V139.SIE..OOD..PHL*
Result: BOS./.HTO.V139.SIE..OOD..PHL

Inhibit Preferential Departure Route (PDR)

The asterisk (*) may be used in an AM to inhibit the application of a Preferential Departure Route (PDR).

Example: Inhibiting the application of a PDR out of Academy Airport:

Filed Route: AAC..MAYES..SGF
Amendment: AM AID 10 AAC*.V4.SGF
Result: AAC.V4.SGF

Altimeter Setting (AS) Message

The AS message is used to enter altimeter reference data for selected adapted reporting stations. The AS message contains a message type designator and reporting time, followed by one or more reporting stations and associated altimeter setting data.

Format and Examples

The format for the AS message consists of the following fields in the order shown:

FIELDS:	01	35	13	34	(13 34) (Etc.)
DATA:	Message Type	Altimeter Entrance Time	Location Identifier	Altimeter Setting	Additional Location Identifier(s) and Altimeter Setting(s)
EXAMPLE 1:	AS	2355	OKC	002	

Example 1 is an entry for OKC altimeter setting of 30.02 at 2355Z.

EXAMPLE 2:	AS 1000 DCA 994 ADW 996

Example 2 is an entry for DCA altimeter setting of 29.94 and ADW altimeter setting of 29.96 at 1000Z.

Guidelines and Requirements

1. Time must be expressed as four digits.
2. The reporting station identifier must contain 2-5 characters and must match an adapted reporting station.

Results/Output

1. An Accept message is generated to the message source if all format and logic checks are accepted.
2. The current altimeter data is modified.

Departure Message (DM)

The Departure Message is used to enter an actual time of departure for a flight. Departure Messages consist of the message type designator and Aircraft Identification. It may include the departure point and any combination of time and altitude information. The entry of a DM with only a message type designator and Aircraft Identification activates that particular flight plan, using the current time as the departure time. FDIO may enter up to six departures in one DM; however, note that Fields 01 and 02 are required again for each departure.

Preferential Departure Route (PDR) may be suppressed by inserting an asterisk (*) after the Aircraft Identification.

Relative time may be entered using the format “XXdd”.

Format and Examples

The format for the DM consists of the following fields in the order shown:

FIELDS:	01	02	(07)	(08)	(01 02 (07) (08)) (Etc.)
DATA:	Message Type	Aircraft ID	Time	Assigned Altitude	Additional Message Type, Aircraft ID, Time, and Assigned Altitude
EXAMPLE 1:	DM	UAL720			

Example 1 departs UAL720 at the present clock time.

EXAMPLE 2:	DM UAL720 1721

Example 2 departs UAL720 at the time of 1721Z.

EXAMPLE 3:	DM 342 1121 DM 122 1122

Example 3 departs UAL720 (CID 342) at 1121Z and N23CD (CID 122) at 1122Z. Example 3 uses the Computer Identification numbers to identify the aircraft.

EXAMPLE 4:	DM 625 1155 80

Example 4 departs CID 625 at 1155Z and changes the assigned altitude to 8,000 feet.

EXAMPLE 5:	DM 112 XX04

Example 5 departs CID 112 at the time of four minutes from now.

EXAMPLE 6:	DM 625*

Example 6 departs CID 625 at the present clock time and inhibits the PDR.

Departure Message (DM) (Cont'd)

Guidelines and Requirements

1. The Aircraft Identification must match one already in storage.

2. If Fields 07 and/or 08 are used in a DM, the data must be in the proper format for the applicable field.

3. If a time is entered, it must be within the programmed parameters of the present clock time.

4. FDIO eligibility is required.

Results/Output

1. The entered time or present time replaces the proposed departure time.

2. If no altitude is entered, the requested altitude becomes the assigned altitude. Otherwise, the altitude entered in the DM becomes the assigned altitude.

3. If an Estimated Time En Route (ETE) was filed, the ETE is added to the departure time and an Estimated Time of Arrival (ETA) is computed and suffixed to the destination fix.

4. When one Departure Message is entered, an Accept, Error, or Reject message is returned to the message source.

5. When multiple Departure Messages are entered in one DM, each individual message receives an Accept or Reject message.

Flight Plan (FP) Message

An FP message is used to enter and store initial flight plan data in the computer. The FP must include the following information: Aircraft Identification, aircraft data, speed, coordination fix and time, requested altitude (RAL) for a proposed flight plan **OR** assigned altitude (ALT) for an active flight plan, and route data. Beacon code and remarks are optional.

Format and Examples

The format for the FP message consists of the following fields in the order shown:

FIELDS:	01	02	03	(04)	05
DATA:	Message Type	Aircraft ID	Aircraft Type	Beacon Code	Speed
EXAMPLE 1:	FP	UAL423	B721/A		450

FIELDS (Cont'd):	06	07	09	10	(11)
DATA (Cont'd):	Coordination/ Departure Fix	Time	RAL	Route of Flight	Remarks
EXAMPLE 1 (Cont'd):	HAR	P1720	170	HAR.V14.DCA	O 1 VOR INOP

Example 1 enters a flight plan for United Airlines Flight 423, a B721/A proposed off HAR at 1720Z with a true airspeed of 450 knots, requesting 17,000 feet via HAR V14 to DCA. The aircraft has one VOR that is inoperative.

EXAMPLE 2:	FP N345SP C172/A 100 CEW D1115 70 CEW.V198.JAX O REQ RAVEC WX

Example 2 enters a flight plan for N345SP, a C172/A with a true airspeed of 100 knots that departed CEW at 1115Z at 7,000 feet via CEW V198 JAX. The pilot is requesting radar vectors around weather.

NOTE: A beacon code is normally not entered, as it is assigned by the ARTCC computer for nondiscrete as well as discrete beacon code-equipped aircraft.

Flight Plan (FP) Message (Cont'd)

Guidelines and Requirements

1. There may be more than one flight plan in the system with the same call sign at the same time, but:

   a. A proposed flight plan cannot duplicate a flight plan in storage having the same departure point.

   b. An active flight plan cannot have the same Aircraft Identification as another active flight plan.

2. If a proposed flight plan is entered with a time earlier than the adapted time interval, it is considered as the next day's traffic.

3. If you try to arbitrarily assign a discrete beacon code in an FP message, the message will be accepted by the computer only if that code has not been assigned to another aircraft.

Results/Output

1. An appropriate response (Accept, Error, or Reject) is returned to the source.

2. Flight progress strips are routed in accordance with NAS adaptation.

3. If Field 04 is omitted, the computer assigns a beacon code to the flight plan in accordance with established allocation procedures.

Flight Plan Readout (FR) Message

The FR message is used to request a flight plan readout on a particular aircraft. The message contains the message type designator and Aircraft Identification.

Format and Examples

The format for the FR message consists of the following fields in the order shown:

FIELDS:	01	02
DATA:	Message Type	Aircraft ID
EXAMPLE 1:	FR	UAL720
EXAMPLE 2:	FR	342

Examples 1 and 2 request flight plan readout for UAL720 (CID 342). Example 1 uses the aircraft call sign to identify the aircraft, while Example 2 uses the Computer Identification number.

NOTE: Use the Computer Identification number (CID) in Field 02 whenever possible.

Guidelines and Requirements

1. If the optional Field 02 element, departure point, is included in the Aircraft Identification, it must match the first route element of Field 10 for that flight plan.

2. If the beacon code is used as the Aircraft Identification, it must match the assigned discrete beacon code for that flight plan.

Results/Output

1. An acceptable input results in the display or printout of Fields 02 through 11 of the filed flight plan.

2. If more than one flight plan is found with the same Aircraft Identification, a list is returned containing Computer Identification numbers, departure points, and for proposed departures, the proposed departure times of all flight plans in main memory with matching Aircraft Identification.

General Information (GI) Message

The GI message is used to enter plain text information desired for output at one or more locations. The data is not stored or retained by the system.

Terminal Forecasts, Inflight Weather Advisories, PIREPs, and Computer Operation Messages are typical of information found in a GI message. Procedures manuals dictate that the GI message should not be used for control data.

Format and Example

The format for the GI message consists of the following fields in the order shown:

FIELDS:	01	16 (16) (Etc.)	11
DATA:	Message Type	Output Routing	Remarks
EXAMPLE:	GI	XYZA XYZT	O ABC planned ARTS shutdown 0430Z

In the example, ABC ATCT wants to tell XYZ Approach and Tower that they are planning to shutdown the ARTS computer at 0430Z.

Guidelines and Requirements

1. The clear weather symbol (O) must precede the plain text message.
2. The output routing in Field 16 must be an adapted identifier.

Results/Output

1. The computer program automatically prints the sending FDIO facility identifier prior to the Field 11 data.

2. An acceptable GI message results in an Accept response being returned to the entering source. If the message is in error, a Reject message is returned to the entering device.

Hold Message (HM)

The Hold Message is used to initiate, modify, terminate, or cancel the hold action for a specified active flight plan. It contains a message type designator and Aircraft Identification and may contain a time and/or fix.

Format and Examples

The format for the HM consists of the following fields in the order shown:

FIELDS:	01	02	(21)
DATA:	Message Type	Aircraft ID	Hold Data
EXAMPLE 1:	HM	UAL720	
EXAMPLE 2:	HM	342	

In Examples 1 and 2, DCA Approach wants to place UAL720 (CID 342) in an indefinite hold at the present position. Example 1 uses the aircraft call sign to identify the aircraft, while Example 2 uses the Computer Identification number.

EXAMPLE 3:	HM UAL720 DATED

In Example 3, DCA Approach wants to place UAL720 in an indefinite hold at DATED intersection.

EXAMPLE 4:	HM UAL720 DATED/1823

In Example 4, DCA Approach wants to hold UAL720 at DATED intersection until 1823Z.

EXAMPLE 5:	HM UAL720 C

In Example 5, DCA Approach wants to cancel the hold on UAL720.

Hold Message (HM) (Cont'd)

Guidelines and Requirements

1. The flight must be active.

2. If used, the fix must match a fix on the filed route. Absence of a fix causes a hold at the aircraft's present position.

3. If used, the time must be within adapted parameters. Absence of a time causes an indefinite hold.

4. If neither fix nor time are entered in the HM, it indicates an indefinite hold at the aircraft's present position.

5. If both fix and time are used in an HM, they must be separated with a slant (/).

6. If "C" is used in Field 21, it must be the only element in that field.

Results/Output

1. If a time is included, the time is interpreted as the Estimated Hold Departure Time.

2. When a hold is established, an Indefinite Hold Update message is routed to all sectors/facilities currently posting strips for the referent flight plan.

Progress Report (PR) Message

The PR message is used to update the status of an active flight plan or may be used to release a flight from holding. It contains a message type designator, Aircraft Identification, and progress report data, which contains a fix and may contain a time.

Format and Examples

The format for the PR message consists of the following fields in the order shown:

FIELDS:	01	02	18
DATA:	Message Type	Aircraft ID	Progress Report Data
EXAMPLE 1:	PR	UAL720	DATED
EXAMPLE 2:	PR	342	DATED

In Examples 1 and 2, DCA Approach shows that UAL720 (CID 342) is at DATED intersection at the present time. Example 1 uses the aircraft call sign to identify the aircraft, while Example 2 uses the Computer Identification number.

EXAMPLE 3:	PR UAL720 DATED/1815

In Example 3, DCA Approach shows that UAL720 is at DATED intersection at 1815Z.

Guidelines and Requirements

1. FDIO eligibility is required.
2. The fix must be on the route of flight.
3. If entered, the time must be within adapted parameters.
4. If entered, the time becomes the new coordination time. If no time is entered, the current time is used.

Results/Output

1. An Accept, Error, or Reject message is sent to the message source.
2. Coordination time amendments are sent to affected positions.

Restore ARTS Database (RB) Message

The RB message is used to transmit current flight plan data for flight plans previously transmitted to the ARTS computer.

Format and Example

The format for the RB message consists of the following fields in the order shown:

FIELDS:	01	13
DATA:	Message Type	Location Identifier
EXAMPLE:	RB	JJJ

The example is an entry to restore the Jacksonville ARTS database.

Guidelines and Requirements

1. The ARTS facility identifier must consist of three alphanumeric characters.
2. The ARTS facility identifier must match an adapted ARTS identifier.
3. The ARTS facility must be “on line.”

Results/Output

1. If the RB message is in error, a Reject message is returned to the source.

2. An acceptable RB message results in an Accept response being returned to the source and retransmission of current flight plan data to the specified ARTS.

Request Flight Plan Transfer (RF) Message

The RF message is used to force the transmission or retransmission of flight plan data to an ARTS facility regardless of the scheduled time for transmission. The message contains the message type designator, Aircraft Identification, and ARTS facility identifier.

Format and Examples

The format for the RF message consists of the following fields in the order shown:

FIELDS:	01	02	13
DATA:	Message Type	Aircraft ID	Location Identifier
EXAMPLE 1:	RF	UAL720	JJJ
EXAMPLE 2:	RF	342	JJJ

Examples 1 and 2 transmit flight plan data on UAL720 (CID 342) to Jacksonville Approach ARTS. Example 1 uses the aircraft call sign to identify the aircraft, while Example 2 uses the Computer Identification number.

Guidelines and Requirements

1. The ARTS facility identifier must consist of three alphanumeric characters.
2. The ARTS facility identifier must match an adapted ARTS identifier.

Results/Output

1. An acceptable RF message results in an Accept response being returned to the message source.

2. The specified flight plan is transferred to the requested facility.

3. If the RF message is in error, an Error or Reject message is returned to the entering device.

Remove Strip (RS) Message

The RS message is used to delete from computer storage **ALL** flight plan data for the specified flight. It also removes the associated track, if any.

Since entry of this message affects every sector from the point of message entry to the destination, it is imperative that you remove the correct flight plan from the system.

Format and Examples

The format for the RS message consists of the following fields in the order shown:

FIELDS:	01	02
DATA:	Message Type	Aircraft ID
EXAMPLE 1:	RS	UAL720
EXAMPLE 2:	RS	342

Examples 1 and 2 remove the flight plan on UAL720 (CID 342). Example 1 uses the aircraft call sign to identify the aircraft, while Example 2 uses the Computer Identification number.

Guidelines and Requirements

1. FDIO eligibility is required.
2. The Aircraft Identification must match one in computer storage.

Results/Output

1. If a track is paired with a flight plan, the track is dropped.

2. If the flight plan was assigned a discrete beacon code, that code is returned to the list of available codes.

3. A Remove Strip update message is routed to all sectors and FDIO facilities currently posting the flight.

ARTS-NAS Cancellation (RX) Message

The RX message is used to cancel in the ARTCC computer, but **NOT** in the ARTS computer, the stored data of a flight plan that has been transmitted from NAS to ARTS. The message contains the message type designator and Aircraft Identification.

Format and Examples

The format for the RX message consists of the following fields in the order shown:

FIELDS:	01	02
DATA:	Message Type	Aircraft ID
EXAMPLE 1:	RX	UAL720
EXAMPLE 2:	RX	342

The example removes UAL720 (CID 342) from the ARTCC computer only. Example 1 uses the aircraft call sign to identify the aircraft, while Example 2 uses the Computer Identification number.

NOTE: Use the Computer Identification number (CID) in Field 02 whenever possible.

Guidelines and Requirements

1. The Aircraft Identification must match one in computer storage.

Results/Output

1. An acceptable RX message results in an Accept message being returned to the message source.
2. The referent flight plan is deleted from the ARTCC's storage.
3. If a discrete beacon code has been assigned to the flight plan, the beacon code is made available for reallocation.
4. A Remove Strip message is routed to all sectors and FDIO facilities currently posting the flight, excluding the source that entered the RX message.
5. If the RX message is in error, an Error or Reject message is returned to the entering device.

Stereo Flight Plan (SP) Message

The SP message, used to enter abbreviated flight plan data, contains the message type designator, Aircraft Identification, time, and route information. Optional fields are aircraft type, speed, assigned or requested altitude, and remarks. Entry of the optional fields will override previously stored (canned) information.

Stereo flight plans must be developed and stored prior to use of this message type. Each stereo flight plan is given a unique name, called a "stereo tag." Specifically, Fields 03, 05, 06, 08 or 09 (dependent on whether the flight plan is proposed or active), 10, and 11 (which is optional) are adapted for each stored stereo tag.

Format and Examples

The format for the SP message consists of the following fields in the order shown:

FIELDS:	01	02	(03)	(05)
DATA:	Message Type	Aircraft ID	Aircraft Type	Speed
EXAMPLE 1:	SP	ARNIE19	3/F4/P	450

FIELDS (Cont'd):	07	(08 or 09)	10	(11)
DATA (Cont'd):	Time	Assigned/ Requested Altitude	Route of Flight	Remarks
EXAMPLE 1 (Cont'd):	P1810	230	FOXTROT7	O NO DP

In Example 1, a stereo flight plan has been previously stored with the following information: F15/P 430 ADW R190 ADW PXT R4006 PXT RIC OTT ADW. The stereo tag assigned to this flight plan is FOXTROT7. Example 1 enters an SP on ARNIE19, a flight proposed at 1810Z and consisting of three F4/Ps with a filed speed of 450 knots and a requested altitude of FL230. The pilot requests no Instrument Departure Procedure.

EXAMPLE 2:	SP JOY12 P1100Z FOXTROT7

Example 2 shows what an SP message for JOY12, proposed at 1100Z flying the FOXTROT7, looks like if no optional fields are used.

Stereo Flight Plan (SP) Message (Cont'd)

Guidelines and Requirements

1. The stereo tag must be an adapted stereo tag.
2. The letters "OTP" cannot be used as a stereo tag.
3. The following fields are adapted for each stereo tag:

    a. Field 03 - Aircraft Data
    b. Field 05 - Speed
    c. Field 06 - Coordination/Departure Fix
    d. Field 08 or 09 - Altitude
    e. Field 10 - Route
    f. Field 11 - Remarks (optional)

Results/Output

1. An appropriate response (Accept, Error, or Reject) is returned to the source.

2. Flight progress strips are routed in accordance with NAS adaptation.

3. When optional fields are entered in the SP message, they replace the equivalent stored data.

4. Any amendment to Field 10 causes deletion of the stereo tag.

Strip Request (SR) Message

The SR message is used to request the printing (or reprinting) of one flight progress strip for the specified flight to a specified printer. The message consists of the message type designator, Aircraft Identification, fix identifier, and output routing.

Format and Examples

The format for the SR message consists of the following fields in the order shown:

FIELDS:	01	02	13	16
DATA:	Message Type	Aircraft ID	Location Identifier	Output Routing
EXAMPLE 1:	SR	UAL720	DCA	DCAA
EXAMPLE 2:	SR	342	DCA	DCAA

Examples 1 and 2 request a strip for UAL720 (CID 342), with the DCA fix shown on the strip, to be printed at the Washington Approach Arrival position. Example 1 uses the aircraft call sign to identify the aircraft, while Example 2 uses the Computer Identification number.

Guidelines and Requirements

1. If the flight plan is proposed, Field 13 must be the departure point.
2. If the flight plan is active, Field 13 must be an unexpired fix on the route of flight.
3. The Aircraft Identification must match one in computer storage.
4. The output routing must contain the correct adapted identification for an ARTCC sector, approach control, tower, or manual ARTCC.

Results/Output

1. If more than one flight plan with the same Aircraft Identification exists in storage, a list is returned containing Computer Identification numbers, departure points, and in the case of proposed flight plans, the proposed departure times of all flights with matching Aircraft Identification.
2. An acceptable SR message results in the output of a single strip for the requested fix of the specified flight.
3. An Accept response is returned to the entering source, except when an FDIO facility routes a strip to itself.
4. If the SR message is in error, a Reject message is returned to the message source.

Test Device (TD) Message

The TD message is used to test the interface between the ARTS and ARTCC computers. It transmits an output test message to the specified output device and is isolated from the operational messages. The field data associated with this message are the message type designator and output routing.

Format and Example

The format for the TD message consists of the following fields in the order shown:

FIELDS:	01	16
DATA:	Message Type	Output Routing
EXAMPLE:	TD	STLA

The example determines if ZKC-STL Approach interface is operational.

Guidelines and Requirements

1. The output routing must be an adapted facility identifier.

Results/Output

1. An acceptable TD message entered from an FDIO facility results in the TD response being routed to the specified FDIO position.

2. If the source and the output positions are not the same, an Accept message is sent to the entering FDIO.

3. Output consists of the display or printout of special adapted messages.

Weather Request (WR) Message

The WR message is used to request a display or printout of stored weather data for specified adapted stations. Multiple weather observations may be requested in one WR message. The field data associated with this message are the message type designator and location identifier.

Format and Example

The format for the WR message consists of the following fields in the order shown:

FIELDS:	01	13	(13)	(13)
DATA:	Message Type	Location Identifier	Additional Location Identifier	Additional Location Identifier
EXAMPLE:	WR	TUL	OKC	

The example requests the weather at TUL and OKC.

Guidelines and Requirements

1. Field 13 must contain an adapted weather reporting station.
2. A maximum of 3 location identifiers may be entered in one WR message.

Results/Output

1. An acceptance message is returned to the message source.

2. An acceptable WR message causes the requested weather station identifier and weather data to be printed on the RFSP associated with the entering FDIO keyboard.

3. If the WR message is in error, a Reject message is sent to the entering device.

Weather (WX) Message

The WX message is used to enter weather observation data for selected adapted reporting station(s). The field data associated with this message are the message type designator, location identifier, data entrance time, and weather data. Observations from more than one reporting station may be entered in a single message.

Format and Example

The format for the WX message consists of the following fields in the order shown:

FIELDS:	01	13	35	45	(13 35 45) (Etc.)
DATA:	Message Type	Location Identifier	Data Entrance Time	Weather Data	Additional Location Identifier, Data Entrance Time, and Weather Data
EXAMPLE:	WX	TLH	0155	O 25010KT 7 SKC 25/22 A2998	

The example enters the 0155Z weather data for TLH.

Guidelines and Requirements

1. The reporting station identifier must consist of 2-5 alphanumerics.
2. Field 45 must begin with the clear weather symbol (O).
3. Field 13 must match an adapted reporting station identifier.
4. Place an asterisk (*) after the last element of the weather if an additional observation is to be entered in the same WX message.

Results/Output

1. An acceptable WX message modifies the currently stored weather sequence and the currently stored altimeter setting reference data.
2. If no Field 45 data is entered, the stored weather data is replaced with the characters “-M-” to indicate missing weather.
3. An acceptable WX message results in an Accept message being returned to the message-entering device.

APPENDIX A

QUICK REFERENCE - FIELD FORMATS

APPENDIX A: QUICK REFERENCE - FIELD FORMATS

FIELD	FIELD NAME/ ELEMENT(S)	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
01	MESSAGE TYPE	LL	AM FP	Message type is required for all messages, except correction messages. The message type must match a stored message type. If using a valid message type, it must be legal from this source.	 01 MSG INVALID MESSAGE TYPE 01 MSG ILLEGAL SOURCE
	Field Separator	Space			
02	AIRCRAFT IDENTIFICATION: Aircraft call sign or Computer Identification Number (CID) or Discrete Beacon Code	 La(a)(a)(a)(a)(a) or ddd or ddL or dddd	 N245CD A1 AAL49 365 03A 2122	This field must contain 2-20 characters. First character of call sign must be a letter. Call sign must match stored Aircraft ID, except for initial flight plan entry. There cannot be same Aircraft ID on two active flight plans; there cannot be two duplicate proposed flight plans. Beacon code digits must be 0-7.	02 AID FLID FORMAT 02 AID FLID NOT STORED 02 AID FLID DUPLICATION
	Element Separator	/			
	Departure Point	aa(a)(a)(a)(/)(a)(a)(a)(a)(a)(a)	N12C/JAX		
	Field Separator	Space			

APPENDIX A: QUICK REFERENCE - FIELD FORMATS *(Continued)*

FIELD	FIELD NAME/ ELEMENT(S)	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
03	AIRCRAFT DATA: Number of Aircraft and/or Heavy Jet or Nonheavy B757 Indicator, if applicable (i.e., H or F)	 d(d) or dL or L	 10 9H F	This field must contain 2-9 characters. When Heavy Jet or Nonheavy B757 indicator is present, the maximum number of aircraft in flight is 9. When present, H or F must immediately precede the element separator.	03 TYP FORMAT 03 TYP INVALID SPECIAL A/C IND
	Element Separator	/			
	Type of Aircraft	La(a)(a)	B52 C172		
	Element Separator	/		Element separator is used between aircraft type and equipment suffix.	
	Airborne Equipment Suffix	a [As adapted]	A	Airborne equipment suffix must be an adapted equipment suffix.	03 TYP ILLEGAL EQUIPMENT QUALIFIER
	Field Separator	Space			
04	BEACON CODE	dddd	4342 0400	Beacon code digits must be 0-7. The beacon code must be compatible with the aircraft equipment suffix.	BCN CODE FORMAT 04 BCN CODE/QUAL INCOMPATIBLE
	Field Separator	Space			
05	SPEED: True Airspeed or Mach Speed or Classified Speed	 dd(d)(d) or Mddd or SC	 90 180 M087 SC	This field must contain 2-4 characters. True airspeed cannot exceed 3700. Speed cannot be zero.	05 SPD FORMAT 05 SPD ILLEGAL
	Field Separator	Space			

APPENDIX A: QUICK REFERENCE - FIELD FORMATS *(Continued)*

FIELD	FIELD NAME/ ELEMENT(S)	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
06	COORDINATION/ DEPARTURE FIX	aa(a)(a)(a)(/) (a)(a)(a)(a)(a) (a)	TL OKC ADDAX FLO120005 2110/08125	This field must contain 2-12 characters. "S" (south latitude) and "E" (east longitude) must be entered. "N" (north latitude) and "W" (west longitude) are implied. If either "N" or "W" is specified, both must be entered.	06 FIX FORMAT
	Field Separator	Space			
07	COORDINATION TIME: Type of Time	 L	 E P D	This field must contain 4 or 5 characters. When used in a DM, type of time shall be omitted.	07 TIM FORMAT
	Time	dddd or XXdd	1450 XX04	The digits "dd" in "XXdd" format shall not exceed 99 minutes.	
	Field Separator	Space			
08	ASSIGNED ALTITUDE	(d)dd or OTP or OTP/(d)dd or VFR or VFR/(d)dd or ABV/(d)dd or (d)ddB(d)dd or (d)dd/fix/(d)dd	70 OTP OTP/115 VFR VFR/75 ABV/600 110B130 70/CEW/90	This field must contain 2-20 characters. Altitudes are expressed in hundreds of feet. When an altitude block is entered, the lower altitude must be entered first. When using "(d)dd/fix/(d)dd" format, the fix must be 2-12 characters.	08 ALT FORMAT
	Field Separator	Space			
09	REQUESTED ALTITUDE	(d)dd or OTP or OTP/(d)dd or VFR or VFR/(d)dd or ABV/(d)dd or (d)ddB(d)dd	230 OTP OTP/165 VFR VFR/55 ABV/150 190B230	This field must contain 2-7 characters. Altitudes are expressed in hundreds of feet. When an altitude block is entered, the lower altitude must be entered first.	09 RAL FORMAT
	Field Separator	Space			

APPENDIX A: QUICK REFERENCE - FIELD FORMATS *(Continued)*

FIELD	FIELD NAME/ ELEMENT(S)	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
10	ROUTE: Fix Name	 aa(a)(a)(a)	 PVD	Fix elements follow the same rules that apply to Field 06. The maximum number of elements is 48.	10 RTE FORMAT 10 RTE TOO MANY ELEMENTS
	Fix/Radial/ Distance	aa(a)(a)(a)ddd ddd	CZI110025		
	Latitude/Longitude	dddd(L)/(d)dd dd(L)	2111/8915		
	PDR/PAR/PDAR Suppression	*	PHL*		
	Airway	aa(a)(a)(a)(a) (a)(a)	V295 J35	Route elements between fixes must be adapted routes.	10 RTE NOT STORED
	Coded Route	aa(a)(a)(a)(a) (a)(a)	OB20		
	DP	aa(a)(a)(a)d	PARK2	DP must be second Field 10 element.	10 RTE INVALID SID USE
	STAR	aa(a)(a)(a)d	FORTS1	STAR must be next to the last Field 10 element.	10 RTE INVALID STAR USE
	Incomplete Route Indicator	XXX	XXX		
	VFR Indicator	VFR	VFR		
	DVFR Indicator	DVFR	DVFR		
	Reentry Operator	+Rd(d) or +S(d)d or +Rd(d)+Sd(d)	+R4 +S3 +R4+S6		
	Stereo Tag	La(a)(a)(a)(a) (a)(a)	FOXTROT7	Stereo tag must be adapted and must be the only Field 10 element.	10 RTE STEREO NOT STORED
	ETE	/dddd	/0130	ETE must be suffixed to the destination.	10 RTE FORMAT
	ETA	/dddd	/1445	ETA must be suffixed to the destination.	10 RTE FORMAT
	Delay Data	/D(d)d+dd	/D1+45		
	Element Separator	. or ..	OKC.V4.TUL OKC..TUL	Separate unlike elements with one period and like elements with two periods.	10 RTE FORMAT
	Tailoring Indicator	/	MIA./.CTY.V295.TLH		
	Routing Change Indicator	+	+TLH.V295.CTY+		
	Field Separator	Space			

APPENDIX A: QUICK REFERENCE - FIELD FORMATS *(Continued)*

FIELD	FIELD NAME/ ELEMENT(S)	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
11	REMARKS	⊕ followed by plain text and/or O followed by plain text	⊕ ONE VOR INOP and/or O REQ RAVEC WX	⊕ is used for intrafacility remarks. O is used for interfacility remarks. If both symbols are used, ⊕ must be specified first.	11 RMK FORMAT
	Field Separator	Space			
12	FIELD REFERENCE: Field Reference Number or Abbreviation	 (d)d or LLL	 4 09 TYP SPD	Leading zero in field reference number is optional. Adapted field number or abbreviation must be used.	 INVALID FIELD REFERENCE
	Field Separator	Space			
13	LOCATION IDENTIFIER	aa(a)(a)(a)(/)(a)(a)(a)(a)(a)(a)	TL OKC ADDAX FLO120005 2110/08125 KOKC JJJ	If location identifier is a fix, it must be a valid fix on the filed route. If location identifier is a weather reporting station, it must be an adapted weather reporting station. If location identifier is an ARTS facility identifier, it must be three letters.	REJECT - INVALID FIX REJECT - NON- ADAPTED STATION REJECT - FORMAT
	Field Separator	Space			
15	MESSAGE CANCELLATION	CXX	CXX	This field is used only in response to an Error message.	
	Field Separator	Space			
16	OUTPUT ROUTING: Sector Identifier or Adjacent Manual Center or Terminal FDIO or KVDT Position Identifier	 dd or LLL or aaaL or aaaLaaa or Ld	 42 ZMA TLHT DABO ORDDSSW G4	The output routing must be in the proper format. Terminal FDIO is addressed with the facility identification followed by: “T” for tower FDIO “O” for approach control overflight FDIO “A” for approach control arrival FDIO “D” for approach control departure FDIO	REJECT - INCORRECT ROUTING
	Field Separator	Space			

APPENDIX A: QUICK REFERENCE - FIELD FORMATS *(Continued)*

FIELD	FIELD NAME/ ELEMENT(S)	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
17	AMENDMENT/ CORRECTION DATA: Amended/ Corrected Data	 Same format as that of the designated field		The format of this field must correspond to that of the field being amended and consist of the amended/corrected data for the field referenced in Field 12 or the Error message.	
	Field Separator	Space			
18	PROGRESS REPORT DATA: Fix	 aa(a)(a)(a)(/)(a)(a)(a)(a)(a)(a)	 AGS PIB015010	This field must contain 2-17 characters. Fix is required; time is optional. If both are used, "/" is required (e.g., OKC/1235).	FORMAT
	Element Separator	/			
	Time	(dddd)	1155	If time is not specified, the computer inputs current clock time.	
	Field Separator	Space			
21	HOLD DATA: Fix	 Same as fix name in Field 10	 TL OKC ADDAX FLO120005 2110/08125	This field must contain 2-17 characters. If fix is specified, it must be a valid fix on the filed route. Absence of fix causes a hold at present position.	FORMAT INVALID FIX
	Element Separator	/			FORMAT
	Time	dddd	1155	Time is optional. Absence of time causes indefinite hold at the fix, if entered, or at the present position. If both fix and time are entered, the fix must be specified first.	INVALID TIME
	Action to Cancel Previous Hold	C	C	If "C" is used, it must be the only element in the field.	
	Field Separator	Space			
34	ALTIMETER DATA: Altimeter Setting or Missing Data Indicator	 ddd or M	 992 M	000-499 implies 3000-3499 500-999 implies 2500-2999 "M" indicates data is missing.	REJECT - INVALID ALTIMETER SETTING
	Field Separator	Space			

APPENDIX A: QUICK REFERENCE - FIELD FORMATS *(Continued)*

FIELD	FIELD NAME/ ELEMENT(S)	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
35	DATA ENTRANCE TIME: Time	 dddd	 2355	The first two digits cannot exceed 23; the last two digits cannot exceed 59.	REJECT - INVALID TIME
	Field Separator	Space			
45	WEATHER DATA	O followed by plain text (*)	O 10012KT 7 SKC 25/23 A3001	This field must start with the clear weather symbol (O). This field may not exceed 240 characters. To indicate that an additional weather sequence may follow, an asterisk (*) must be placed at the end of the field.	REJECT - FIELD OMISSION REJECT - MESSAGE TOO LONG
	Field Separator	Space			

APPENDIX B

QUICK REFERENCE - MESSAGE FORMATS

APPENDIX B: QUICK REFERENCE - MESSAGE FORMATS

MSG TYPE	MESSAGE NAME AND PURPOSE	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
AM	AMENDMENT MESSAGE: To modify, add to, or delete previously filed flight plan data	01 02 12 (17) (12) (17) (Etc.)	AM AAL12 05 450	Aircraft Identification must match one in storage. Computer Identification number may be used.	02 FLID NOT STORED
				An FDIO may amend a flight plan if the aircraft is proposed and will depart from an airport adapted to the terminal facility, if the flight is active and a strip has been printed at the terminal facility by normal strip routing, or if a strip is printed at the terminal facility in response to a strip request.	REJECT - NOT YOUR CONTROL
				Duplicate field reference is not allowed in the same amendment message.	REJECT - DUPLICATE FIELD REFERENCE
			AM 312 02 N21345	If Field 02 is the field being amended, no other field may be amended in the AM.	REJECT - INVALID AMENDMENT
				Amendments made to Field 06 must be accompanied by a Field 07 and/or Field 10 amendment.	REJECT - FIELD OMISSION
				Amendments to Field 07 letter prefix may be from D to E, P to D, or P to E. (Stated in negative: it is an error to change E to D, D to P, or E to P.)	INVALID TIME PREFIX

APPENDIX B: QUICK REFERENCE - MESSAGE FORMATS *(Continued)*

MSG TYPE	MESSAGE NAME AND PURPOSE	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
AM (Cont'd)			AM 232 06 TLH 10 TLH↑	All elements of Field 10 are amendable, but the departure fix must be amended alone and followed by departure arrow (↑). If no ↑ or ↓ is included in a Field 10 amendment, the first and/or last element must match an unambiguous Field 10 element. Field 10 must be the only field being amended in the message; otherwise, Field 06 must be included in the AM.	REJECT - INVALID AMENDMENT REJECT - CANNOT MERGE REJECT - INVALID AMENDMENT
AS	ALTIMETER SETTING: To enter altimeter data for selected reporting stations	01 35 13 34 (13 34) (Etc.)	AS 0030 LIT 000 PBF 999	This message must contain an adapted reporting station identifier. Field 35 must contain four digits; the first two digits may not exceed 23, and the last two digits may not exceed 59.	REJECT - NOT ADAPTED INVALID TIME

APPENDIX B: QUICK REFERENCE - MESSAGE FORMATS *(Continued)*

MSG TYPE	MESSAGE NAME AND PURPOSE	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
DM	DEPARTURE MESSAGE: To enter an actual departure time and/or an assigned altitude	01 02 (07) (08) (01 02 (07) (08)) (Etc.)	DM 232 DM 232 1112 DM 232 XX04 DM 232 1112 080 DM 232*	An FDIO may send departures on as many as six aircraft in one Departure Message. There must be a minimum of 2 and maximum of 4 fields for each departure within the DM. To suppress any PDR, an asterisk (*) may be suffixed to the flight identification or to the departure point if used. The Aircraft Identification must match one already in storage for a proposed flight; otherwise, an Error response is received from the computer. If an error is pending on an accepted AM, only the source of the AM may input a DM on the flight, with the exception of ARTS. FDIO must have eligibility for the flight plan. Time must be within programmed parameters of present clock time. Altitude must be in correct format specified for Field 08.	 REJECT - MESSAGE TOO LONG REJECT - FLID NOT STORED REJECT - CORRECTION PENDING AT SOURCE REJECT - NOT YOUR CONTROL 07 TIM INVALID 08 ALT FORMAT

APPENDIX B: QUICK REFERENCE - MESSAGE FORMATS *(Continued)*

MSG TYPE	MESSAGE NAME AND PURPOSE	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
FP	FLIGHT PLAN: To enter and store initial flight plan data in the computer				
	a. Proposed Flight Plan	01 02 03 (04) 05 06 07 09 10 (11)	FP N345Z P28A/A 120 JAX P1125 80 JAX.V198. CEW.V241. SJI..MOB ⊕ ONE VOR INOP	Proposed FP cannot duplicate FP in storage having same departure point.	REJECT - EXACT DUPLICATE FP IN SYSTEM
	b. Active Flight Plan	01 02 03 (04) 05 06 07 08 10 (11)	FP N35PD C172/A 100 SZW E2355 70 SZW.V7. LAL.V157. LBV O REQ RAVEC WX	Active FP cannot duplicate another active FP with the same Aircraft Identification.	02 AID INVALID - DUPLICATE FLIGHT ACTIVE
				Beacon code, if entered, must not duplicate a beacon code assigned to another flight plan. If the P-time entered (Field 07) is more than the site-specific time parameter in the past, it is considered as the next day's traffic.	BCN CODE USED BY OTHER AC
FR	FLIGHT PLAN READOUT: To request flight plan readout on a particular aircraft	01 02	FR N12CB	Aircraft Identification must match one in storage. Computer Identification number may be used. If more than one flight plan is found with the same ACID, a list is output containing Computer Identification numbers, departure points, and proposed departure times of all flight plans in storage with matching ACID.	REJECT - FLID NOT STORED REJECT - FLID DUPLICATION

MSG TYPE	MESSAGE NAME AND PURPOSE	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
GI	GENERAL INFORMATION: To enter plain text information desired for output at location(s) specified in the output routing	01 16 (16) (Etc.) 11	GI PNSO O PRIMARY RADAR OTS UFN	Output routing (Field 16) must be legal identifier. The last field (11) must be preceded by the clear weather symbol (O).	REJECT - INCORRECT ROUTING REJECT - NO REMARKS CODE
HM	HOLD MESSAGE: To initiate, modify, terminate, or cancel the hold action for a specific flight	01 02 (21)	HM N100X HM N100X LIT HM N100X LIT/1825	For the HM to be accepted, the flight must be active. Fix and time data (Field 21) are optional. However, if both fix and time are used, they must be separated by element separator (/). If used, the fix, must match one in the route of flight. Absence of a fix causes the hold to start at the present position. The time input is the time released from hold. Absence of a time causes indefinite hold. Time must be within adapted parameters. FDIO must have eligibility for the flight plan.	REJECT - FLIGHT NOT ACTIVE FORMAT INVALID FIX INVALID TIME REJECT - NOT YOUR CONTROL
PR	PROGRESS REPORT: To update the status of an active flight. It may be used to release a flight from hold.	01 02 18	PR N312AS CLT PR N312AS CLT/1157	FDIO must have eligibility for the flight plan. Fix is mandatory. Time is optional. If no time is entered, the computer inputs the current time. A fix entered in Field 18 must be on the route of flight of the named aircraft. If entered, the time must be within adapted parameters.	REJECT - NOT YOUR CONTROL INVALID FIX INVALID TIME

APPENDIX B: QUICK REFERENCE - MESSAGE FORMATS *(Continued)*

MSG TYPE	MESSAGE NAME AND PURPOSE	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
RB	RESTORE ARTS DATABASE: To request retransmission of ARTS database to the specified ARTS facility	01 13	RB JJJ	ARTS identifier must be three alphanumeric characters. ARTS identifier must match an adapted ARTS facility identifier.	REJECT - NOT ADAPTED
RF	REQUEST FLIGHT PLAN TRANSFER: To force the transmission of flight plan data to an ARTS facility	01 02 13	RF TWA84 ORD	ARTS identifier must be three alphanumeric characters. ARTS identifier must match an adapted ARTS facility identifier.	FORMAT REJECT - NOT ADAPTED
RS	REMOVE STRIP: To remove from the computer all flight data for a specified flight plan	01 02	RS N262NS	Aircraft Identification must match one in computer storage. FDIO must have eligibility for the flight plan.	FLID NOT STORED REJECT - NOT YOUR CONTROL
RX	ARTS-NAS CANCELLATION: To cancel in the ARTCC program, but not in the ARTS program, the stored data of a flight plan that has been transmitted from NAS to ARTS	01 02	RX N100X	Aircraft Identification must match one in storage.	FLID NOT STORED
SP	STEREO FLIGHT PLAN: To enter an abbreviated flight plan using previously stored information identified by a stereo tag	01 02 (03) (05) 07 (08 or 09) 10 (11)	SP ROCK22 P1500 PAM12	The stereo tag entered must be an adapted stereo tag. When optional fields are entered in the stereo flight plan message, they replace the stored fields for the flight plan.	10 RTE - STEREO NOT STORED

APPENDIX B: QUICK REFERENCE - MESSAGE FORMATS *(Continued)*

MSG TYPE	MESSAGE NAME AND PURPOSE	FORMAT	EXAMPLE(S)	REQUIREMENTS	ERROR INDICATION
SR	STRIP REQUEST: To request at the desired position printing (or reprinting) of one flight progress strip for a specified flight	01 02 13 16	SR TWA401 OBK ORDA	Field 13 is a fix identifier. The fix identifier must be one of the following: fix, fix/radial/distance, latitude/longitude. Output routing (Field 16) must contain the correct adapted identification for an ARTCC sector, approach control, tower, or manual ARTCC.	REJECT - INVALID FIX REJECT - INCORRECT ROUTING
TD	TEST DEVICE: To request an output test message from the Host computer	01 16	TD ORDT	Field 16 must identify an adapted tower or approach control: “T” for tower FDIO “O” for approach control overflight FDIO “A” for approach control arrival FDIO “D” for approach control departure FDIO	REJECT - INCORRECT ROUTING
WR	WEATHER REQUEST: To request display or printout of weather data	01 13 (13) (13)	WR OKC PWA TIK	Field 13 must contain the identifier of an adapted station.	REJECT - NON-ADAPTED STATION
WX	WEATHER: To enter weather observation data for selected adapted reporting stations	01 13 35 45 (13 35 45) (Etc.)	WX BTL 2355 O 18010KT 7 SKC 10/08 A3002	Field 45 must begin with the clear weather symbol (O). Field 45 is free format, not to exceed 240 characters. Field 13 must match an adapted weather reporting station identifier.	REJECT - FIELD OMISSION REJECT - MESSAGE TOO LONG REJECT - NON-ADAPTED STATION

APPENDIX C

ACRONYMS/ABBREVIATIONS

APPENDIX C: ACRONYMS/ABBREVIATIONS

ACRONYM/ ABBREVIATION	MEANING
ACID	Aircraft Identification
ACK	Acknowledge
AID	Field 02 abbreviation
ALT	Field 08 abbreviation
AM	Amendment Message
ANK	Alphanumeric Keyboard
ARTCC	Air Route Traffic Control Center
ARTS	Automated Radar Terminal System
AS	Altimeter Setting Message
ATC	Air Traffic Control
ATCT	Air Traffic Control Tower
BCN	Field 04 abbreviation
CCU	Central Control Unit
CID	Computer Identification
COELE	Contents of Element in Error
COFIE	Contents of Field in Error
CRT	Cathode Ray Tube
CXX	Character group that signifies explicit cancellation in reply to an Error message
DM	Departure Message
DP	Instrument Departure Procedure
DVFR	Defense Visual Flight Rules
EOM	End of Message
ETA	Estimated Time of Arrival
ETE	Estimated Time En Route
FDEP	Flight Data Entry and Printout
FDIO	Flight Data Input/Output
FIX	Field 06 abbreviation
FP	Flight Plan (Message)
FR	Flight Plan Readout Request Message
FRD	Fix Radial Distance
GI	General Information Message
HM	Hold Message
I/O	Input and/or Output
Lat/Long	Latitude/Longitude type of fix
min	minimum or minute (obvious from context)
MSG	Message
MWL	Message Waiting Light
NAS	National Airspace System
nm	Nautical Miles
PAMRI	Peripheral Adaptation Module Replacement Item
PAR	Preferential Arrival Route
PDAR	Preferential Departure Arrival Route
PDR	Preferential Departure Route
PR	Progress Report Message
RAL	Field 09 abbreviation
RANK	Replacement Alphanumeric Keyboard
RAPCON	Radar Approach Control
RB	Restore ARTS Database Message

APPENDIX C: ACRONYMS/ABBREVIATIONS *(Continued)*

ACRONYM/ ABBREVIATION	MEANING
RCU	Remote Control Unit
RF	Request Flight Plan Transfer Message
RFSP	Replacement Flight Strip Printer
RMK	Field 11 abbreviation
ROM	Read Only Memory
RS	Remove Strip Message
RTE	Field 10 abbreviation
RX	ARTS-NAS Cancellation Message
SC	Classified Speed Designator
sec	Seconds
SFER	Sector FDIO Eligibility Rules
SID	Standard Instrument Departure
SP	Stereo Flight Plan Message
SPD	Field 05 abbreviation
SR	Strip Request Message
STAR	Standard Terminal Arrival Route
TD	Test Device Message
TELCO	Telephone Company
TIM	Field 07 abbreviation
TRACON	Terminal Radar Control
TYP	Field 03 abbreviation
UTC	Coordinated Universal Time
UTM	Unsuccessful Transmission Message
VFR	Visual Flight Rules