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En Route Controller Messages and Displays

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FOREWORD

This Air Traffic Training publication describes the functions of the automated equipment in the National Airspace System (NAS), Host and Oceanic Computer System Replacement (HOCSR), Display System Replacement (DSR), and the Flight Data Input/Output (FDIO) devices located within the Air Route Traffic Control Center (ARTCC). This publication also details the composition and formats for the input of appropriate messages as contained in the Flight Data Processing (FDP) and Radar Data Processing (RDP) portions of the program.

This manual is a compilation of National Airspace System Management Documents (NAS-MD) Series 310 through 314.

The purpose of this manual is to provide source material to be used only in the training of En Route Air Traffic Controllers in the Federal Aviation Administration. It does not replace or supersede any current air traffic service directives or procedures.

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1.0 NAS RADAR DATA PROCESSING

1.1 INTRODUCTION TO NAS RADAR PROCESSING

Phase I of the automation program of National Airspace System (NAS) En Route Stage A relieved the controller of using the outdated (circa 1960s) method of manual collection, processing, and transfer of flight data information at Air Route Traffic Control Centers (ARTCCs). Flight Data Processing (FDP) using the IBM 9020 computers became a reality in early 1974 when the last center's automation equipment interfaced with the others for nationwide participation.

Phase II brought Radar Data Processing (RDP), a new and exciting challenge that replaced the handwritten plastic shrimp boat with an alphanumeric data block displayed on a Plan View Display (PVD). Implementation of Phase II was completed in 1975 at all conterminous ARTCCs and integrated the RDP functions into the system. The independent processing systems were called (1) Display Channel Complex (DCC), which was installed at five sites, and (2) Computer Display Channel (CDC), which was installed at 15 sites.

The projected growth in aviation traffic for the late 1980s and 1990s prompted the FAA to upgrade their computer system by switching to the IBM 370 Host Computer System (HCS) for FDP. Utilizing IBM 3083 processors, the HCS was installed in 1985 and could be expanded and upgraded on site. DCC and CDC were retained during this period as display systems until around 1996, when they were replaced by an interim system called Display Channel Complex Replacement (DCCR). By 1999 the Display System Replacement (DSR) had replaced the interim DCCR system.

As the IBM 3083 processors began to near end-of-life and due to Y2K issues, the IBM 3083 processors were replaced by IBM 9672-RA4 G3 processors in 1999. The newer technology was called the Host and Oceanic Computer System Replacement (HOCSR). This upgrade has involved a four-phased approach: (1) replacement of older processors (completed in 1999), (2) upgrade of the NAS monitor and Virtual Machine (VM) software to Extended System Architecture (ESA) operating in 390 mode (ESA/390) (completed in 2000), (3) replacement of the Host Communication Subsystem, Host Peripheral Switching Subsystem, Terminal Subsystems, and Printer Subsystem (in progress as of 2001), and (4) replacement of Direct Access and Storage Device (DASD) and Tape Subsystems (in progress as of 2001).

The backup radar system, Enhanced Direct Access Radar Channel (EDARC), uses the same entries and radar systems used by the HOCSR. A two-way interface allows both systems to be parallel (in sync) with each other except during periods of interruption, when the interface is severed. EDARC displays digitized radar data, both Full and Limited Data Blocks, and performs tracking and intrafacility handoffs. EDARC is used during planned shutdowns and in the event of a complete or momentary failure of the HOCSR. EDARC is an independent processing system providing limited RDP capabilities but no FDP capabilities. It is always on-line as a backup system except during periods of scheduled maintenance.

1.2 HOST COMPUTER SYSTEM AND SUBSYSTEMS

The following subsections describe in general terms the NAS En Route equipment and subsystems that are used in RDP. Components include:

a. Host and Oceanic Computer System Replacement (HOCSR)

b. Display System Replacement (DSR)

c. Radar Data Acquisition and Transfer Subsystem (RDAT)

d. Communications Subsystem

e. System Maintenance and Monitoring Subsystem

1.2.1 Host and Oceanic Computer System Replacement (HOCSR)

The HOCSR utilizes dual IBM 9672-RA4 G3 processors at all 20 ARTCCs in the conterminous United States for FDP. When compared to older technology, the HOCSR package reduces power requirements, requires less floor space, generates less heat, and provides more efficient operation and lower maintenance costs.

The HOCSR must be able to operate around the clock under the stringent requirements of the NAS. Reliability is enhanced by the use of an external Uninterruptible Power Source (UPS), installed at each ARTCC, which allows continuous operation for extended periods of time without interruption to the system. Also, processor redundancy is maintained by a feature called "health checking." If the primary processor fails for any reason during health checking, it is automatically replaced by the backup (redundant) processor without any loss of data integrity. Switchovers between processors can occur in approximately three seconds.

Additional computer equipment is required for the display of RDP data. RDP data is actually created in the HOCSR, which then transfers the data to DSR for display to controllers.

1.2.2 Display System Replacement (DSR)

The Display System Replacement (DSR) subsystem, which interfaces with the HOCSR, was installed in 1999 to replace the interim Display Channel Complex Replacement (DCCR) system at five sites and the CDC at the remaining sites. It provides an extremely reliable, fail-safe display system for presenting RDP information to air traffic controllers. Monochrome Plan View Displays (PVDs) were replaced with Situation Displays (SDs), which permit the use of color. DSR retained the same functionality as the PVD. It also added the capability to display Next Generation Weather Radar (NEXRAD) data, incorporated thermal flight strip printers, and replaced the PVD dials and buttons and the Computer Readout Device (CRD) for the R-, D-, and A-positions with relocatable view areas.

The HOCSR and EDARC provide primary and backup radar data, respectively, to the DSR system. DSR provides interface capability to the HOCSR via the Host Local Communications Network Interface Unit (LIU) and to the EDARC systems via the EDARC System Interface (ESI).

Air Traffic Control (ATC) consoles, i.e., Radar (R), Data (D), and Assistant (A) positions, provide operational air traffic capabilities for the controllers. Communications between these consoles and HOCSR use a Token Ring LAN network (LCN). EDARC uses an Ethernet LAN network (BCN).

1.2.3 Radar Data Acquisition and Transfer Subsystem (RDAT)

RDAT consists of equipment located at the radar sites and the ARTCC. Principal equipment in this subsystem includes:

a. Surveillance radar sites

b. Beacon radars

c. Common Digitizer (CD)

d. Remote radar data sets

e. Authorized military equipment

f. Associated performance monitoring elements

Ground equipment consists of equipment presently in use and a Common Digitizer (CD). The CD is a digital radar data processing system capable of receiving inputs from surveillance and beacon radar equipment. Radar signals are quantized, and detected targets are then reinforced with validated detected beacon replies.

Radar inputs are received from Air Route Surveillance Radar (ARSR), Airport Surveillance Radar (ASR) systems, and a variety of military radars that are a part of the Air Defense System. Although not a true weather radar system, weather inputs are derived from search returns by a weather processor and measurable between 9 and 21 dB, thus making the data available in three levels of intensity (low, medium, and high). The data is digitized and then transmitted to ARTCCs for display to controllers. Performance of the radar system is continuously checked by the radiation and sampling of a calibrated test signal external to the radar antenna system, commonly referred to as a "permanent echo."

1.2.4 Communications Subsystem

The communications subsystem consists of equipment and transmission media for the transfer of flight data and track data between an ARTCC and selected facilities. In addition, the subsystem's equipment provides electronic switching for voice communications via the Voice Switching and Control System (VSCS). Other means used in the communications subsystem are the National Airspace Data Interchange Network (NADIN) and Aeronautical Information System (AIS). The Windows 95-based AIS provides flight plan, weather, supervisory, and user community functions.

1.2.5 System Maintenance and Monitoring Subsystem

A centralized monitoring and control position for the NAS Operations Manager (NOM) of the ARTCC is provided in the system maintenance and monitoring subsystem. The System Maintenance Monitoring Console (SMMC) provides a continual status display for all major equipment in the system. Outputs include the display of equipment configuration in the major subsystems, the ability to display inputs from ARTCC (ARSR) sites and airport (ASR) radar sites, and the selective display of outputs of the display channel.

2.0 RADAR DATA DISPLAY

This section describes the groups of computer-generated information containing alphanumeric track data. This data is periodically updated to indicate track position and information changes.

2.1 FULL DATA BLOCK (FDB)

A Full Data Block includes a position symbol, up to three lines of alphanumeric data containing five fields (Fields A through E), an accent symbol, a leader line, and a velocity vector line. (See Figure 2-1.)

In discussion of FDB field contents, the letter "l" represents an arbitrary letter, "d" represents an arbitrary digit, "a" represents an arbitrary alphanumeric character.

2.1.1 Field A

Field A consists of eight character positions (A1 through A8), which contain the aircraft identification and a Controlled VFR (CVF) symbol (#) in A1, if present. If the CVF symbol is in the A1 position, the aircraft identification will start in the A2 position. The aircraft identification and CVF symbol are left-justified within the field if the data block is positioned N, NE, E, SE, or S. They are right-justified within the field if the data block is positioned NW, W, or SW.

2.1.2 Field B

Character positions B1 through B3 contain either assigned altitude information (digits representing hundreds of feet) or the letters "OTP" or "VFR." Character position B4 contains one of the following computer-generated altitude qualifiers:

A The reported altitude (controller-entered) equals a single assigned altitude.

N No beacon-reported nor controller-entered reported altitudes have been received for the aircraft; or the aircraft's rate of change is questionable, and the Computed Rate of Change (CRC) is being used to make further conformance checks.

↑ The beacon-reported or controller-entered reported altitude is below the assigned altitude when the flight is climbing.

↓ The beacon-reported or controller-entered reported altitude is above the assigned altitude when the flight is descending.

C The beacon-reported altitude is within Altitude Conformance Limits (ALCT).

\+ The beacon-reported altitude exceeds the upper conformance limit for an aircraft that has reached its assigned altitude, or the controller-entered reported altitude exceeds the assigned altitude for a non-Mode C aircraft that has previously been reported at the assigned altitude.

\- The beacon-reported altitude is less than the lower conformance limit for an aircraft that has reached its assigned altitude, or the controller-entered reported altitude is less than the assigned altitude for a non-Mode C aircraft that has previously been reported at the assigned altitude.

B The beacon-reported altitude is in conformance, or the controller-entered reported altitude is in the block for an aircraft that has been assigned an altitude block (B1 to B3 for the low altitude limit of the block and C1 to C3 for the high altitude limit of the block).

/ The flight type is "OTP" or "VFR."

V This indicates the beacon-reported or controller-entered reported altitude when no assigned altitude exists for the aircraft.

F This denotes the reported altitude when the controller-entered or beacon-reported altitude indicates the aircraft has reached the first assigned altitude. If the aircraft has been cleared to maintain an altitude until a fix and then maintain a new altitude, the first altitude will be displayed in Field B (B1 through B3).

X The beacon-reported altitude has become disestablished. (Field C will also contain "XXX.")

T The interim altitude is currently being displayed in the assigned altitude field (B1 through B3).

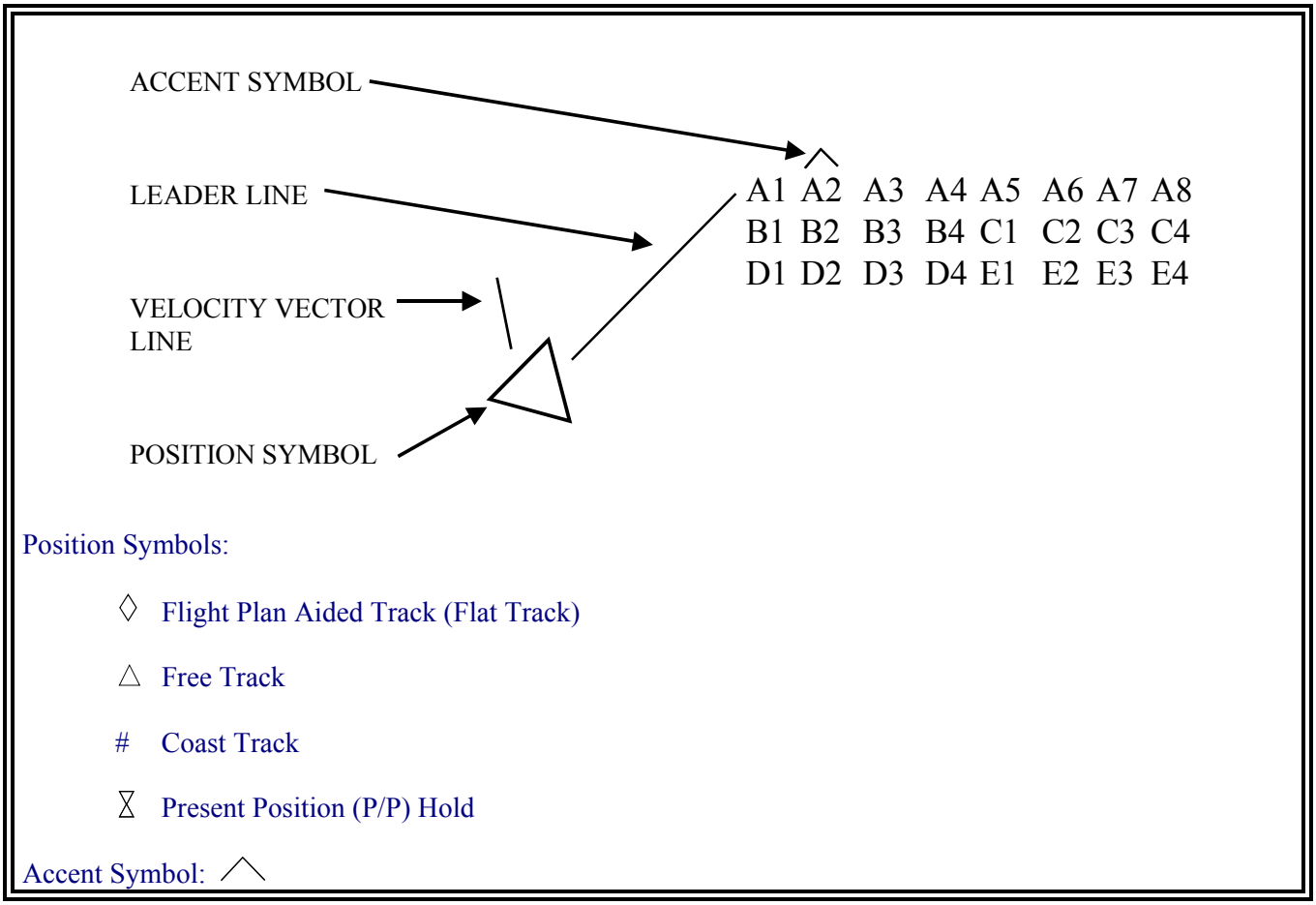


Figure 2-1. Full Data Block Format

The assigned altitude information in B1 through B3 can be either a single altitude, the letters "OTP," the letters "VFR," or half of a block altitude. The single altitude may be a single assigned altitude or the first or second altitude of an assigned altitude when the format is altitude/fix/altitude. When the format is ABV/(d)dd, only the digits portion is considered the assigned altitude for radar display purposes. If the assigned altitude is a block altitude and the aircraft has been reported within the block, the lower altitude in the block will be displayed in positions B1, B2, and B3. (The upper altitude of the block will be displayed in positions C1, C2, and C3.) If the aircraft is reported below the block, the lower altitude will be displayed in B1, B2, and B3, and the reported altitude will appear in Field C. If an interim altitude is available and selected to be displayed, it will be displayed in the B1, B2, and B3 character positions. In all cases, the altitude will be in hundreds of feet. Leading zeros are not considered significant and will not be displayed.

For the B4 character position, a climbing aircraft is defined as one that has not been previously reported at the assigned altitude and whose last reported altitude is lower than the assigned altitude or the lower limit of ALCT for Mode C. A descending aircraft is defined as one that has not been previously reported at the assigned altitude and whose last reported altitude is higher than the assigned altitude or the upper limit of the ALCT for Mode C. If the interim altitude is displayed, the letter "T" will be displayed in the B4 character position.

The interim altitude is available as a result of controller input (QQ message) or adaptation associated with adapted departure routes (DP, PDR, and PDAR).

If an aircraft is a departure whose converted route contains a DP, PDR, or PDAR with an adapted interim altitude, the adapted interim altitude will be displayed in Field B of the FDB when the assigned altitude ((d)dd) is:

a. higher than the adapted interim altitude

b. in the format of OTP and the parameter value OTOP is higher than the adapted interim altitude

c. in the format of OTP/(d)dd and the altitude ((d)dd) is higher than the adapted interim altitude

d. in the format ABV/(d)dd or CVF/(d)dd and the altitude ((d)dd) is higher than the adapted interim altitude

e. in the blocked altitude format ((d)ddB(d)dd) and the highest altitude is higher than the adapted interim altitude

f. in the format (d)dd/fix/(d)dd and the first altitude is higher than the adapted interim altitude

g. in the format of VFR and the parameter value OTOP is higher than the adapted interim altitude

h. in the format of VFR/(d)dd and the altitude ((d)dd) is higher than the adapted interim altitude

NOTE: Conditions g and h apply only to flight plans that contain a filed DP route.

If Field A is left-justified, the contents of Field B will be left-justified within Field B. If Field A is right-justified, Field B will be right-justified within the available character positions in the second line of the data block. The available character positions include all unused Field C character positions as well as the normal Field B character positions. In the justification of fields, significant data will be packed and blanks will be eliminated.

2.1.3 Field C

Character positions C1, C2, and C3 will be used to display the reported altitude or the upper altitude of a block altitude. If the aircraft is responding with a Mode C altitude, the adjusted altitude or flight level will be displayed if:

a. It is not within ALCT 200 feet of the assigned altitude.

b. An interim altitude is being displayed.

c. No assigned altitude has been assigned.

d. The assigned altitude is "OTP."

e. The assigned altitude is "VFR."

If the Mode C altitude is no longer established, the character positions C1, C2, and C3 will contain an "X" (until either Mode C is reestablished or a new controller-reported altitude is entered). For a single assigned altitude whenever the Mode C altitude is within the conformance limits, the B4 character position of Field B will contain the letter "C" and Field C will be blank. If the first altitude of an assigned altitude with the format altitude/fix/altitude is being displayed in Field B whenever the Mode C altitude is within conformance limits, the B4 character position of Field B will contain the letter "F" and Field C will be blank. For a block-assigned altitude whenever the Mode C altitude is within the conformance limits, the B4 character position of Field B will contain the letter "B" and Field C will contain the upper altitude of the block altitude. For a single assigned altitude whenever the Mode C is not within conformance limits and further conformance checks are in progress using CRC, the B4 character position will contain the letter "N" and Field C will be blank.

When the aircraft is not responding with the Mode C altitude, the controller-entered reported altitude will appear in Field C if no assigned altitude has been entered or the assigned altitude is "OTP" or "VFR." Also, when the aircraft is not responding with the Mode C altitude, the controller-entered reported altitude will appear in Field C (C1, C2, and C3) with a pound sign (#) in the C4 character position if it does not equal the single assigned altitude.

For a single assigned altitude whenever the controller-entered reported altitude equals the assigned altitude, the B4 character position will contain the letter "A" and Field C will be blank. For a block-assigned altitude whenever the controller-entered reported altitude is within the conformance limits, the B4 character position of Field B will contain the letter "B" and Field C will contain the upper altitude of the block altitude. When the controller has not entered a reported altitude, the B4 character position of Field B will contain the letter "N" and, for a single assigned altitude, Field C will be blank. If the first altitude of an assigned altitude with the format altitude/fix/altitude is being displayed in Field B whenever the controller-entered reported altitude equals the displayed altitude, the B4 character will contain the letter "F" and Field C will be blank. However, for a block-assigned altitude, Field C will contain the

upper altitude of the block. For a Mode C-reported altitude or a controller-entered reported altitude when there is no assigned altitude, the B4 character position of Field B will contain the letter "V" and the reported altitude will be displayed in Field C. In any case, whenever an altitude is displayed, it represents the reported altitude in hundreds of feet. Leading zeros are not significant and will not be displayed.

If Field A is left-justified, the contents of Field C will be left-justified within Field C. Field C will be left-justified within the available character positions in the second line of the data block. The available character positions include all unused Field B character positions as well as the normal Field C character positions. If Field A is right-justified, the contents of Field C will be right-justified and Field C will be right-justified within the second line of the data block.

2.1.4 Field D

Field D will contain the Computer Identification number (CID). Leading zeros are significant and will be displayed. If Field A is left-justified, Field D will be left-justified. If Field A is right-justified, Field D will be right-justified within the available character positions in the third line of the data block. The available character positions include all unused Field E character positions as well as the normal Field D character positions.

An "R" will be displayed in the D1 character position followed by the Computer Identification (CID) in the D2, D3, and D4 positions of the data block displayed at sectors that do not have track control of the referent flight. The "R" will remain displayed in the D1 character position until the data block is dropped or the sector gains track control of the referent flight.

2.1.5 Field E

Field E consists of the last four character positions in the third line of an FDB. When a combination of situations exists for character display in Field E, each situation will be displayed on an equal time-sharing basis or as locally adapted. Field E characters will also blink for various time periods depending on the content.

Field E contents are:

EMRG	Correlated 7700 beacon return
RDOF	Correlated 7600 beacon return
HIJK	Correlated 7500 beacon return
FAIL	Transmission rejected (DR) message received in response to a Track Initiate (TI) or a Track Accept (TA)
OLD	Handoff (crosstell) track data updates not received
MIFF	En Route Minimum Safe Altitude Warning (E-MSAW) alert indefinitely suppressed
MOFF	E-MSAW alert suppressed on a track for a specific alert and sector in a particular E-MSAW area

MSAW	E-MSAW alert for the aircraft
H-dd	Track handed off to sector “dd” within the center
O-dd	Handoff accepted by sector “dd” within the center
K-dd	Handoff accepted by sector “dd” within the center through use of “/OK”
HLdd	Intercenter track handoff or handoff from an ARTS facility to sector “dd” within center “L”
OLdd	Intercenter handoff or handoff from an ARTS facility accepted by sector “dd” within center “L”
KLdd	Intercenter handoff or handoff from an ARTS facility accepted by sector “dd” within center “L,” and “/OK” was input with the Accept Handoff message
HLLL	Track handed off from a center to an ARTS facility
HLaL	Track handed off from a center to position “aL” in an ARTS facility
OLLL	Handoff accepted by an ARTS facility
OLaL	Control of the track (formerly in crosstell status) assumed by the receiving position “aL” in an ARTS facility
KLaL	Control of the track (formerly in crosstell status) assumed by the position “aL” in an ARTS facility - position “aL” being different than the position addressed in the handoff
HL	Intercenter handoff (automatic); will remain “HL” until accepted by a NAS facility
HOLD	Aircraft in Present Position Hold status
CST	Aircraft in Coast status
aaaa	A four-character statement as stored in adaptation; correlated with a four-digit octal beacon code
dddd	Established beacon code (if different from the assigned code)
NONE	Aircraft has assigned code but none received
ddd	Ground speed rounded to the nearest 1-knot increment (It may range from 001 to 990. If speed is equal to or greater than 985 knots, it is displayed as 990 knots.)

Field E will never be blank if the aircraft is in flat track.

a. If no other information is displayed, ground speed will be displayed.

b. If a single item other than ground speed becomes eligible for display, Field E will display that item and ground speed alternately on an equal time-sharing basis. If ground speed is being displayed alternately with blinking handoff indicators, the ground speed will blink.

c. If more than one item other than ground speed becomes eligible for display, ground speed will not be displayed. The other items will be displayed on an equal time-sharing basis.

See Figure 2-2 for examples of Full Data Blocks.

2.1.6 Dwell Emphasis

Dwell emphasis is used to emphasize a Full Data Block and its associated velocity vector line length. To select an individual FDB, place the trackball cursor over the FDB text array but do not move it. No keystroke or trackball entry is needed for applying dwell.

Dwell emphasis is discontinued when:

a. The trackball ENTER is pressed.

b. The trackball PICK key is pressed.

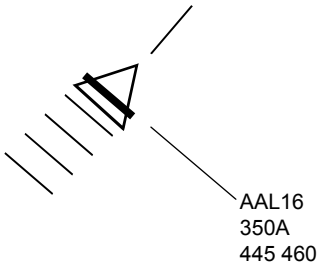
c. The trackball HOME key is pressed.

d. The keyboard trackball cursor HOME key is pressed.

e. The trackball cursor is moved off the FDB.

f. The FDB text array that is being displayed with dwell emphasis is moved off the trackball cursor.

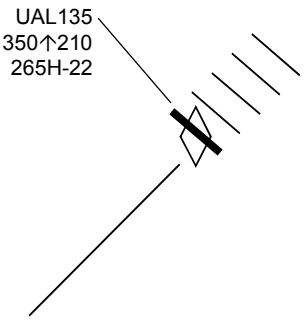
EXAMPLE 1



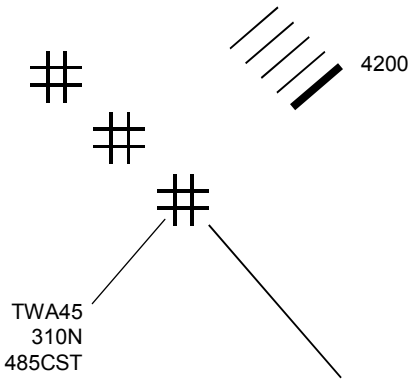
1. The position symbol (Δ) indicates that the target is within the large search area of the tracking program. The altitude indicates that the aircraft does not have Mode C and has reported at FL350.

EXAMPLE 2

2. The position symbol indicates that FP aided tracking and the target/tracking programs are in correlation. The altitude indicates that the aircraft has reached FL210. Field E indicates a handoff to sector 22 of this center.



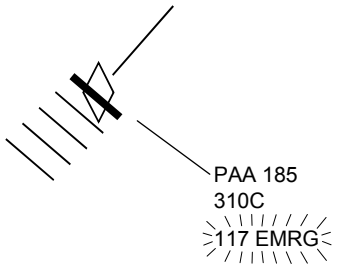
EXAMPLE 3



3. The tracking program has lost contact with the radar target and indicates COAST. Note that the program is no longer tracking the aircraft and indicates an untracked symbol.

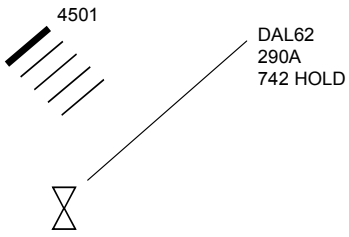
EXAMPLE 4

4. Field E of the data block indicates that the aircraft is squawking 7700. (Fields D and E are displaced in the diagram only to indicate the blinking of data)

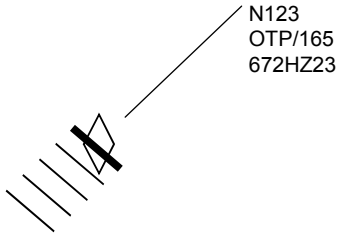


EXAMPLE 5

5. The aircraft has been put into a present position hold. Note the hourglass position symbol and the uncorrelated target symbol as with a Limited Data Block. (See Limited Data Blocks discussed in subsection 2.2.)



EXAMPLE 6



6. The FDB shows the assigned altitude as "OTP" and the reported altitude as "165." The aircraft is being handed off to center "Z," sector 23.

Figure 2-2. Examples of Full Data Blocks

2.2 LIMITED DATA BLOCK (LDB)

LDBs are displayed for all untracked beacon targets and selected tracked and untracked Mode C targets. Tracked Mode C aircraft must be within the sector altitude structure, have an assigned altitude within the altitude structure of another sector, or be a holding aircraft that has strayed out of an adapted holding pattern airspace. Untracked Mode C LDBs are displayed only when the aircraft is within the selected Altitude Filter Limits for the sector involved. Tracked and untracked Mode C aircraft that meet the criteria for LDB display are referred to as "Mode C Intruders." (See Figure 2-3.)

An LDB will consist of one or two lines of data and will always be displayed east of the beacon symbol. The first line will contain a four-digit beacon code except code 1200, which is always blank. The beacon code will be overridden by emergency code characters "RDOF," "HIJK," and "EMRG," which will blink for the duration of the condition. The second line will contain three digits of Mode C altitude data.

An LDB does not have a leader line, velocity vector line, or position symbol. Target symbols may be a "V" for code 1200 aircraft that are below a facility Mode C Intruder altitude or an "I" for tracked Mode C Intruders.

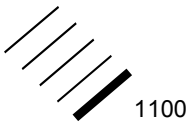
2.2.1 Mode C Intruder (MCI) Data Blocks

MCI data blocks are displayed for all untracked Mode C aircraft that are within Altitude Filter Limits for the sector. MCI data blocks contain the same information in the same format as LDBs, except the target symbol is always "I." MCI data block history may contain a combination of target symbols as the data block changes from an LDB to an MCI data block. For example, a VFR target would display a "V" as history until declared an MCI data block. As an "I" is added to the history, a "V" is dropped.

Tracked Mode C aircraft that meet computer checks are also considered Mode C Intruders, but the correlated target symbol does not change to an "I." Computer checks include a facility parameter base altitude below which Mode C aircraft will not be considered Mode C Intruder aircraft.

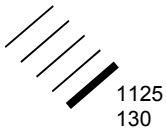
Limited Data Blocks (Altitude Limits 140B200)

EXAMPLE 1



UNCORRELATED
NON-MODE C

EXAMPLE 2

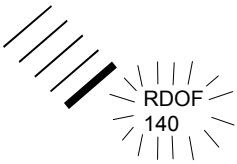


UNCORRELATED
MODE C

EXAMPLE 3

UNCORRELATED
EMERGENCY (FORCED)
NON-MODE C

EXAMPLE 4



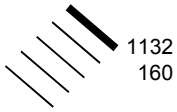
UNCORRELATED
RADIO FAILURE (FORCED)
MODE C

Mode C Intruders (ALTITUDE LIMITS 110B170)

EXAMPLE 5 (UNCORRELATED
ON CODE 1200)

V
V
I
I
I
102

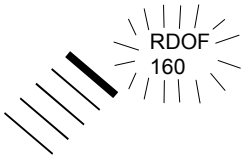
EXAMPLE 6 (CORRELATED)



EXAMPLE 7 (UNCORRELATED)

I
I
I
I
I 1321
125

EXAMPLE 8 (CORRELATED)



ALERT (FORCED)

Figure 2-3. Examples of Limited Data Blocks

2.2.2 Conflict Alert Data Block (CDB)

A CDB will be built and maintained when an MCI track is in conflict with a tracked target controlled in the sector involved. A CDB will consist of a position symbol, target symbol "I," velocity vector line, leader line, and two lines of data. The position symbol will be a free track symbol (Δ), which will overlay the MCI symbol "I." The first line of data will contain the characters "TFC" followed by the four-digit beacon code. The second line will contain an altitude transition indicator (up or down arrow) followed by the Mode C altitude. The first line will blink for the duration of its display unless suppressed manually by the controller. See figure 2-4. An MCI data block in conflict will time out and then be suppressed when the CDB is built.

Initial offset of a CDB is dependent on the direction of flight. For example, a heading of 0° to 45° will generate a data block offset to the southeast, and 46° to 90° will offset to the south. The CDB will offset automatically on initial display if the controlled FDB is overwritten. CDB offset cannot be changed manually.

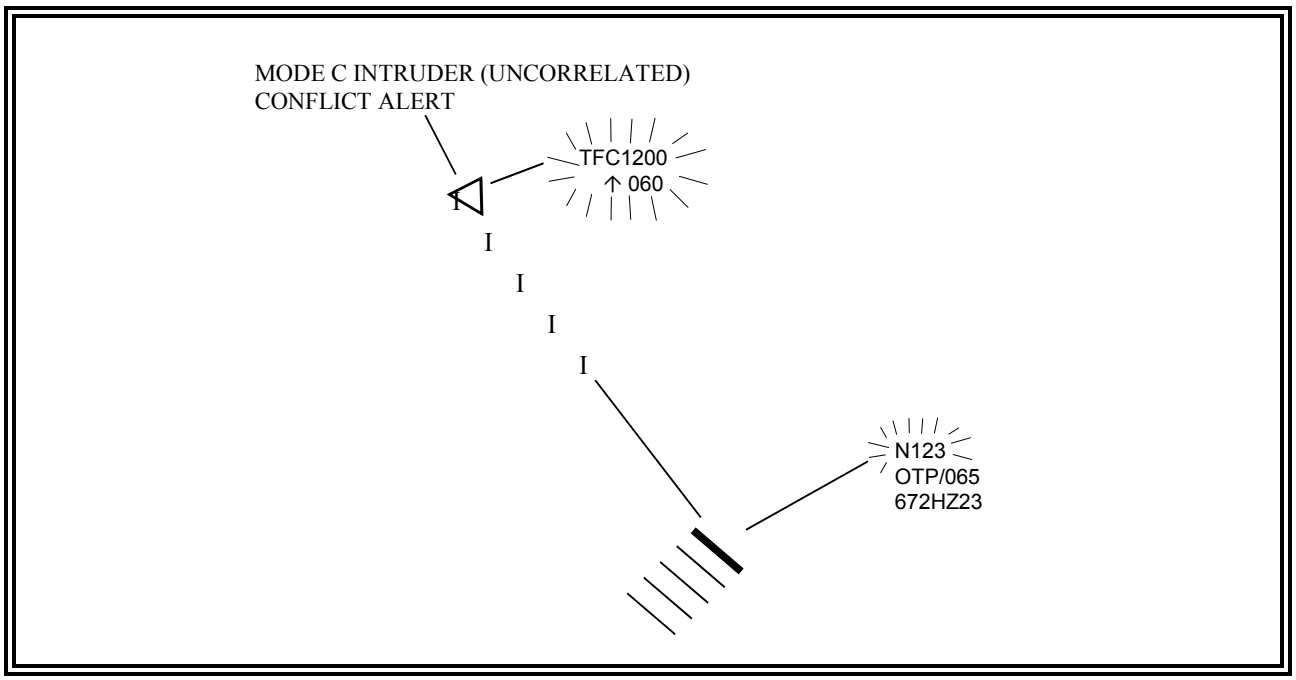


Figure 2-4. Example of a Conflict Alert Data Block

2.3 TARGET SYMBOLS

Eight target symbols are used to display radar data. All target returns, either beacon or primary, are correlated or uncorrelated. A correlated target is one in which tracking is being accomplished by the computer; an uncorrelated target is one which the computer is not tracking. The symbols are:

. or +	Uncorrelated primary (A period is displayed if the signal return is declared weak. A strong return will display a plus.)
X	Correlated primary
/	Uncorrelated beacon

\	Correlated beacon
≡	Identing beacon
I	MCI correlated track eligible for conflict alert
V	Correlated/uncorrelated VFR beacon 1200 code

2.3.1 Position Symbols

The position symbol associated with the data block is located at the track position or the correlated radar datum position. The symbol indicates the mode of tracking.

SYMBOL	MEANING
◊	Flight Plan Aided Track (Flat Track)
△	Free Track
#	Coast Track
⧖	Aircraft in Present Position (P/P) Hold

The FDB and position symbol can be displayed or suppressed through the use of the appropriate Field Selection Panel key.

2.3.2 Track Symbology Leader

The data block is initially displayed on the radar display, oriented relative to the initial direction of the track movement on that radar display for free tracks, and based on the airway or route heading of the paired flight plan for flat tracks. For free tracks, if no movement is indicated, the symbol is oriented to the NE. Also, the position of the data block remains constant unless manual action is taken to change the offset. When handed off to another sector, the position of the data block will be offset appropriate to the present direction of flight in the new sector. Flat tracks will be offset appropriate to the airway heading and will change as the airway heading changes. No change occurs if the aircraft makes turns that are not part of the flight plan. The offset directions are locally adapted.

2.3.3 Velocity Vector Line

The velocity vector line is in proportion to the aircraft speed to the nearest 15 knots. The controller may vary the length of the vector line for all data blocks by a switch setting. Displays of 0, 1, 2, 4, or 8 minutes of flying time are shown for all data blocks.

If one minute is selected and the speed of the aircraft is 180 KT, the length of the vector line will be equal to three miles on the radar.

2.3.4 E-MSAW Penetration Vector Line

The E-MSAW penetration vector line is activated when an associated track is projected to be in a minimum safe altitude situation, a double-intensity vector line is displayed from the current track position to the area of minimum safe altitude. When the alert is a current position alert (the track is currently within the adapted minimum safe altitude area), no vector line will be displayed.

The E-MSAW altitude for the area involved will be displayed in double size and blink at full brightness. (See Figure 2-5.)

2.3.5 Attention Indicators

Attention indicators are provided by the system.

a. Blinking Fields

Example: Field E of an FDB of an aircraft with radio failure blinks RDOF.

b. Blinking FDB

Example: The entire FDB of both aircraft in conflict alert or those predicted to be in conflict will blink for the duration of the condition or until suppressed by the controller.

c. Blinking LDB

Example: The LDB of an aircraft in hold will blink if the aircraft leaves the protected airspace of the holding pattern.

d. Accent Symbol (^)

Example: An accent symbol (caret) appears over the first character of Field A when an aircraft is beyond the sector boundary without a handoff. An accent symbol appears over the second character of Field A when a specific flight is inhibited from auto handoff.

e. E-MSAW Altitude

Example: Aircraft is or is projected to be below minimum safe altitude for a specific area.

f. Conflict Data Block

Example: The first line of the conflict data block of a Mode C Intruder will blink for the duration of its display.

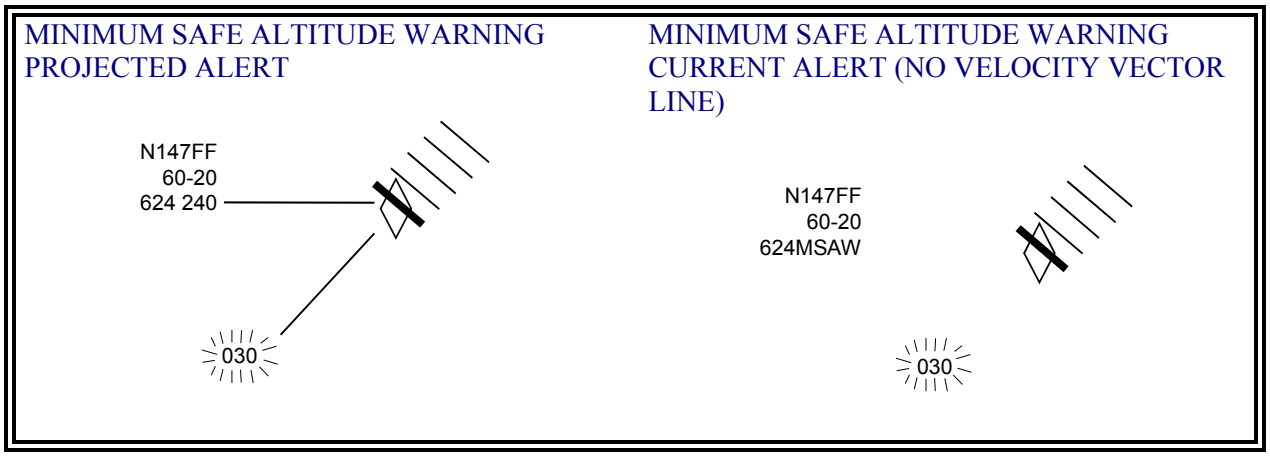


Figure 2-5. Examples of E-MSAW Alerts

2.4 ROUTE DISPLAY

The route display program will present on the radar display the route of flight, beginning with the position of the aircraft specified in the route display keyboard entry and ending with the point on the route segment, which is keyboard-entered minutes or a facility parameter amount of time in the future.

The route will be depicted by a sequence of line segments beginning with the flight plan position symbol (□). The aircraft identification will be displayed immediately below the position symbol. Up to three routes can be displayed simultaneously on a radar display.

The route display will be truncated and an "X" will be placed at the point of truncation whenever:

a. The displayed route includes a reentry. The "X" will be placed at the loop entry fix.

b. The displayed route includes a hold or delay fix. The "X" will be placed at the hold or delay fix.

c. The requested display time extends beyond the last converted fix. The "X" will be placed on the last converted fix.

2.5 DISPLAY LISTS

Lists are displayed in tabular form on the radar display. Each radar display has the capability of displaying the following lists:

a. Departure

b. Inbound

c. Hold

d. Conflict Alert

e. Group Suppression

f. VFR Inhibit

g. Metering

The initial location of each list is adapted on a per-console basis and may be relocated by the controller.

A period (.) is the first displayed character in each line preceding the aircraft identification. Leading zeros are displayed in time and beacon codes but not in altitude entries.

2.5.1 Departure Lists

An aircraft is added to the list at the time specified in the departure message. When a track is initiated either automatically or manually, a data block is displayed and the information is removed from the list. Aircraft data is also removed from the list after a parameter time if no track is started.

Information pertaining to an aircraft does not appear in both the list and a data block at the same time except for an aircraft in transfer status or a present position hold.

The departure list is divided by departure point into sublists. Each sublist is headed by a fix identifier, a space, and the letters "DEPT." Each sublist contains the aircraft identification and assigned altitude (in hundreds of feet) on one line. The list is organized so that the earliest departure is at the top.

Example:

```
   JFK       DEPT
.AAL32160
.TWA125       150

   LGA       DEPT
.A12345       150

   PHL       DEPT
.UAL107        50
.N133         120
```

When an aircraft is added to or deleted from a list, the list is expanded or contracted such that it is always compact. When the last aircraft for a departure fix has been removed from a sublist, the list header for that departure fix is also removed. Up to 15 entries may be entered as determined by local adaptation.

2.5.2 Inbound Lists

Aircraft inbound to a center are added to this list at a specific parameter time prior to the center boundary crossing determined from the flight plan information. Only the peripheral sectors of a center will have this list displayed.

An aircraft is removed from the list by an Accept Handoff message or by track initiation. The inbound list is headed by a fix identifier, a space, and the letters "INBND." It is the first posted fix inside the center boundary. The list is divided into sublists containing the aircraft identification, altitude, and possibly a discrete beacon code. If a code is present following the altitude, it means the computer has assigned a new code to the aircraft because the previously used code is now available.

The list is organized so that the aircraft with the earliest center boundary crossing time is above later aircraft.

Example:

```
SJX             INBND
.A12345       100B150
.TWA163        70  1157

TDO             INBND
.N75124        90
.NWA172      220  3274
```

In this example, TWA163 and NWA172 have been assigned new discrete beacon codes by the computer program. The other aircraft are on nondiscrete codes or using the same code as assigned by the adjacent facility.

2.5.3 Hold Lists

An aircraft is added to a hold list when a hold action becomes effective. The following information is associated with the hold data:

a. Aircraft Identification

b. Clock Time (EFC or EAC Time)

c. Holding Altitude

A hold list is identified by a fix, a space, and the letters "HOLD." When a fix is entered in the hold message, the data block is removed and the appropriate information is placed in the specified list. If the fix does not presently have a sublist, one is added. When a fix is not entered in the hold message, the data block remains stationary at the present position; the position symbol changes to "#;" the target symbol changes to uncorrelated; and the aircraft identification, EFC (if entered), and altitude are listed in a hold sublist headed "P/P."

When an EFC or EAC time expires, the list entry will blink until some positive action takes place to start track acquisition. The entries within a sublist for a fix are listed so that the aircraft at the higher assigned altitude is above those at lower altitudes. Block altitudes are listed with the lowest altitude in the block for sequencing, and OTP altitudes are displayed at the bottom of the list.

Example:

```
    ASB    HOLD
.A12345     1200   220B230
.TWA10             190
.VV6525            150

    JSX    HOLD
.USA625            90

      LAX250020      HOLD
.AAL12      1231          120
        P/P HOLD
.N133           90
.VM4E65     70B100
.A15678          OTP
```

2.5.4 Conflict Alert Lists

The conflict alert list contains an entry for each pair of tracks that are in conflict and are not members of the same group suppressed at the sector by a group suppression keyboard entry. One line will contain the aircraft identifications of the pair and their controlling sector when control is within the center or their controlling facility identification when control is outside the center.

For conflict alerts that involve center Mode C Intruder (MCI) tracks, the second aircraft (the intruder track) will not have a sector number since the MCI track is not a controlled aircraft.

When eligible for display, the conflict alert aircraft identification is forced on the radar display of each sector having control of at least one aircraft in a conflict pair.

Example:

```
        CONFLICT ALERT
.AAL101     TWA202     17 ZME
.UAL45      VFR1200    17
```

In the first line of this example, sector 17 controls AAL101 and center ZME controls TWA202. In the second line, sector 17 controls UAL45, but no sector number is displayed for the MCI track (VFR 1200).

A list pair selected for suppression of the blinking data blocks, by selecting the period preceding the pair with the trackball cursor, will have the period replaced with an "X."

2.5.5 Group Suppression Lists

The group suppression list headed by the characters "GROUP/SECTOR" contains an entry for each group of flight plans being suppressed from conflict alert processing at the sector making the entry. Up to five other sectors may suppress the same group and are listed following the computer-assigned group number. A group consists of 1 to 15 flight plans, which may be added or subtracted from the group at any time. The list and heading are deleted from the radar display(s) if the sector has no groups suppressed.

Example:

GROUP/SECTOR
01
02/05 10 12

In this example, group 01 is suppressed at the entering sector only. Group 02 is suppressed at the entering sector as well as sectors 5, 10, and 12.

2.5.6 VFR Inhibit Lists

The VFR inhibit list is headed by the characters "VFR INHIB" and contains a list of ARTS facilities that are inhibited from receiving VFR flight plan information.

Additions or deletions to the list are made with a Change Parameter message, that is normally made at a supervisory position with the information routed to the radar display(s) associated with the affected sector(s). The list and heading are deleted from the radar display(s) when there are no longer any inhibited ARTS facilities to display.

Example:

VFR INHIB
MCI STL

In this example, both MCI and STL are inhibited from receiving VFR flight plan information.

2.5.7 Metering Lists

Metering lists are displayed at the adapted meter fix sector(s) and outer fix sector(s) that control arrivals to metered airports. All metering lists are displayed as a result of certain Arrival Display (AD) messages input from a metering position.

Example:

STL	30IFR	66	TRAK
AAL112	1721	5	
TWA67	1716	3	

The header contains three characters for the metered airport, 1 to 5 alphanumerics depicting the current runway configuration, and 1 to 3 characters depicting the current airport acceptance rate.

The sublist header consists of a meter name or outer fix name. The sublist entry consists of the aircraft identification, the estimated meter/outer fix time, and the aircraft delay time if a delay has been calculated.

3.0 MESSAGE COMPOSITION

3.1 FIELD DEFINITION

Unless otherwise specified, a field is defined as one or more contiguous nonspace characters separated from each adjacent field by a space. The following clarifications are presented:

a. If the presence of a field or a portion of a field within a message is optional, it will be enclosed by parentheses in the applicable message or field description; for example, S(d)(d)dd.

b. If the presence of an optional field (or portion of a field) is not needed in an input message, no space(s) will be inserted to represent the omission. For example, if the field is defined as S(d)(d)dd and a three-digit entry is made, the input will be S156, not S 156.

c. The first field of the message must not be preceded by a space. The space is automatically inserted when a hard-labeled function key that echoes text in the Preview Area is pressed. The space is also automatically inserted when a Category key or Category Function key is pressed.

d. The last field of the message need not be followed by a space.

e. If the first character of a field is the clear weather symbol (O) or the overcast symbol (⊕), the field terminates by one of the following (whichever occurs first in the message):

   1. The last nonspace character of the message

   2. An asterisk (*) followed by a space character (The asterisk will be stored as part of the field data.)

f. If the first two characters of a field are plus signs (++), the field terminates by the next occurrence of two consecutive plus sign characters followed by a space character or the end of the message. When a field is defined in this manner, embedded space characters as data are allowed. When embedded space characters are used, they are considered data and will be format-checked as part of the field when applicable.

Each message field is assigned a reference number. Each message field is also listed with its reference number in Appendix B.

3.1.1 Elements and Element Delimiters

Each field of data is composed of one or more elements. Elements are generally separated from other elements within the same field by any of several special characters. The element separator cannot be a space character, because these are used exclusively for separating fields. In certain instances, elements are defined by other means and no delimiters are used.

3.2 MESSAGE COMPOSITION

Only one input message per D-position console is processed at any one time, and the computer-generated response (acceptance, error, or rejection) to that message must be completed prior to entry of another input message. If a second message is entered prior to receipt of the computer-generated response to the previous input message, it is not processed. A Referred Reject or a Discard message is generated.

3.2.1 Radar Associate Position Entries

Each message is composed of a series of fields entered in a specified order. Each field is separated from the preceding field by at least one space character (field separator). Certain fields are optional. Whether they are optional or not is dependent on the type of message being entered. Certain fields may be repeated, alone or in combination with others, again depending upon the message type. The allowable sequence of fields within each message type is fixed. Message length, however, is variable. The sequence of fields in each message is specified in the description of the message. The formats and content of the message fields are also presented with the description of the message. To assist the radar controller, most R-position messages can be entered at the Radar Associate D-controller position console.

3.2.2 Radar Position Entries

Each radar controller is provided with an Alphanumeric Keyboard containing Category keys/Category Function keys and hard-labeled function keys, a keypad, and a trackball. These devices are used for composing messages to communicate with the computer program. An input message consists of a sequence of data entered from the above devices. Each message is an order to the computer to initiate, change, or terminate some operation or to respond to a specific display request. The messages apply to a particular flight or to the general environment of the position inputting the message. All radar controller positions have available the same complement of message types. The HCS Operational Program will accept, store, and process input messages from the R-position console when Surveillance Tie-Off is not in effect. It will perform acceptance checks on the input messages and cause acceptance and rejection messages to be generated when appropriate. It will process modifications making appropriate internal program indicators for the display outputs, tracking, handoff, etc.

Detailed descriptions of messages that can be entered from the R-position console are contained in sections 4.0 through 8.0 of this document. Individual instructions input using the hard-labeled function keys for Message Type Designators are referred to as “actions” in this document, while individual instructions input using the Category keys/Category Function keys for Message Type Designators are referred to as “functions.” Appendix B shows the unique formats that distinguish individual actions within a message. The following paragraphs explain some additional requirements in regard to message composition entry and interpretation due to the characteristics of the R-position console and/or the presence of tracks.

3.2.2.1 Multiple Actions and Functions

For DSR and Host messages, the R-controller can use no more than one hard-labeled function key in a single data entry. For Host messages, multiple actions can be entered if they utilize the same Message Type Designator (see Appendix B). For DSR messages, multiple actions cannot be entered within a single message entry. In categories for which multiple functions are allowed (the only limit being the number of functions that can be placed in the Preview Area), each function entered will be interpreted as a message type. Only one entry of the flight identification will be allowed and shall be the last field in the composite message. Each Message Type entry must be followed immediately by the appropriate fields (except Flight Identification) described for that Message Type. Except for the last Function before Flight Identification, each Function must be followed by information — either a message field or a space character — entered on the Alphanumeric Keyboard. (This is necessary in order to prevent inadvertent deselection of a Function.) When multiple functions or actions are entered in a message, the single Flight Identification at the end of the message will be treated as if it were individually entered in every function

or action that requires it. In addition, the Message Type Designator in messages input using hard-labeled function keys will be treated so with each entered action.

3.2.2.2 Trackball Entries

The trackball is used to identify a position on the display surface. A trackball entry causes the R-position console to send to the HCS the display coordinates of the trackball position and the Range and Off-Centering Settings of the Situation Display.

3.2.2.3 Flight Identification

The majority of radar controller input messages relate to a specific flight. There are five methods available to the radar controller to identify a flight in a message.

1. Aircraft Identification — The Alphanumeric Keyboard can be used to enter the Aircraft Identification (AID) consisting of a maximum of seven and a minimum of two alphanumeric characters beginning with an alphabetic character. However, for a DYSIM Training Flight Plan, the Aircraft Identification must be a "+" symbol followed by two to six alphanumerics, the first of which must be a letter.

2. Trackball — The trackball can be used as a means of flight identification. The flight identification will be the identification number reported by the R-position console to the HCS when a data block position or sublist entry is "trackballed." When the R-position console does not report a flight identification, a HCS system search will be conducted for certain specified actions. In these cases, the HCS will be required to search the system in an area defined by a square TBSA (Trackball Search Area) and display coordinate units on a side and in the center of the R-position console-reported X, Y position. The FLID will be the FLID found within the search area. If more than one qualifying FLID is found, the closest FLID to the trackball X, Y coordinates will be selected. The actions for which this search will be conducted if the R-position console does not report a flight identification are:

    a. Forced Data Block

    b. Request/Suppress Data Block

    c. Accept Handoff actions input from the receiving (addressed in an Initiate Handoff) sector or the sector having track control

    d. Accept Handoff actions input with the Logic Check Override when the flight was not addressed to the inputting sector in an Initiate Handoff action

3. Discrete Beacon Code — The Alphanumeric Keyboard can be used to enter the appropriate four-digit octal number. This method of identifying a flight may not be used when inputting actions via the Code hard-labeled function key or Message Type QB.

4. Computer Identification Number (CID) — The Alphanumeric Keyboard can be used to enter the appropriate CID consisting of three digits or of two digits followed by a letter.

5. MCI Identification (MID) — The Alphanumeric Keyboard can be used to enter the appropriate MID in the format "dLd." This method of identifying a flight is only used in a Data Block Offset action for a CDB or in a CO message used to suppress/request an MCI alert. However, an MID cannot be used to identify a CDB associated with an IFR in hold for these two actions.

3.2.2.4 Messages Without Message Type

If a message is entered from the R-position to the HCS without a Message Type byte (Field 01) preceding the contents of the message, the HCS should process the message as a Message Type of None (QN). These particular message actions, i.e., Initiate Handoff, Accept Handoff, Forced Data Block, Emergency Airport Display, and Data Block Offset, can also be entered at the R-position by using the Assigned Altitude hard-labeled key (QZ) on the keyboard.

3.2.2.5 R-Position Flight Plan Readout

Positioning the trackball cursor in the FDB text array of an FDB and pressing the trackball Enter button displays "QF ccc" in the Preview Area where "ccc" is the CID of the flight selected. If a SIM Pilot data block is selected, "QF cccccccc" is displayed where "cccccccc" is the content of Field A (Aircraft Identification) for the SIM pilot data block excluding accent symbols. The Preview Area must be empty (null when the pick or select of the FDB text array occurs). If the trackball Enter button is used to select the FDB text array, the command is processed (sent to Host).

3.2.2.6 R-Position Flight Plan Readout View Updates

When the Update button of the Flight Plan Readout view is selected an Update Flight Plan Readout message (QM) is generated to Host for all displayed flight plans (maximum of 5). Host will respond with a Flight Plan Fields Readout message (MF) for each requested flight plan when applicable.

3.2.3 D-Position Entered R-Controller Messages

a. All R-position messages (QB, QN, QP, etc.), excluding all nonmetering Category Function Menu messages normally input at the R-position, can be entered at the D-position keyboard. The exceptions, which require trackball input, are the following:

   1. QP message - Reposition List action

   2. QU message - Track Reroute action where fix points are trackball-identified

b. D-position entered R-position messages will conform with R-position input format, field requirements, and multiple action limitations.

c. With the exception of the Emergency Airport Display message, the display outputs on the Situation Display and R-CRD View will be updated as though the R-position message was entered at the R-position, e.g., an accepted Modify Altitude Limits action will result in the altitude limits display on the R-CRD View at the R-position and the formatting of appropriate Mode C display data blocks on the Situation Display. In the case of the Emergency Airport Display message, the response to the message entered at the

D-position will be routed to the D-CRD View. An accept or reject response message will be output in R-CRD View format on the D-CRD View for every R-position message entered from a D-position keyboard. When the MULTI FUNC and EDARC keys are pressed to switch to DARC, messages normally displayed on the R-CRD View are displayed on the DARC R-CRD View Preview Area.

d. All R-position messages (QB, QN, QP, etc.) will be rejected if entered at a D-position keyboard with no R-position configured at the entering sector.

3.2.4 Message Correction Prior to Entry

Several methods are provided to permit correction of errors detected during the message composition at either local or remote sources.

3.2.4.1 R-, D-, and A-Position Preview Area

Information as it is entered via the keyboard and trackball (R-position only) is displayed in the Preview Area of the entering position's CRD View (R-CRD View, D-CRD View, or A-CRD View). As an aid in message composition, a positional marker (cursor) indicates the location where the next entered character will be displayed.

Prior to message entry, the controller may use the editing capabilities to replace erroneous characters (alphanumerics or special symbols), to insert characters, or to delete characters in a message. The trackball cursor selection symbol (an upside-down triangle) may be deleted or typed over like any other character. When this occurs the trackball data associated with that symbol will be dropped and not sent for further processing. If the user places the keyboard cursor under a trackball selection symbol and does another pick, the trackball data from the second pick will replace the trackball data from the original pick with respect to subsequent processing. To delete an entire message and clear the contents of the Preview Area, the controller may press the CLEAR key.

Once the message has been entered via pressing either a trackball or keyboard Enter key, the message may be recalled (via the RECALL key) and edited to be reentered. This includes messages that were rejected by Host. DSR messages that are syntactically incorrect will be placed automatically in the Preview Area to permit editing and reentry.

4.0 FLIGHT DATA MESSAGES

The following Flight Data Messages can be found in this section:

4.0 FLIGHT DATA MESSAGES

Flight Data Messages are used to establish and maintain the flight plan database. Acceptance of the input data is both a function of the input message type and the data fields themselves. Generally speaking, field acceptance is based on the format and content of the data being interpreted by the input processor as that of an expected field. Message acceptance is based on the expected field content of the message being interpreted, the logical consistency of the entered data with itself and other stored data, parameters, etc., and the legality of the entered message type considering the input source.

An activity status (active or proposed) is established for each flight plan upon acceptance by the program. When tentative flight plan storage is established or a CPL message is accepted, the activity status is always active. When an FPL message is accepted, the activity status is always proposed. When entered as a result of a Flight Plan message, the activity status is determined by the type-of-time element entered in field 07(Coordination Time) of the FP message as follows:

a. Active - when the coordination time is an actual time (D-time) or an estimated time (E-time).

b. Proposed - when the coordination time is proposed time (P-time) or a flush time (F-time).

Flight data messages communicated between adjacent NAS centers are categorized as first-order or second-order messages. First-order flight data messages transfer a complete flight plan from one center to another. The message type for a first-order flight data message is Flight Plan (FP).

First-order messages represent the initial transmission of data for a given flight plan.

Second-order messages are used to amend data on a flight plan previously transferred to the adjacent center via a successful first-order message. All second-order messages contain the CID of the receiving center (furnished by the receiving center in response to the first-order message) and the aircraft identification as field 02. The aircraft identification is used with the CID to ensure that the CID in the receiving center is still valid. A second-order message is acceptable only from the originator of the first-order message. Second-order messages include:

AM - Flight Plan Amendments
HM - Hold Message
RS - Remove Strip

4.1 AMENDMENT (AM)

An Amendment Message (AM) is used to initiate a Route Readout Request and to modify, add to, or delete previously filed flight plan data, fields 02 through 11. Amendment data, when accepted, becomes a part of the flight plan database. The Amendment message cannot be input by the R-Controller; however, there are a number of actions available to modify, add to, or delete previously filed flight plan data. They are Assigned Altitude action, Code Modification action, Qualifier Modification action, Coast Track action, Track action, and Convert Point Out Track action. These actions are provided to allow for rapid update of flight plan data and are described as separate message inputs in this document.

4.1.1 Message Content and Sources

The following defines the legal sources and fields of the Amendment message:

SOURCE	FIELDS
D-position	01 02* (12 (17)) (12 1 7)…etc.
A-position	01 02* (12 (17)) (12 1 7)…etc.

NOTE: The Route Readout Request is initiated if an AM message is entered with only fields 01 and 02.

4.1.2 Acceptance Checking

An Amendment message contains a message type designator, flight identification, and field reference (number or abbreviation), and may contain amendment data and subsequent field references and amendment data-field combinations. Field reference is an optional field when the source of the AM is a D-position or an A-position.

AM acceptance checking is performed in two stages. First, it is checked for format and field logic acceptability. Second, the amendment data is merged with the referent flight plan, and the amendment flight plan is acceptance-checked similar to an original flight plan entry.

4.1.3 Format

4.1.3.1 Flight Identification (Field 02)

When field 02 contains an aircraft identification and optionally a departure point, the field length must consist of two to twenty characters and must be in the following format:

La(a) (a) (a) (a) (a) (/aa(a) (a) (a) (a) (a) (a) (a) (a) (a))

The first element, the aircraft identification, must be two to seven alphanumerics in length, and the first character must be a letter. However, in the case of a DYSIM Training Flight Plan, the aircraft identification must be three to seven characters in length, in the format of a "+" symbol followed by a letter and at least one additional alphanumeric character. For a Test Flight Plan, the first three characters must be "TTT."

The second element, the departure point, when present, must be separated from the first element by the element separator (/). The departure point must be two to twelve characters in length and must be in the format specified for fix elements of field 10.

When intended as a Computer Identification Number (CID), field 02 must be two digits followed by a digit or letter. Thus: dda where "a" must equal 1 or 0.

When intended as a discrete beacon code, field 02 must consist of four digits: dddd

NOTE: If a nondiscrete beacon code, i.e., the last two digits of dddd are zero, is entered, the following is returned:

REJECT - ILLEGAL FLIGHT ID

4.1.3.2 Field 12

When field 12 is intended as a field reference number, it must be one or two digits. The leading zero is optional, and it must represent a valid flight plan message field number. That is, it must be in the range 02 to 11, inclusive.

When this field is intended to be a field abbreviation, it must be one of the following three-letter abbreviations:

FP FIELD NUMBER	FIELD ABBREVIATION
02	AID
03	TYP
04	BCN
05	SPD
06	FIX
07	TIM
08	ALT
09	RAL
10	RTE
11	RMK

Otherwise, the following error message is returned:

cofie INVALID FIELD REFERENCE

4.1.3.3 Field 17

Amendment data (field 17) may be omitted only when the field 12 to which it would have been paired satisfies both the following for the referent flight:

a. It is the last field in the Amendment Message

b. It specifies an optional flight plan field and that field is a currently stored plan.

When these conditions are not satisfied, the following error message is returned:

NO AMENDMENT DATA ENTERED

If the previous conditions are satisfied, the lack of field 17 data causes the contents of the referent field to be deleted. If entered, the contents of field 17 totally replace the contents of the referenced field in the referent stored flight plan, except for the field 10 merger. Field 17 of the Amendment Message is not format checked because the data are format checked when the amended flight plan is reprocessed (with the exception of the data paired to a field 12 that referenced field 04 or field 07).

When field 12 references field 07, the data stored in the paired field 17 must be in one of the following formats:

Ldddd

LXXdd

The letter is D, E, or P. The first two digits (hours) do not exceed 23 and the last two digits (minutes) do not exceed 59. When desired, the first two digits (hours) may be replaced by the letters XX, in which case the minutes entry is valid to 99. This time signifies a relative time from the current time. Otherwise, the following error message is returned:

cofie FORMAT

When field 12 references field 04, the data stored in the paired field 17 must be in the following format:

dddd

where no digit is greater than seven. Otherwise, the following error message is returned:

cofie FORMAT

4.1.4 Logic

4.1.4.1 Computer Identification Number (CID)

If a Computer Identification Number (CID) is entered as flight identification, the CID must currently be assigned to a flight plan resident in core storage. Otherwise, the following error message is returned:

cofie FLID NOT STORED

4.1.4.2 Aircraft Identification Format (AID)

If an aircraft identification is entered, it must precisely match the identification of a flight plan currently residing in core storage. If the optional element, departure point, is included within the flight identification, unless input source is NAS, it must be included in the flight identification match, i.e., it must match the first route element of field 10 for the referent flight plan. If the entered flight identification does not match the flight identification of any of the flight plans resident in core storage, the following error message is returned:

cofie FLID NOT STORED

4.1.4.3 Discrete Beacon Code (BCN)

If a discrete beacon code is entered as flight identification, it must have the status of an assigned beacon code. Otherwise, the following error message is returned:

cofie FLID NOT STORED

If the entered flight identification matches more than one flight plan, the following error message is returned:

cofie FLID DUPLICATION

In addition to the preceding error message, a list of all duplicated flights is returned. The list tabulates, for all duplicated flights, the Computer Identification Numbers and departure points. Furthermore, for all proposed flights, the proposed departure time is included.

4.1.5 Amendment Eligibility

To prevent the possibility of indiscriminate entry of amendment data, certain restrictions called eligibility rules may be imposed.

Once the flight plan has been identified, checks are applied to determine if a correction to the database or response to a route readout request is pending. If any source (other than the one for which a correction or response to a route readout request is pending) enters an amendment for this flight plan, the following rejection message is returned:

REJECT - CORRECTION PENDING AT source

The word “source” identifies the input source that originated the first amendment message. The identification of the input source is consistent with the format of the contents of the Output Routing field.

When a track has been initiated but track control has not been established, amendments to the flight plan database are not allowed. The following rejection message will be returned:

REJECT - NOT YOUR CONTROL

When the aircraft is being tracked and the input source is a D-position or A-position console, a sector is not eligible to amend a flight plan unless it has track control. If the sector does not have track control and /OK is not input with the message, the following error message is returned:

02 AID cofie VERIFY ELIGIBILITY

The source may then override the eligibility rules by entering /OK.

When the aircraft is not being tracked and the input source is a D-position or A-position console, Sector FDEP Eligibility Rules (SFER) apply if they are turned on (indicated in adaptation). If the sector is not eligible to amend the flight plan, and /OK is not input with the message, the following error message is returned:

02 AID cofie VERIFY ELIGIBILITY

The source may then override the eligibility rules by entering /OK.

When the aircraft is being tracked, and it is in inter or intrafacility transfer status, amendments to its flight plan database are not allowed. An attempt to enter an Amendment message for a tracked flight which is in transfer status will be rejected and the following rejection message will be returned:

REJECT - TRACK IN TRANSFER STATUS

When field 02 references a flight which is in Interfacility Point Out status, and the message entry source is not an adjacent NAS Center, any Amendment message entered for the flight is rejected with the following response:

REJECT - AC IN INTERCTR POINTOUT

After a Transfer Accept (TA) message is received indicating that track control for a flight has been transferred to an adjacent center, amendments to its flight plan database are not allowed. The following rejection message will be returned:

REJECT - NOT YOUR CONTROL

After a Transfer Accept (TA) message is received indicating that track control for a flight has been transferred to an adjacent ARTS facility, Amendment messages are not eligible unless the logic check override indicator (/OK) is entered; otherwise, the following error message will be returned:

02 AID cofie VERIFY ELIGIBILITY

4.1.6 Processing

Following the format and acceptance checks of the Amendment message, the amendment data are merged with the existing fields of the referent flight plan. If the stored field 10 contains elements that are prefixed with a plus sign (+) and field 10 is amended, the plus sign prefixes are deleted. The amendment data replace referent flight plan fields with the exception of field 10 and field 11 data, which may be replaced on an element-by-element basis.

If an amendment is processed to field 10 of a stereo flight plan, the stereo tag is deleted from the stored flight plan.

The amended flight plan is then reprocessed, if required. Format and logic checks are performed to ensure that the amended fields and all fields affected by amending these fields contain only meaningful and unambiguous data.

If neither field 02 nor the departure point element of field 10 has been amended, omit the flight plan aircraft identification duplication checking.

4.1.7 Resultant Outputs

4.1.7.1 Route Amendment Output

a. A route amendment results in all new strips to be made with a revision indicator. The printing is based on the strip printing parameters, except that sectors that already have strips printed on the flight and are not bypassed by the route amendment shall receive their first strip series immediately. Time suffix changes in the route do not cause new strips to be printed. Delay changes in field 10 are treated as time update amendments.

b. A Remove Strips message is generated for all sectors that were posting strips prior to the amendment but which are now completely bypassed by the route amendment.

c. When a route amendment to an active outbound flight causes reconversion of the route, but the route from the reference fix to the last posted center is not affected by the amendment, only the strip for the last posted center fix will be reprinted, with an updated revision number. In addition, time update messages will be sent to qualifying sectors.

d. A route amendment may cause the flight's beacon code to be inserted or deleted from a sector's R-position console - associated Beacon Code Selection List.

4.1.7.2 Altitude Amendment Output

When an altitude amendment is entered:

a. an altitude update message is output at the present position sector except when:

1. That sector entered the amendment.

2. The flight is proposed and no strips have been printed for the sector.

3. The flight is proposed, strips have been printed, and, as a result of the altitude amendment, the departure route or coordination facilities have changed. In this case, the present position sector strips will be reprinted with the new altitude and an updated revision number, unless Proposed Departure Strip Printing logic overrides the printing of these strips.

4. The flight is active and it is determined that no strips have been printed for the sector. However, if the present position fix is nonpostable and there are no postable fixes left in the present position sector, it will be assumed the sector did receive a strip and an altitude update will be output, (unless the present position fix is in a sector determined to be nonpostable by application of a nonadapted departure route).

5. The present position sector is outside the center.

6. No postings in the sector qualify for altitude updates.

7. The sector is not encompassed by the altitude change.

8. The altitude of an active flight (field 08) is not changed from VFR or VFR/(d)dd to any other altitude.

b. Altitude Update messages are output to all qualifying sectors subsequent to the present position sector. Additionally, for an altitude amendment that causes route reconversion, Altitude Update messages are output to all qualifying sectors from the new reference fix sector to the new present position sector - if the present position fix has moved before the updates are generated. A sector qualifies for an update provided all of the following conditions are met:

1. A strip was previously posted in the sector.

2. The postable fixes at the new altitude(s) match the x, y position, postability, and coordination facilities of the previously posted fixes at the old altitude, or the sector is bypassed in all of its occurrences.

3. The sector is not the entering sector.

4. The sector is either:

   (a) encompassed by the altitude change, or

   (b) bypassed in all its occurrences by the altitude change.

5. At least one posting in the sector qualifies to be updated.

6. The altitude on an active flight plan (field 08) is not changed from VFR or VFR/(d)dd to any other altitude.

c. Strips are printed for postable fixes in sectors subsequent to the present position sector for all the new converted fixes not previously posted at the old altitude. Strips are also printed when the fixes in the present position sector at the new altitude do not match the x, y position postability and coordination facilities of the fixes in that sector at the old altitude. Updated revision numbers are printed on the strips. Revision numbers are incremented whenever the route is reconverted due to an altitude amendment (excluding departure messages containing altitudes) regardless of whether strips have been printed or will be printed as a result of the amendment. Sectors holding flight strips which qualify for new strips as the result of the amendment will receive their first strip series immediately; all other strips are printed according to strip printing parameters.

d. Time update messages are output for all sectors, beginning with the present position sector, provided the sector: does not receive new strips, is not bypassed by the altitude amendment, and the posted fix times equal or exceed the Posted Time Update Interval (PTUI).

e. If a combination altitude, aircraft class and/or airborne equipment qualifier amendment is entered which causes the flight to bypass sector(s), a remove strips update is output for the bypassed sector(s) instead of an altitude update. In addition, any sector(s) so bypassed lose amendment eligibility immediately.

f. Reentry sectors may qualify for both strips and an altitude update as the result of an altitude amendment. CARRY BACK is included in the altitude update only if two or more entries of a reentry sector qualify for an update.

g. A code that was previously in sector's Beacon Code Selection List may become a candidate for deletion from that list. Also, if an altitude amendment places a flight in a new sector, a code may become a candidate for insertion into a sector's Beacon Code Selection List.

h. If an altitude amendment is entered amending field 08 from VFR or VFR/(d)dd to any other altitude, reconversion will occur in all cases and all applicable strips will be printed and/or reprinted.

4.1.7.3 Update Message Generation

Whenever flight data contained on flight progress strips change due to the application of amendments that do not require new strips, the program prepares an appropriate update message and routes this message for display on the Computer Readout Device (CRD) view at the proper D-position sectors.

a. Aircraft Identification Update

If field 02 is amended, an Aircraft Identification update message is generated for those sectors posting flight progress strips for the referent FP, starting with the sector containing the flight plan present position fix, excluding the sector that entered the Amendment message. When the Aircraft ID field (02) is amended, in addition to D-CRD view updates, the old AID will be updated, which may appear in Hold. Departure or Inbound Lists, Beacon Code Selection overflow areas, and Full Data Blocks will be updated.

If field 02 is amended for a flight that has a discrete beacon code which is assigned to more than one flight plan, the result will be that different AIDs will be assigned the same beacon code, if originally assigned the same beacon code when the AIDs were the same.

b. Aircraft Data Update

If field 03 is amended and the aircraft class does not change or an airborne equipment qualifier change does not cause the flight plan's route to be reprocessed, an Aircraft Data update message is output for those sectors posting flight progress strips for the referent flight plan (excluding the entering sector) starting with the present position sector.

If field 03 is amended and the aircraft class changes, or a change to the airborne equipment qualifier causes the flight plan's route to be reprocessed, processing and output rules are the same as those for altitude amendments, except that:

1. type updates are output in place of altitude updates.

2. remove strips updates are output for bypassed sectors.

3. updates are suppressed only at the entering sector.

4. eligibility is not retained for EFDI minutes for bypassed sectors or FDEPs.

When a field 03 amendment is entered which changes the airborne equipment qualifier such that the aircraft does not indicate beacon capability, the beacon code, if any, previously entered and/or assigned to the referenced flight plan will be deleted.

When a field 03 amendment which changes the airborne equipment qualifier from discrete to nondiscrete capability is entered, and a discrete code was previously entered and/or assigned to the aircraft, the discrete code will be deleted and a nondiscrete code will be assigned.

When a field 03 amendment is entered which changes the airborne equipment qualifier, but does not cause the flight plan's route to be reprocessed, (for a flight that penetrates an ARTS III facility), the strip will not be reprinted due to the field 03 change. In addition, this same amendment will cause a beacon code update (if applicable) and a type update to be output to those sectors posting flight progress strips for the referent flight plan (excluding the entering sector) starting with the sector containing the present position fix.

c. Beacon Code Update

If an assigned beacon code changes as a result of an amendment message, a Beacon Code Update Message is generated and routed to the sector(s) where a strip containing the previous beacon code has been printed, starting with the sector containing the flight plan present position fix. The entering sector is excluded from this routing when the beacon code is changed as a result of a field 04 amendment. The old code is deleted and the new code is inserted in the Beacon Code Selection List.

d. Airspeed Update

If field 05 of a proposed flight plan is amended, an Airspeed Update message is generated for those sectors that are currently posting strips for the referent FP, excluding the sector that entered the Amendment message.

e. Proposed Departure Time Update

If field 07 of a proposed flight plan is amended to a different proposed time, an E-time (external source only), or a D-Time, a Proposed Departure Time Update message is generated for those sectors that are currently posting strips for the referent flight plan, excluding the following:

1. the sector that entered the Amendment message.

2. the proposed inbound departure coordination strip when the Amendment message is an activation.

But if a posting within a sector qualifying for an update by this rule received a departure coordination strip at proposed time, and if, at activation time, that posting is the first posting in the FPA in which a PAR is first applied, then that posting will receive a new strip - with the required PAR alphanumerics. This could result in updates and a strip to the same sector.

f. Remarks Update

If either one or both elements of field 11 is amended, a remarks update message is generated for those sectors posting flight progress strips for the referent flight plan, starting with the sector containing the flight plan present position fix, excluding the sector that entered the Amendment message.

When only one element of field 11 is amended, only that element is included in the Remarks Update message. When both elements of field 11 have been amended, intercenter remarks appear before intracenter remarks in the Remark Update message.

g. Computer Response Messages

An accept, reject, or error response to an Amendment message input is returned to the source. The only responses returned that relate specifically to the Amendment message itself are error messages or rejection messages. The acceptance message returned in response to an Amendment message input relates to the amended flight plan. Error messages or rejection messages that relate to the amended flight plan may also be returned. When an error message is returned, the input source responds as though the error has occurred as the result of a Flight Plan (FP) input message with the exception of responses to field logic errors. Responses to field 07 logic errors will have Amendment message logic checks reapplied. Error responses to Amendment message logic checks at this point will contain the field number and the field abbreviation.

If an Amendment message changes the route of flight such that the new route no longer enters the airspace of the adjacent NAS center to which the referent flight plan had previously been transmitted, an intercenter Remove Strip (RS) message is transmitted to that center. The RS message results in the receiving enter displaying Remove Strip Update messages to all sectors posting strips for the referent FP and the removal from storage of all data on the flight.

4.2 ARTS III NAS CANCELLATION (RX)

The ARTS III NAS Cancellation message (RX) is used to cancel the stored data in the center program, but not in the ARTS III program, of a flight plan which had been transmitted from NAS to ARTS III.

4.2.1 Message Source and Content

SOURCE	CONTENT
D-Position	01 02*
A-Position	01 02*

*Indicates a verification possibility

4.2.2 Acceptance Checking

The RX message contains the message type designator and the flight identification.

4.2.3 Format

The format checks for flight identification (field 02) are the same as for field 02 of an Amendment Message (AM).

4.2.4 Logic

The logic checks for flight identification (field 02) are same as for field 02 of an Amendment Message (AM), except where the following logic applies:

When the aircraft is being tracked, and is in Crosstell status, cancellations to its database are not allowed. An attempt to enter an "RX" message for a tracked flight which is in Crosstell status will be rejected and the following rejection message will be returned:

REJECT - TRACK IN CROSSTELL STATUS

If a field 02 amendment has been applied, no RX messages will be accepted for this flight until all aircraft ID update messages are acknowledged or have been printed on the associated FSP. When an RX message is entered during this period, the following message is returned:

REJECT - AID UPDATES PENDING

When the flight is in Host Non-Host (HNH) handoff status (i.e., the condition of track handoff between a Host ARTS and a Non-Host center through the Host center), cancellations to its database are not allowed. An attempt to enter an RX message for a flight in HNH handoff status will be rejected and the following rejection message will be returned:

REJECT - FLIGHT IN HNH HANDOFF STATUS

When a flight is under "Inbound HNH ARTS Status," a logic check override (/OK) will be required when an RX message is entered; otherwise, the following error message will be returned:

02 AID cofie VERIFY ELIGIBILITY

If field 02 references a flight which is in Interfacility Point Out status, the following rejection message is returned:

REJECT - AC IN INTERCTR POINTOUT

4.2.5 Source Eligibility

Eligibility rules that apply to ARTS III NAS Cancellation messages are the same as those that apply to Amendment messages.

4.2.6 Confirmation

If the input is from a D-position or A-position console and the message passes all acceptance checks, the following confirmation message will be outputted:

CONFIRM BY ENTERING Y

If the single character "Y" is entered, the RX message is accepted. If any input is entered other than the single character "Y," the RX message is cancelled and the following rejection message is output:

REJECT - NOT CONFIRMED

4.2.7 Processing

The RX message is format and logic checked as specified in acceptance checking. An acceptable RX message results in an accept response being returned to the source, and the following specifications applied.

The referent flight plan is deleted from the center's storage.

If a discrete beacon code has been assigned to this flight plan, the beacon code is made available for reallocation.

A Remove Strip message is routed to all sectors and FDEPs currently posting the flight, excluding the source that entered the RX message. Remove Strip messages will not be sent to any other adjacent facilities.

4.2.8 Results

If the RX message is in error, an error or rejection message is returned to the entering device. An acceptable RX message results in the procedures specified in processing.

4.3 ASSIGNED ALTITUDE (QZ)

This action is used to change the assigned altitude or flight level for the specified flight.

4.3.1 Format

a. Fields

DEVICE	FIELDS
A-position or D-position	01 (60) 08 02

b. Field Contents

01 Message Type (QZ)
60 Logic Check Override
08 Assigned Altitude
02 Flight Identification

c. Examples

QZ 190 N34PY
QZ 090 2473
QZ OTP (TBE)
QZ 140B220 016/OK

d. Error Indicators

FLID FORMAT
(cofie) FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (A-position input)

4.3.2 Logic

a. The Assigned Altitude Action will be rejected if it is entered in the same message as an Initiate Handoff Action.

b. If the merging of the assigned altitude into the flight plan causes logic errors in any other field of the flight plan, the following error message is returned:

ALTITUDE INCOMPATIBLE

c. If field 02 references a flight which is in Interfacility Point Out status, the following rejection message is returned:

AC IN INTERCTR POINTOUT

d. Error Indicators

AC IN INTERCTR POINTOUT
AID UPDATES PENDING
ALTITUDE INCOMPATIBLE
CAN'T HANDOFF AND AMEND FP
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position input)
INVALID BLOCKED ALT
NOT YOUR CONTROL
PVD NOT CONFIGURED (D-position input)
SECTOR dd HAS CONTROL
TRACK IN CROSSTELL STATUS (Not applicable if entered at the receiving sector.)
FLIGHT IN HNH HANDOFF

4.3.3 Processing

a. The flight plan will be modified to include the entered data in the assigned altitude element of the flight plan.

b. If flight plan storage has been tentatively assigned, the assigned altitude will be stored in flight plan storage.

c. If a new beacon code is assigned as a result of this action, the new code will replace the old code, if any, in the flight plan and related tracking data. The old code, if any, will be removed from the affected Beacon Code Selection List(s). The new code will be added to the preceding lists, if not already present.

The old code, if it was a discrete code, will be added to the list of available codes (provided it is a code which is automatically assignable by the computer program). If the old code is in the automatic track initiation list, remove it.

d. If a new discrete beacon code is assigned as a result of this action and the aircraft has neither an associated track nor an extrapolation status of NONE, SUSPEND, or HOLD, the track will be eligible for automatic track initiation.

e. If this action causes the capacity of the Beacon Code Selection List to be exceeded, responses will be generated.

4.3.4 Resultant Outputs

a. If a data block exists, the A, B and C fields of the data blocks will be modified.

b. If data pertaining to the aircraft is in a list display, the altitude field will be modified to either a single assigned altitude, an altitude range, the letters "OTP" or the letters "VFR" and, if applicable, the old beacon code will be replaced by the new code.

c. If the aircraft has an entered flight plan, Amendment messages will be transmitted, if necessary, to NAS and to ARTS III facilities.

d. If a beacon code change has been made, appropriate code addition/deletion messages will update the affected Beacon Code Selection List(s).

4.4 CODE MODIFICATION (QB)

This action is used to assign or change nondiscrete beacon codes and discrete codes which are not presently assigned to another aircraft. (A discrete code is any code not ending in 00.)

4.4.1 Format

a. Fields

SOURCE	FIELDS
A-position or D-position	01 (60) 04 02

b. Field Contents

01 Message Type (QB)
60 Logic Check Override
04 Beacon Code
02 Flight Identification

c. Examples

QB 2432 AAL35

QB 5362 120/OK

QB 5324 (TBE)

d. Error Indicators

BCN CODE FORMAT
(cofie) FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input)

4.4.2 Logic

a. With the exception of an aircraft which has no qualifier and has been assigned tentative flight plan storage only, the aircraft must have an equipment qualifier which indicates beacon capability.

b. The same discrete beacon code may not be assigned to more than one aircraft unless the code modification is entered to assign a code which is already assigned to another flight plan. If the flight plan entered in the message is another leg of the same flight already assigned this code, the code modification will be allowed.

c. If a Code Modification Action and a Qualifier Modification Action are entered in the same message, they must be compatible (i.e., the equipment qualifier must indicate a beacon capability at least as high as that of the Code Modification Action).

d. If field 02 references a flight which is in Interfacility Point Out status, the following rejection message is returned:

AC IN INTERCTR POINTOUT

e. Error Indicators

AC IN INTERCTR POINTOUT
AID UPDATES PENDING
BCN CODE USED BY OTHER AC
CODE/QUAL INCOMPATIBLE
CORRECTION PENDING - source
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position input)
NO BCN CODE QUAL

NO DISCRETE CODE QUAL
NOT YOUR CONTROL
PVD NOT CONFIGURED (D-position input)
SECTOR dd HAS CONTROL
TRACK IN CROSSTELL STATUS
FLIGHT IN HNH HANDOFF

4.4.3 Processing

a. If a new discrete beacon code is assigned as a result of this action and the aircraft has neither an associated track nor an extrapolation status of NONE, SUSPEND, or HOLD, the track will be eligible for automatic track initiation.

b. If this action causes the capacity of the Beacon Code Selection List to be exceeded, responses will be generated.

c. If flight plan storage has been tentatively assigned, the assigned beacon code will be stored in the flight plan storage.

d. While operating in DARC/NAS Mode, code modification inputs from the DARC A-position are checked for logic, format and eligibility criteria.

4.4.4 Resultant Outputs

a. If a new beacon code is assigned as a result of this message and the associated aircraft is in the Inbound List, the old code, if present in the List entry, will be deleted.

b. Appropriate code addition/deletion messages will update the affected Beacon Code Selection List.

c. If the aircraft has an entered flight plan and a change is made to the Beacon Code Field:

   1. A Flight Plan Data Printout and Beacon Code Update Messages will be generated.

   2. Amendment messages will be transmitted, if necessary, to NAS and/or ARTS III facilities.

4.5 DEPARTURE (DM)

A Departure Message (DM) may be used to activate a proposed departure or a proposed airfile flight plan.

Although flights are normally activated (departed) singly via unique entries of Departure messages, it is permissible to depart up to six individual aircraft via the entry of one message. This is referred to as a "multiple departure" and is accomplished by typing more than one Departure message prior to entering the data into the computer. In multiple departures, the total message is referred to as the physical Departure message, and each unique Departure message contained therein is referred to as a logical Departure message. No more than six logical Departure messages may be entered in one physical Departure message. The multiple Departure message may only be used by FDEP-equipped facilities.

4.5.1 Message Content and Source

The following defines the legal sources and fields of the Departure Message:

SOURCE	FIELDS			
D-position	01	02*	(07)	(08)
A-position	01	02*	(07)	(08)

*Indicates a verification possibility

4.5.2 Acceptance Checking

A DM message contains a message type designator and the flight identification, and may contain the departure time and assigned altitude. Multiple combinations, not to exceed five (5), of the previous mentioned fields may be entered (optional).

The acceptance checks specified are format and logic checks. The checks are required to ensure that Departure messages contain the proper fields in the proper sequence and that the contents of the data fields agree with the existing data contained in the flight plan to which the Departure message is applied. When an error occurs in a logical Departure message within a multiple Departure message, the logical message is rejected and the error reason is returned. An error in a logical Departure message within a multiple Departure message is not correctable. Thus, each logical message within a multiple Departure message is either accepted or rejected with a response.

4.5.3 Format

4.5.3.1 Required and Optional Fields Checks

The format checking applied to determine the required and optional fields is as follows:

a. Each logical message is determined by locating its field 01.

b. If a logical message contains less than the minimum number of fields, the logical message is rejected and the following rejection message is returned:

REJECT - MESSAGE TOO SHORT

c. If a logical message contains more than the maximum number of fields, the logical message is returned:

REJECT - MESSAGE TOO LONG

d. If the logical message contains two or four fields, no optional field checking is performed.

e. If the logical message contains three fields, the field immediately following field 02 is format checked as if it were field 07. If this check indicates a format error, that same field is format checked as if it were field 08. If the check again reveals a format error, the following rejection message is returned:

REJECT - cofie FORMAT

4.5.3.2 Flight Identification (Field 02)

The format requirements for field 02 are the same as for field 02 contained in Amendment messages except that NAS format is not applicable because Departure messages are not received from adjacent NAS facilities.

Field 02 in a DM received from an ARTS facility contains the NAS CID in the following format:

dda

Otherwise, a Retransmit Message (DX) is returned to the source.

An asterisk may be suffixed to field 02 to indicate that any applicable Preferential Departure Route (PDR) will be suppressed. If the /OK is also suffixed to field 02, the asterisk must appear first as shown in the following examples:

AA1 *
AA1/OK
AA1 */OK
AA1 /IND*/OK
325*/OK

4.5.3.3 Departure Time (Field 07)

The departure time (field 07) is required in all DM messages received from an ARTS III facility and is optional in DMs from other sources. When present, field 07 must contain four digits, thus:

dddd

where:

dd being the first two digits (hours) must not exceed 23, and the last two digits (minutes) must not exceed 59

or two characters and two digits, thus;

LLdd

where:

LL must be the letters XX, and the two digits (minutes) must not exceed 99. This configuration signifies a relative time from the current time.

Otherwise, the following response is outputted:

07 TIM cofie FORMAT

4.5.3.4 Assigned Altitude (Field 08)

Field 08 is undefined for Departure messages received from ARTS III facilities and is optional in DMs from other sources. When present, this field must contain one of the formats specified for field 08 of a Flight Plan (FP) message, which are:

(d)dd
OTP
OTP/(d)dd
VFR
VFR/(d)dd
ABV/(d)dd
(d)dd B (d)dd
(d)dd/Fix/(d)dd

where:

"fix" must be a valid fix format. Otherwise, the following error message is returned:

08 ALT cofie FORMAT

4.5.4 Logic

4.5.4.1 Flight Identification (Field 02)

If a Computer Identification Number (CID) is entered as flight identification (field 02), the CID must currently be assigned to a flight plan resident in main memory. Otherwise, the following message is returned:

cofie FLID NOT STORED

If an aircraft identification is entered, this identification must uniquely match the identification of a flight plan currently residing in core. If the option element, departure point, is included within flight identification, it must be included in the flight identification match, i.e., it must match the first route element of field 10 for the stored flight plan.

If the entered flight identification does not match the flight identification of any of the resident flight plans in main memory, the following error message is returned:

cofie FLID NOT STORED

If a discrete beacon code is entered as flight identification, it must have the status of an assigned beacon code. Otherwise, the following error message is returned:

cofie FLID NOT STORED

If a field 02 amendment has been applied, no DM messages will be accepted for this flight until all aircraft ID update messages are acknowledged or have been printed on the associated FSP. When a DM message is entered during this period, the following message is returned:

REJECT - AID UPDATES PENDING

When a DM message is received from an ARTS III facility, the CID is contained in field 02 and the CID must currently be assigned to a flight plan resident in main memory. Otherwise, a Transmission Rejected (DR) message is returned to the ARTS III facility.

If the entered flight identification matches more than one flight plan in main memory, the following error message is returned:

cofie FLID DUPLICATION

In addition to the preceding error message, a list of all duplicated flights is returned. The list tabulates, for all duplicated flights, the Computer Identification Numbers and departure points. For all proposed flights, furthermore, the proposed departure time is included.

Once the flight plan has been uniquely identified in main memory, the following checks are performed:

a. If the flight plan is active, the following error message is returned to sources other than ARTS III:

   02 AID cofie FLIGHT ACTIVE

b. If the flight plan is proposed, and its aircraft identification duplicates the aircraft identification of another active flight plan in main memory, the following error message is returned:

   02 AID cofie INVALID-DUPLICATE FLIGHT ACTIVE

c. If the aircraft identification of the flight plan is the letter “M,” the following rejection message is returned:

   REJECT - AID MISSING

d. If the entered AID matches the AID of a tentative flight plan in crosstell, the message is rejected and the following rejection message is returned:

   REJECT - TRACK IN CROSSTELL STATUS

   If the flight plan is active, and the source of the DM message is an ARTS III facility, a Transmission Accepted (DA) message is returned and no further processing occurs.

e. If the referent flight plan is a tentative flight plan, the following Rejection message is returned:

REJECT - (contents of field 02) TENTATIVE FP STORAGE

f. If the flight plan is proposed and its aircraft identification matches the aircraft identification of a tentative flight plan that is in Interfacility Point Out Status, the following error message is returned:

REJECT - AC IN INTERCTR POINTOUT

4.5.5 Resultant Outputs

4.5.5.1 Proposed Departure Time Update

A Proposed Departure Time Update message is generated for those sectors currently posting strips for the flight, excluding the sector that entered the Departure message. But if a posting within a sector qualifying for an update by this rule received a departure coordination strip at proposed time, and if, at activation time, that posting is the first in the FPA in which a PAR is applied, then that posting will receive a new strip with the required PAR alphanumerics. This could result in updates and a strip to the same sector.

4.5.5.2 Remove Strips Messages

Remove Strips messages are generated for all sectors bypassed as the result of the Departure message.

4.5.5.3 Situation Display

Appropriate messages will be sent to the R-position console for display control if the Departure message affects Situation Display Departure or Inbound List entries. The list entries may be affected by departure time or altitude updates.

4.6 DISCRETE CODE REQUEST (QB)

This message is used to request or change a discrete beacon code. This action cannot be input in the same message with any other action that also requires a Flight Identification.

4.6.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 (60) 02

b. Field Contents

01 QB or DQ
02 Flight Identification
60 Logic check override (/OK)

c. Examples

QB N743Z
DQ AA12/OK

d. Error Indicators

(cofie) FORMAT

4.6.2 Logic

a. With the exception of an aircraft which has been assigned tentative flight plan storage only, the aircraft must have an equipment qualifier which indicates beacon capability. The qualifier, unless missing under the condition just cited, must indicate discrete code capability.

b. (Non-R-position input) When there is no corresponding "R" position for the entering "D" position and the aircraft either does not have assigned flight plan storage, or has proposed flight plan storage, tentative flight plan storage is not established and the input is rejected.

c. When a logic check override is entered with the flight identification and no FP storage is assigned, the input is rejected.

d. If Field 02 references a flight which is in Interfacility Point Out status, the following Rejection message is returned:

AC IN INTERCTR POINTOUT

e. Error Indicators

AC IN INTERCTR POINTOUT
AID UPDATES PENDING
CORRECTION PENDING - source
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position input)
NO BCN CODE QUAL
NO DISCRETE CODE QUAL
NO TB FLIGHT ID CAPTURE (R-position input)
NOT YOUR CONTROL
PVD NOT CONFIGURED (D-position input of QB message)
SECTOR dd HAS CONTROL
TOO MANY FP

TRACK IN CROSSTELL STATUS
FLIGHT IN HNH HANDOFF

4.6.3 Processing

If this action causes the capacity of the Beacon Code Selection List to be exceeded, responses will be generated.

4.6.3.1 Aircraft Without Assigned FP Storage

If the aircraft does not have assigned flight plan storage:

a. Assign a beacon code.

b. If a new discrete beacon code is assigned as a result of this action and the aircraft has neither an associated track nor an extrapolation status of NONE, SUSPEND, or HOLD, the track will be eligible for automatic track initiation.

c. If the assigned beacon code is not already present in the sector's Beacon Code Selection List, add it to the list.

d. Place the aircraft under the control of the requesting sector.

e. If an "Active" flight plan for the aircraft should be subsequently entered, a tentative active merger will occur.

f. Store the assigned beacon code in FP storage.

g. Clear tentative flight plan storage, remove the code from the list of codes eligible for automatic track initiation, and return the code to the list of codes available for assignment if no track is started or if the flight plan is entered within the adapted time parameter.

4.6.3.2 Aircraft With Assigned FP Storage But No Track

a. Assign a beacon code based on the beacon allocation scheme.

b. If a new discrete beacon code is assigned as a result of this action and the aircraft has neither an associated track nor an extrapolation status of NONE, SUSPEND, or HOLD, the track will be eligible for the automatic track initiation list.

c. Store the assigned beacon code in FP storage.

d. If the assigned flight plan is a proposed flight plan, and the action was entered using an AID as a flight identification, assign tentative flight plan storage. If the action was entered using any other field 02 format, reject the message with "FLIGHT NOT ACTIVE."

4.6.3.3 Aircraft With a Track

If the aircraft has a track (and therefore, assigned FP storage), process as described in par. 4.6.3.2. However, the new code is not to be placed in the list of codes eligible for automatic track initiation.

4.6.4 Resultant Outputs

a. Appropriate code addition/deletion messages will be sent to update the affected Beacon Code Selection List.

b. If the aircraft has an entered flight plan:

1. A Flight Plan Data Printout and "D" position CRD update messages will be generated.

2. Amendment messages will be transmitted, if necessary, to NAS and/or ARTS III facilities.

3. If a new code is assigned to an aircraft, a Beacon Code Assignment message will be generated.

4.7 FLIGHT PLAN (FP)

The purpose of the Flight Plan (FP) message is to establish a database for a flight plan. Each FP message accepted by the program becomes part of the stored database. The entire flight plan, as accepted, is stored for use by the strip printing, display, printout, and interfacility data transfer functions. Individual fields of data are interpreted, processed, and stored for use by other program functions.

4.7.1 Message Content and Source

Each FP message is composed of a series of fields entered in a specific order. Each field is separated from the preceding field by at least one space character (field separator). Some fields are optional.

SOURCE	DESIGNATOR	FORMAT	PURPOSE
D-Position	FP	01 02 03 (04) 05 06 07 09 10 (11) (12 17) (12 17)…etc.	To enter proposed flight plan data
A-Position	FP	01 02 03 (04) 05 06 07 08 10 (11) (12 17) (12 17)…etc.	To enter active flight plan data

4.7.2 Acceptance Checking

The acceptance checks specified are message format and logic checks. The checks are required to ensure that messages contain the proper fields of data in the proper sequence, that data entered in one field logically agree with data of other fields, and that there is no conflict with the stored database.

4.7.3. Format

4.7.3.1 Aircraft Identification (Field 02)

When intended as an aircraft identification, field 02 is two to seven alphanumerics in length in the following format:

La(a)(a)(a)(a)(a)

The letter "M" may be entered in place of the aircraft identification (to imply the identification is missing). For a test flight plan, the first three characters must be "TTT."

4.7.3.2 Aircraft Data (Field 03)

Field 03 consists of two to nine characters in the following format:

((d)a/)La(a)(a)(/L)

Otherwise, the following error message is returned:

03 TYP cofie FORMAT

4.7.3.3 Beacon Code (Field 04)

Field 04 is an optional field and, if entered, contains a four-digit beacon code, no digit being greater than seven in the following format:

dddd

Otherwise, the following error message is returned:

cofie BCN CODE FORMAT

4.7.3.4 Speed (Field 05)

Field 05 is two to four characters in one of the following formats:

Lddd
(d)(d)dd
SC (Speed Classified)

where:

Lddd = "L" must be the letter "M" and the three digits cannot exceed 500

(d)(d)dd = The four digits format cannot exceed 3700

Otherwise, the following error message is returned:

05 SPD cofie FORMAT

Leading zeros are allowed in the digit formats.

4.7.3.5 Coordination Fix (Field 06)

Field 06 contains a fix in the format of a fix name, lat/long, or fix radial distance. Otherwise, the following error message is returned:

06 FIX cofie FORMAT

4.7.3.6 Coordination Time (Field 07)

Field 07 is five alphanumerics in one of the following formats:

Ldddd
LXXdd

The letter is D, E, or P. The first two digits (hours) do not exceed 23 and the last two digits (minutes) do not exceed 59. When desired, the first two digits (hours) may be replaced by the letters XX, in which case, the minutes entries are valid to 99. This represents a relative time from the current time. Otherwise, the following error message is returned:

07 TIM cofie FORMAT

4.7.3.7 Assigned Altitude (Field 08)

Field 08 is required in active FP messages. This field is two to twenty characters in one of the following formats:

(d)dd
OTP
OTP/(d)dd
ABV/(d)dd
(d)dd B (d)dd
(d)dd/fix/(d)dd
VFR
VFR/(d)dd

where:

"fix" is a valid fix format.

Otherwise, the following error message is returned:

08 ALT cofie FORMAT

4.7.3.8 Requested Altitude (Field 09)

Field 09 is required in a proposed FP message. This field consists of two to seven characters in one of the following formats:

(d)dd
OTP
OTP/(d)dd
(d)dd B(d)dd
ABV/(d)dd
VFR
VFR/(d)dd

Otherwise, the following error message is returned:

09 RAL cofie FORMAT

4.7.3.9 Route (Field 10)

If field 10 is missing, the following message is returned:

REJECT - MESSAGE TOO SHORT

4.7.3.10 Remarks (Field 11)

Field 11 is optional and may contain one or two elements, each identified by a remarks code. The field can contain either element alone, or both elements. When field 11 contains both intracenter and intercenter elements, the intracenter element must be entered first. The intercenter remarks element is identified by a clear weather symbol (O) preceding it. The intracenter remarks element is identified by an overcast symbol (⊕) preceding it.

NOTE: Both intracenter and intercenter remarks are printed in the originating center. However, intracenter remarks are not transmitted beyond the originating center; intercenter remarks are transmitted.

A maximum of twenty characters in the intracenter remarks element is accepted by the program. If the limit is exceeded, the residual data is truncated and a plus (+) sign is suffixed to the last accepted character in the element.

If the intracenter remarks are truncated, or the last character of the intercenter remarks is a plus (+) sign, or total remarks exceed forty characters, route to an adapted KVDT a REFERRED ACCEPT message with the phrase LONG RMKS appended. This message is in addition to the accept response which is returned to the entering source.

The program interprets the clear and overcast weather symbols in order to designate the elements as either intracenter or intercenter. When the clear weather symbol is encountered, all subsequent data is considered to be intercenter remarks. When the overcast symbol is encountered, the program shall search field 11 to determine if a clear weather symbol is present. When both intracenter and intercenter remarks are present, trailing blanks are removed from the intracenter remarks element.

When parameter IITS is "OFF," the source is not NAS and data not preceded by a remarks code is detected following the space ending the route field (field 10) of a flight plan message. In this case, the following error message is returned:

11 RMK cofie FORMAT

NOTE: When optional fields (12,17) are entered in an FP message following field 11, field 11 has to end with an asterisk character (*) followed by a space character. The asterisk tells the program that there are other data fields to follow and that they are not part of field 11. The asterisk is stored as part of field 11.

4.7.4 Logic

4.7.4.1 Aircraft Identification (Field 02)

A Duplication check is performed to determine if a flight plan having the same Aircraft Identification (AID) as contained in the entered message already exists in the stored database. The departure point and flight plan status (proposed or active) are also used in the duplication check. If this is an initially entered proposed flight plan (FP or SP) and the AID (field 02) departure point (field 06) and the flight plan status match, then the proposed departure time (field 07) and route of flight (field 10) are checked for duplication. If only the letter "M" was entered in this field, no duplication check is performed.

Furthermore, if only the letter "M" was entered and the flight plan status is "active," the following rejection message is returned:

REJECT - AID MISSING

4.7.4.2 Aircraft Data (Field 03)

When the Special Aircraft Indicator is entered, it must immediately precede the element separator and the type of aircraft. The Special Aircraft Indicator must be the single letter "H" (heavy jet), "T" (TCAS), "B" (both heavy jet and TCAS), "F" (B757) or "L" (B757 with TCAS). Otherwise, the following message is returned:

03 TYP cofie INVALID SPECIAL A/C IND

When the airborne equipment qualifier element is entered as part of this field, the element must match an adapted equipment code. Otherwise, the following message is returned:

03 TYP cofie INVALID EQUIPMENT QUALIFIER

4.7.4.3 Beacon Code (Field 04)

When a discrete or nondiscrete beacon code is entered in a flight plan whose airborne equipment qualifier indicates that the aircraft has no beacon capability or when a discrete beacon code is entered in a flight plan whose airborne equipment indicates that the aircraft has only nondiscrete beacon capability, the following error message is returned:

04 BCN cofie CODE/QUAL INCOMPATIBLE

4.7.4.4 Speed (Field 05)

If the classified speed designator (SC) is entered in field 05, no logic check is necessary. An entered speed of zero results in the following error message being returned:

05 SPD cofie ILLEGAL

4.7.4.5 Coordination Fix (Field 06)

Refer to NAS-MD-312 for a description of the checks performed on field 06.

4.7.4.6 Coordination Time (Field 07)

If a D-time is entered, the time must be within Present Time Comparison Interval (PTCI) minutes in the past or future. Otherwise, the following error message is returned:

07 TIM cofie INVALID

If a P-time is entered, the time is considered to be in the past if it is within Next Day Time Interval (NDTI) minutes in the past. Otherwise, it is considered time in the future.

If an E-time is entered, the time must be less than or equal to Next Day Time Interval (NDTI) minutes in the past or less than or equal to Estimate Time Interval (ESTI) hours in the future. Otherwise, the following error message is returned:

07 TIM cofie INVALID

4.7.4.7 Altitude (Fields 08 and 09)

If field 08 or 09 contains a blocked altitude, the second altitude must be greater than the first altitude. Otherwise, the following error message is returned:

08 ALT or 09 RAL cofie INVALID BLOCKED ALT

If field 08 has the format (d)dd/fix/dd(d) and the fix between the two altitudes is the departure or arrival point, the following error message is returned:

08 ALT cofie INVALID FIX

4.7.4.8 Route (Field 10)

Refer to NAS-MD-312 for a description of the logic checks performed on field 10.

4.7.5 Processing

4.7.5.1 Aircraft Data (Field 03)

If the Special Aircraft Indicator has been entered in the aircraft data field (field 03), the indicator is printed on all strips including FDEP strips. The Special Aircraft Indicator is included in intercenter and ARTS III transfer of the flight plan.

4.7.5.2 Speed (Field 05)

If the classified speed designator (SC) is entered in field 05, the Classified Aircraft Speed Parameter (CASP) is applied. If the speed is entered in the format of Lddd, ddd is interpreted as the filed MACH number, with a decimal point being placed just right of the left-most digit.

4.7.5.3 Time (Field 07)

When an F-time is received from an adjacent NAS center, the following processing is performed:

a. Print strips for the first postable fix, according to the Inbound Strip Printing Interval (ISPI) setting, with the CTA highlighted.

b. Print subsequent strips for a flight plan activated by a field 07 amendment message that changes the F-time to E-time.

If a flight plan is neither activated by a field 07 amendment nor printed as a result of planned shutdown, drop the flight plan from main memory after a Proposed Flight Plan Drop Interval (PFDI).

4.7.5.4 Altitude (Fields 08 and 09)

Each flight plan contains one altitude field, and the altitude is interpreted and stored as assigned altitude or as requested altitude, depending on the flight plan activity status:

a. Assigned Altitude - the activity status is active.

b. Requested Altitude - the activity status is proposed.

When field 08 has the format (d)dd/fix/dd(d) and when the fix is on the filed or converted route, the flight plan is processed to the fix at the altitude preceding the fix. After the fix, the assigned altitude is that filed following the fix. If the fix exists more than once in the filed or converted route, the first occurrence of the fix is used for processing. If the filed fix between the two altitudes is not on the filed or converted route, use the altitude preceding the fix for processing and the (d)dd/fixldd(d) format for display, printing, and intercenter transfer until the altitude is amended.

4.7.5.5 Route (Field 10)

Refer to NAS-MD-312 for a description of the route processing performed.

4.7.5.6 Computer Identification Number (CID)

A unique Computer Identification Number (CID) is program-assigned to each flight plan. The CID format is dda. In the assignment of ddd-format CIDs, the number that has been available for use for the longest time is assigned next. The ddL format is assigned only when all numbers of the ddd format are in use. The letters “I” and “O” are not used in the CID. The CID remains assigned to this flight plan until the flight plan is dropped by the program.

4.7.5.7 Estimated Time En Route (ETE) or Estimated Time of Arrival (ETA)

The Estimated Time En route may be suffixed to the destination element of a proposed flight plan. Upon activation of the flight plan, the ETE is converted to an Estimated Time of Arrival (ETA). Thus, an ETA may be suffixed to the destination element of an active flight plan.

4.7.6 Resultant Output

Several output functions are performed as the result of entering an FP message. Some outputs are generated upon initial processing of the input message, while others are generated on a time-related basis. The purpose of this section is to describe the various output functions concerning flight plan data.

4.7.6.1 Computer Responses

An acceptance, rejection, or error message is returned to the source.

4.7.6.2 Intracenter Responses

An appropriate response message (accept, error, or reject) is returned to the source.

4.7.6.3 Interfacility Response

DA, DR, and DX messages are sent to adjacent NAS centers and ARTS III facilities upon receipt and acceptance checking of an FP message.

An Acceptance message (DA) is transmitted by the receiving NAS center in response to the receipt of a valid FP message.

A Rejection (DR) message is transmitted by the receiving NAS center in response to the receipt of an FP message containing a logic error in any field other than field 10, in the first route segment of field 10, or a format error in any ICAO Associated Data Field.

A Retransmit message (DX) is transmitted by the receiving NAS center in response to the receipt of an FP message containing a transmission error, or format error in any field checked for format, except those that contain ICAO associated data.

When a field 10 logic error is detected in other than the first route segment, the flight plan is accepted. A DA message is transmitted if the flight plan is received from an adjacent NAS center or ARTS III facility.

An incomplete route alert is subsequently outputted to the sector whose area contains the last posted fix.

4.7.6.4 Intercenter Flight Plan Transfer

The content of the intercenter flight plan transfer message reflects the status of the flight plan just prior to transmission. Transmission of the flight plan message is inhibited if field 02 contains only the letter "M" or qualifies the flight plan as a DYSIM Training Flight Plan. The intracenter remarks element of field 11 is not transmitted.

Proposed flight plans are transmitted based on boundary crossing time or the departure airport adaptation. Each center has a Proposed Boundary Crossing Time (PBCT) parameter for each adjacent center. Proposed internal flight plans are transmitted to the adjacent center if the proposed route will enter the adjacent center's airspace and the flight time between the departure point and the boundary crossing point is less than or equal to PBCT, or if the departure airport adaptation specifies transmission regardless of PBCT. Transmission of the proposed flight plan is initiated when the present clock time is within the proposed departure time plus the departure delay value less the Departure Strip Printing Interval (DSPI).

When a previously transmitted proposed flight plan is activated, an Amendment message is transmitted.

Active flight plans are transmitted to the adjacent center based on either the Active Boundary Crossing Time (ABCT) stored for the adjacent NAS center, or the Metering Boundary Crossing Time (MBCT).

An active flight plan will be transmitted to an adjacent center when the present time is within MBCT minutes of the boundary crossing time if both the following conditions are true:

a. The flight plan destination in field 10 is an adapted external airport (in EXMAPT record) with the parameter MBCT adapted, and

b. The value for MBCT is larger than the value of ABCT.

Otherwise, the flight plan will be transmitted when the present time is within ABCT minutes of the flight's boundary crossing time.

When parameter Extended Interfacility Processing Switch (EIPS) is "OFF," the intercenter flight plan will not contain ICAO associated data.

4.7.6.5 Controller Alert for Incomplete Route

Processing of a flight plan entered with an Incomplete Route Indicator or improper route data is allowed, provided that at least the first route segment in the receiving center is acceptable and can be converted. In such cases, flight progress strips are printed for the acceptable portion of the route and an Incomplete Route Indicator (three highlighted Xs) is printed after the last acceptable route element in the route portion of the flight progress strips. If a route amendment is not entered, correcting or completing the unacceptable or missing route data, within a predetermined time prior to the flight's reaching the last posted fix, an Incomplete Route Alert is outputted to the sector or sectors posting this last fix.

4.7.6.6 Output for Display on Situation Display

Appropriate messages will be sent to the R-position console for display if the flight plan affects Situation Display list entries or data block entries.

4.8 HOLD (QH)

The Hold message is used to initiate, modify, terminate or cancel a hold action for any specified flight. The hold fix may be a converted fix along the aircraft's route of flight, the present track position, or, if the aircraft is not being tracked, the present flight plan position. Any delay data (filed or adapted) associated with an entered fix will be superseded by this message. When time is entered as part of the input, it will be displayed in Hold List entries as a reminder to the controller of when further clearance was promised. The time will not be used for changing extrapolation status or to trigger automatic track initiation, and will not be forwarded in any interfacility transfer of hold data.

4.8.1 Format

a. Fields

DEVICE	FIELDS	
R-position or D-position	01	(60) (21) 02 (QH input)
A-position	01	02* (21) (HM input)

*Indicates a verification possibility

b. Field Contents

00 Source Identification
01 QH (R-position or D-position) or HM (A-position)
02 Flight Identification
21 Hold Data
60 Logic Check Override

c. Examples

QH 1130
QH COL/2235
QH 0100 213/OK
QH (TBE)

d. Error Indicators

cofie FLID FORMAT (HM message only)
FLID FORMAT
cofie FORMAT
ILLEGAL FLIGHT ID
INVALID TIME (QH message only)
NO TB FLIGHT ID CAPTURE (R-position input)
REJECT - cofie INVALID TIME (HM messages only)
REJECT - MESSAGE TOO LONG (HM messages only)
REJECT - MESSAGE TOO SHORT (HM messages only)

4.8.2 Logic

a. If an aircraft is entered, this identification must precisely match the identification of a flight plan currently residing in main memory. If the optional element, departure point, is included within the flight identification, unless input source is NAS, it must be included in the flight identification match (i.e., it must match the first element of field 10 for the referent flight plan).

A Hold action will be rejected if field 02 identifies a flight which is in Interfacility Point Out status and which has nontentative flight plan storage, and the message entry source is not an adjacent NAS Center.

In addition to the error message produced when the entered flight identification matches more than one active flight plan in core, a list of all duplicated active flights is returned (except QH message input). The list tabulates the Computer Identification Numbers and departure points for all duplicated flights.

A Hold action will be rejected if the specified aircraft has been assigned tentative flight plan storage only.

An FDEP may not enter a Hold message for a tracked aircraft.

A Hold action will be rejected if no fix is entered in field 21 and the extrapolation status for the flight plan is SUSPEND.

If a fix element is entered in field 21, the entered element must be a fix, or an adapted substitute identity for a fix, on the converted route of flight at or beyond the reference fix.

The fix element (field) entered cannot be a loop entry fix, loop fix, or loop exit fix on a Type 2 coded route loop.

The fix entered cannot be an ambiguous fix, i.e., the fix cannot exist more than once in the route of flight.

If a strip number is entered, it must be currently assigned for the referent flight. The strip number entered cannot reference a loop entry fix, loop fix, or loop exit fix on a Type 2 coded route loop.

If a fix element or strip number is entered, the extrapolation status for the flight plan cannot be HOLD.

If neither fix element nor strip number is entered, the flight cannot be on a Type 2 coded route loop.

When a time element is entered, different logic checks are applied depending upon whether a hold fix is entered in the Hold message:

1. When no hold fix is entered and:

    a) the extrapolation status is HOLD, the time entered must be within the range of Present Time Comparison Interval (PTCI) minutes in the past and Hold Message Time Interval (HMTI) hours in the future, relative to present clock time, or

    b) the extrapolation status is other than HOLD, the time entered is considered to be future time and must not be more than HMTI hours later than present clock time.

2. When a hold fix is entered, the time entered must be later than the CIA for the entered fix and earlier than or equal to the CTA plus HMTI hours.

After a Transfer Accept (TA) message is received indicating that track control for a flight has been transferred to an adjacent center, Hold messages are not allowed.

After a Transfer Accept (TA) message is received indicating that track control for a flight has been transferred to an ARTS facility, Hold messages are not eligible unless the logic check override indicator (/OK) is entered.

(R-position input) The Hold Action is ignored and no response is given if it is entered when Surveillance Tie-Off is in effect.

(D-position input of QH message) The Hold Action is rejected if it is input when Surveillance Tie-Off is in effect.

If a hold cancellation (i.e., a "C" in field 21) is entered for a flight plan for which no hold data is stored, the message is rejected.

b. Error Indicators

1. QH Message Input Only

AC IN INTERCTR POINTOUT
CORRECTION PENDING - source
DUPE FIX - USE STRIP NO.
FLID DUPLICATION
FLID FORMAT
FLID NOT STORED
FLIGHT NOT ACTIVE
FLT NOT ELIGIBLE
FLT IN HOLD - FIX ILLEGAL
FLT NOW ON LOOP
FUNCTION TIED OFF (D-position input of QH message)
ILLEGAL FLIGHT ID
INVALID FIX
INVALID STRIP NUMBER
INVALID TIME
NO HOLD STORED
NOT YOUR CONTROL
PVD NOT CONFIGURED (D-position input of QH message)
SECTOR dd HAS CONTROL
TENTATIVE FP STORAGE
TRACK IN CROSSTELL STATUS
FLIGHT IN HNH HANDOFF

2. R-position and Non-R-position Input cofie FORMAT

3. HM Message Input Only

02 AID cofie VERIFY ELIGIBILITY
cofie AMBIGUOUS FIX-USE STRIP NO.
cofie FLID FORMAT
cofie FLID NOT STORED
cofie FLID DUPLICATION
cofie FLT IN HOLD-FIX ILLEGAL
cofie INVALID FIX
cofie INVALID STRIP NUMBER
cofie INVALID TIME REJECT - AC IN INTERCTR POINTOUT
REJECT - CORRECTION PENDING AT source REJECT - cofie
FLIGHT NOT ACTIVE
REJECT - FLT NOT ELIGIBLE
REJECT - FLT NOW ON LOOP
REJECT - NO HOLD STORED
REJECT - NOT YOUR CONTROL
REJECT - (contents of field 02) TENTATIVE FP REJECT - TRACK IN
CROSSTELL STATUS
REJECT - FLIGHT IN HNH HANDOFF STATUS

4.8.3 Resultant Outputs

a. If a fix is included in the input message and the aircraft has been put in Hold status:

1. The data block will be dropped, and

2. The aircraft will be listed in a Hold sublist for the Hold fix, or the new time portion of the hold data will be displayed in the appropriate Hold List on the Situation Display at the entering sector.

b. If a fix is not included in the input message and the aircraft is not currently in Hold status:

1. The data block will remain positioned at the hold fix,

2. The data block will contain “HOLD” in field E, and

3. The aircraft will be listed in a Hold sublist whose fix is indicated as “P/P.”

c. Aircraft in HOLD are not eligible for Distance Reference Indicator (Halo) display. Aircraft with halos displayed that enter a HOLD status will have their halos deleted.

d. Adjacent NAS Update

An Amendment message for field 07 (Coordination Time) is sent to the adjacent NAS center whenever a hold cancellation or hold termination action is taken if the flight plan was previously transmitted to that center.

A Hold message containing only the coordination fix is sent to the adjacent NAS center whenever a hold action for an outbound flight is performed if the flight plan was previously transmitted to that center. That is, an indefinite hold is placed in effect.

If the flight is in Interfacility Point Out Status, the Adjacent NAS Update will cause the following to happen in the adjacent NAS center:

1. The full data block will remain positioned at the coordination fix.

2. The full data block will not contain "HOLD" in field E, and

3. The aircraft will not be listed in a Hold sublist.

e. Time Updates

When a hold is established, an Indefinite Hold Update message is routed to all sectors currently posting strips for the referent flight plan, starting with the sector containing the hold fix and excluding the entering sector.

When a hold is cancelled by entry of another hold, nonuniform time updates are sent to all posted sectors beginning with the old hold fix regardless of PTUI. However, time updates will not be sent for fixes beyond the new hold fix.

f. Flight Progress Strips

Strips printed for a flight that has hold in effect are printed up to and including the hold fix sector. Additionally, the first postable sector past the hold fix sector is printed at this time. If the hold fix is the first fix in the sector and is nonpostable, and the strip cycle penetrates the hold sector, the hold sector's strips will be printed at this strip cycle. Additionally, the first postable sector past the hold sector is printed at this time. If the hold fix is the last fix in the sector and nonpostable, the sector following the hold sector is printed at this time as well as the next sector to receive strips. Strips will be printed past the hold sector, if, as a result of an amendment, a sector previously posting strips is to receive the first strip series.

g. Revisions in the Estimated Hold Departure Time will result in the update of the Hold list display.

h. ARTS III Updates

When a Hold message is entered for a fix at or preceding the coordination fix for an ARTS III facility and the flight plan was previously sent to that facility, no field 07 amendments are sent to the facility until the hold is cancelled or completed, at which time a field 07 amendment is transmitted.

If the hold is terminated by entry of the cancellation/termination action (i.e., the entry of "C" as field 21) and if the aircraft has a discrete code assigned, add it to the automatic track initiation list.

i. An aircraft without discrete beacon code capability will not be released from Hold status until the hold is cancelled by a Track action, Progress Report, or another Hold action without time or fix input.

j. If the input action is a Hold message from an R-position source which establishes, modifies, or cancels a future hold, an acceptance message will be generated as a positive indication that the action has been validated and accepted. An acceptable Hold Message from a non-R-position source will always result in an acceptance message.

4.9 MISSION FLIGHT PLAN (MP)

The Mission Flight Plan message is used to enter mission flight plan data. The MP message is also used to terminate the printing of strips for a previously entered mission flight plan.

4.9.1 Message Content and Source

The following are the legal sources and fields of the MP message:

SOURCE	FIELDS	PURPOSE
D-position, A-position	01 22 02 03 05 06 07 08 10 (11)	To initiate the printing of strips for this flight plan.
		or
	01 02	To terminate printing of strips for the specified flight plan.

4.9.2 Format

4.9.2.1 Mission Data (Field 22)

The mission data (field 22) may contain one to four elements with slash (/) separators, and each element may contain two to six alphanumerics followed by a mandatory two digits in the following format:

aa(a) (a) (a) (a)dd(/aa(a) (a) (a) (a)dd) (/aa(a) (a) (a) (a)dd)
(/aa(a) (a) (a) (a)dd)

If the field is improperly formatted, an error message is generated containing the following data:

cofie FORMAT

4.9.2.2 Aircraft Identification (Field 02)

The format requirements are the same as field 02 in a Flight Plan message.

Mission flight plans entered with a simulated training flight identification (SAID) will be rejected and the following message will be returned:

REJECT - FLID FORMAT

4.9.2.3 Aircraft Data (Field 03)

The format requirements are the same as for field 03 in a Flight Plan message. Otherwise, an error message is generated containing the following data:

03 PIP cofie FORMAT

4.9.2.4 Speed (Field 05)

The format requirements are the same as for field 05 in a Flight Plan message.

4.9.2.5 Coordination Fix (Field 06)

The format requirements are the same as for field 06 in a Flight Plan message.

4.9.2.6 Coordination Time (Field 07)

Coordination time (field 07) must be one to five characters in length in the following format:

L(dddd)

where:

L must be the letter “E,” “P,” or “D,” and the first two digits (hours) must not exceed 23 and the last two digits (minutes) must not exceed 59.

When desired, the first two digits (hours) may be replaced by the letters “XX,” in which case the minutes entries are valid to 99. This represents relative time from the current time.

Otherwise, the following error message is returned:

07 TIM cofie FORMAT

4.9.2.7 Assigned Altitude (Field 08)

The assigned altitude (field 08) must be two to eight alphanumerics in one of the following formats:

(M)(d)dd
(M)OTP
(M)VFR
(M)VFR/(d)dd
(M)(d)ddB(d)dd

Otherwise, the following error message is returned:

08 ALT cofie FORMAT

4.9.2.8 Route (Field 10)

The format check for route (field 10) is the same as that specified for the Flight Plan message.

4.9.2.9 Remarks (Field 11)

The format check for remarks (field 11) is the same as that specified for the Flight Plan message.

4.9.3 Logic

4.9.3.1 Mission Data (Field 22)

The first two to six alphanumerics of the element specify the Logical Device Number (LDN) or the logical device mnemonic of the flight strip printer on which strips are to be printed. The last two characters specify the number of sets of strips to be printed on the specified flight strip printer.

The LDN or logical device mnemonic in each element must be an adapted flight strip printer.

Otherwise, the following error message is returned:

cofie INVALID PRINTER

If an LDN or logical device mnemonic in one element duplicates an LDN or logical device mnemonic in another element of a field, the following error message is returned:

cofie DUPLICATE PRINTER

If the last two digits of an element are both zero, the following error message is returned:

cofie ILLEGAL COUNT

4.9.3.2 Aircraft Identification (Field 02)

Duplication checks for aircraft identification (field 02) are not performed. If an MP message is entered containing only fields 01 and 02, field 02 must match the Aircraft Identification (AID) of a Mission Flight Plan in storage. Otherwise, the following error message is returned:

cofie FLID NOT STORED

4.9.3.3 Aircraft Data (Field 03)

No logic check is required for field 03.

4.9.3.4 Speed (Field 05)

The logic check for speed (field 05) is the same as that specified for Flight Plan message.

4.9.3.5 Coordination Fix (Field 06)

The logic check for coordination fix (field 06) is the same as that specified for the Flight Plan message.

4.9.3.6 Coordination Time (Field 07)

No logic check for field 07 is required.

4.9.3.7 Assigned Altitude (Field 08)

If a blocked altitude is entered, the altitude following the letter "B" must be greater than the altitude preceding the letter "B." Otherwise, the following error message is returned:

08 ALT cofie INVALID BLOCKED ALT

4.9.3.8 Route (Field 10)

The logic check for route (field 10) is the same as that specified for the Flight Plan message.

4.9.4 Processing

If the mission flight plan contains nine or ten fields, it is stored and initiates the outputting of strips; however, the flight plan is not a component of the flight plan database. Fix-time calculation and route processing are performed as specified for a flight plan message entered with an E or 0 time. If the MP message has a P time, it is processed as a 0 time. The current activity status of preferential routes is used. A Mission Flight Plan message containing only fields 01 and 02 terminates strip printing for all mission flight plans containing the entered aircraft identification (field 02).

Upon completion or termination of strip printing for a mission flight plan, that flight plan is deleted from storage. Mission plans are not included in the facility traffic count.

4.9.5 Resultant Outputs

4.9.5.1 Flight Progress Strips

All center flight progress strips generated for a Mission Flight Plan are printed on the flight strip printer specified in the MP message (field 22) in a continuous sequence. The current status of combined FPAs is used in the determination of posting.

A blank strip is used to separate sets of mission strips when more than one set is requested. This feature is optional and is set to the Blank Strip Override Parameter (BSOP) to the on or off condition.

4.9.5.2 Interfacility Transfer

No interfacility transfer of Mission Flight Plan data is made.

4.9.5.3 Accept Responses

Accept responses are returned to the source for KVDT and D-position and A-position inputs or to the HSP for card image dataset inputs.

4.10 QUALIFIER MODIFICATION (QB)

This action is used to change an aircraft's Airborne Equipment Qualifier in an entered flight plan.

4.10.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 (60) 03e 02

b. Field Contents

01 Message type (QB)
60 Logic Check Override
03e Equipment Qualifier
02 Flight Identification

c. Examples

QB I N5214S
QB A 003/OK
QB C (TBE)

d. Error Indicators

(cofie) FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input)

4.10.2 Logic

a. The input Airborne Equipment Qualifier must be a proper qualifier.

b. If a Code Modification Action and a Qualifier Modification Action are entered in the same message, they must be compatible (i.e., the equipment qualifier must indicate a beacon capability at least as high as that of the Code Modification Action).

c. (R-position input) The Qualifier Modification Action is ignored and no response is given if it is entered when Surveillance Tie-Off is in effect.

d. (D-position input) The Qualifier Modification Action is rejected if it is entered when Surveillance Tie-Off is in effect.

e. If field 02 references a flight which is in Interfacility Point Out status, the following Rejection message is returned:

AC IN INTERCTR POINTOUT

f. Error Indicators

AC IN INTERCTR POINTOUT
AID UPDATES PENDING
CODE/QUAL INCOMPATIBLE
CORRECTION PENDING - source
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position console input)
INVALID MESSAGE TYPE
NOT A VALID EQUIP QUAL
NOT YOUR CONTROL
PVD NOT CONFIGURED (D-position console input)
SECTOR dd HAS CONTROL
TRACK IN CROSSTELL STATUS
FLIGHT IN HNH HANDOFF
ICAO DATA PRESENT USE CH

4.10.3 Processing

a. The entered data will replace the Airborne Equipment Qualifier element of the Aircraft Data Field of the flight plan. If the number "0," is entered, the Airborne Equipment Qualifier will be deleted and the track class set to PRIMARY. If the new Airborne Equipment Qualifier indicates that the aircraft does not have beacon capability, the track class will be set to PRIMARY and the beacon code previously assigned, if any, will be deleted from the flight plan for the aircraft and from the automatic track initiation list, if it was contained therein. If the new Airborne Equipment Qualifier indicates that the aircraft has nondiscrete code capability and the aircraft does not have a nondiscrete code assigned, one will be assigned. If the new Airborne Equipment Qualifier indicates that the aircraft has discrete beacon capability, a beacon code assignment will be made. If the Airborne Equipment Qualifier indicates that the aircraft is capable of beacon interrogation and a track exists, the track class will be set to BEACON.

b. If a new discrete beacon code is assigned as a result of this action and the aircraft has neither an associated track nor an extrapolation status of NONE, SUSPEND, or HOLD, add the code to the automatic track initiation list.

4.10.4 Resultant Outputs

a. If the aircraft has an entered flight plan and this action did not cause the flight plan's route to be reprocessed:

   1. A Flight Plan Data Printout and "D" position CRD update messages containing the new qualifier and the new code, if any, will be generated.

   2. Amendment messages will be transmitted, if necessary, to NAS and/or ARTS III facilities. In addition, a Flow Control Amendment Information (AF) message containing field 03 will be transmitted to Central Flow Automation Facility (CFAF) for an eligible flight plan.

b. If a beacon code change has been made, appropriate code addition/deletion messages will be sent to the affected Beacon Code List(s).

c. If a beacon code change has been made, appropriate messages will be sent to the R-position to replace the old code with the new code in any list display or data block where it exists.

d. If a new code is assigned to an aircraft, a Beacon Code Assignment message will be generated.

e. If this action caused the flight plan's route to be reprocessed, the resultant output functions will be the same as a field 03 amendment that changes the airborne equipment qualifier and causes the route to be reprocessed.

4.11 PROGRESS REPORT (PR)

A Progress Report message is used to update the status of an active flight plan. It may be used to release a flight from a prior hold action.

4.11.1 Message Content and Sources

The following defines the legal sources and fields of the Progress Report message:

SOURCE		FIELDS
D-position	01	02* 18
A-position	01	02* 18

*Indicates a verification possibility

4.11.2 Acceptance Checking

The Progress Report (PR) message contains a message type designator, flight identification, and progress report data.

4.11.3 Format

4.11.3.1 Field 02

When flight identification (field 02) contains an aircraft identification and the optional departure point, the field must contain two to twenty characters in the following format:

La(a) (a) (a) (a) (a) (/aa(a) (a) (a) (a) (a) (a) (a) (a) (a))

The first element, aircraft identification, consists of two to seven alphanumerics, the first of which must be a letter.

The second element, the departure point, when present, must be separated from the first element by the element separator (/).

The departure point must be two to twelve characters, in the format specified for fix elements of field 10.

When intended as a Computer Identification Number (CID), field 02 must be two digits followed by a digit or letter:

dda

where:

"a" must not equal "1" or "0."

When intended as a Discrete Beacon Code, field 02 must be four digits:

dddd

NOTE: If a nondiscrete beacon code is entered, the following is returned:

REJECT - ILLEGAL FLIGHT ID

If any of the preceding requirements is not met, the following error message is returned:

cofie FLID FORMAT

4.11.3.2 Field 18

Progress Report data (field 18) contains a fix or strip number and may contain a time, and must be in one of the following formats:

fix (/dddd)

or

dd (/dddd)

where:

fix is a valid fix format of two to twelve alphanumerics.

dd of the format dd(/dddd) is entered, it is considered only as a strip number and must contain a value greater than 00.

dddd is time, the first two digits represent hours and cannot exceed 23, and the last two digits represent minutes and cannot exceed 59.

If either of the previous requirements is not met, the following error message is returned:

cofie FORMAT

4.11.4 Logic

4.11.4.1 Field 02

If a CID is entered as flight identification (field 02), the CID must currently be assigned to a flight plan resident in main memory. Otherwise, the following error message is returned:

cofie FLID NOT STORED

If an aircraft identification is entered, this identification must uniquely match the identification of a flight plan currently residing in main memory. If the optional element, departure point, is included within the flight identification, it must be included in the flight identification match, i.e., it must match the first element of field 10 for the referent flight plan.

If the entered flight identification does not match the flight identification of any of the resident flight plans in main memory, the following error message is returned:

cofie FLID NOT STORED

If a Discrete Beacon Code is entered as flight identification, this identification must precisely

match the identification of a flight plan currently residing in main memory. Otherwise, the following error message is returned:

cofie FLID NOT STORED

If a field 02 amendment has been applied, no "PR" messages will be accepted for this flight until all aircraft ID Update messages are acknowledged or have been printed on the associated FSP. When a "PR" message is entered during this period, the following message is returned:

REJECT - AID UPDATES PENDING

If the entered flight identification matches more than one active flight plan in main memory, the following error message is returned:

cofie FLID DUPLICATION

In addition to the preceding error message, a list of all duplicated active flights is returned. The list tabulates, for all duplicated active flights, the Computer Identification Numbers and departure points.

The referent flight plan must be active; otherwise, the following rejection message is returned:

REJECT cofie - FLIGHT NOT ACTIVE

NOTE: Apparently illegal duplicate aircraft identifications on a round-robin flight may exist in storage resulting from a Progress Report message. This condition can exist only during the brief interval required for an adjacent facility to receive and respond to an interfacility message.

If a flight identification is entered for an aircraft in Flight Plan Aided Tracking (FLAT) mode, and the track is in association with the flight plan, and the flight plan extrapolation status is other than HOLD, then the following rejection message will be returned:

REJECT - AC IN FLAT MODE

If Field 02 references a flight which is in Interfacility Point Out status, the following rejection message is returned:

REJECT - AC IN INTERCTR POINTOUT

If the referent flight plan is a tentative flight plan, the following rejection message is returned:

REJECT - (contents of field 02) TENTATIVE FP STORAGE

4.11.4.2 Field 18

If a fix element is entered as part of field 18, the entered element must be a fix or an adapted substitute identity for a fix, on the converted route at or beyond the reference fix. Otherwise, the following error message is returned:

cofie INVALID FIX

If the fix element entered is a loop fix on a Type 2 coded route loop, the following error message is returned:

cofie INVALID FIX

If the fix entered is an ambiguous fix, i.e., the fix exists more than once in the route of flight, the following error message is returned:

cofie AMBIGUOUS FIX - USE STRIP NO.

If a strip number is entered, it must be currently assigned for the referent flight. Otherwise, the following error message is returned:

cofie INVALID STRIP NUMBER

If the strip number entered references a loop fix on a Type 2 coded route loop, the following error message is returned:

cofie INVALID STRIP NUMBER

If the extrapolation status is HOLD or DELAY, the entered fix must not be before the Hold or Delay fix. Otherwise, the following error message is returned:

cofie INVALID FIX - HOLD/DELAY IN PROGRESS

If a time is entered for a fix with two CTAs (as in a Type 2 coded route), the Progress Report is considered to be a progress report on the later of the two CTAs. If a time is entered, it must be less than or equal to Next Day Time Interval (NDTI) minutes in the past with reference to present clock time. Otherwise, the following error message is returned:

cofie INVALID TIME

If a time is entered, it must be less than or equal to five minutes in the future with reference to present clock time. Otherwise, an error message is generated containing the following error data:

cofie INVALID TIME

If the loop entry/exit fix for a Type 2 coded route or strip number referencing this fix is entered, the fix is considered to be the loop exit fix and time refers to the second CTA for the fix.

4.11.5 Eligibility

To prevent the possibility of indiscriminate entry of amendment data, eligibility restrictions may be imposed once the flight plan has been uniquely identified in main memory.

When the aircraft is being tracked and the input source is a D-position or A-position, a sector is not eligible to enter a Progress Report unless it has track control. If the sector does not have track control and "/OK" is not input with the message, the following error message is returned:

02 AID cofie VERIFY ELIGIBILITY

The source may then override the eligibility rules by entering "/OK."

When the aircraft is not being tracked, and the input source is a D-position or A-position, Sector FDEP Eligibility Rules (SFER) apply if they are turned on (indicated in adaptation). If the sector is not eligible to enter a Progress Report, and "/OK" is not input with the message, the following error message is returned:

02 AID cofie VERIFY ELIGIBILITY

The source may then override the eligibility rules by entering "/OK."

When the aircraft is being tracked, and it is in Crosstell status, amendments to its flight plan database are not allowed. An attempt to enter a progress report for a tracked flight which is in Crosstell status will be rejected and the following rejection message will be returned:

REJECT - TRACK IN CROSSTELL STATUS

After a Transfer Accept (TA) message is received indicating that track control for a flight has been transferred to an adjacent center, Progress Reports are not allowed. The following rejection message will be returned:

REJECT - NOT YOUR CONTROL

After a Transfer Accept (TA) message is received indicating that track control for a flight has been transferred to an adjacent ARTS facility, Progress Reports are not eligible unless the logic check override (/OK) is entered; otherwise, the following error message will be returned:

02 AID Cofie - VERIFY ELIGIBILITY

When the flight is in Host Non-Host (HNH) handoff status (i.e., the condition of track handoff between a Host ARTS and a Non-Host center through the Host center) amendments to its flight plan database are not allowed. An attempt to enter a Progress Report for a flight in HNH handoff status will be rejected and the following rejection message will be returned:

REJECT - FLIGHT IN HNH HANDOFF STATUS

When a flight is under Inbound HNH ARTS status, a logic check override (/OK) will be required when a PR message is entered; otherwise the following error message will be returned:

02 AID cofie VERIFY ELIGIBILITY

4.11.5.1 Current Amendment Activity

A Progress Report message on a flight plan awaiting correction of a previously entered Amendment message as a result of a route readout response or flight plan error is rejected if entered from a position different from the position that entered the message in error. The following rejection message will be returned:

REJECT - CORRECTION PENDING AT source

"Source" identifies the input source that originated the first Amendment message. The identification of the source is consistent with the format of the contents of the Output Routing Field as contained in General Information messages.

4.11.6 Processing

4.11.6.1 Fix Times

The entered time or present clock time if no time is entered, replaces the CTA for the converted fix specified in the Progress Report message. The CTAs for all converted fixes succeeding those entered for the referent flight plan are recalculated in relation to the new CTA for the fix entered in the Progress Report.

4.11.6.2 Effect of a Progress Report (PR) on a Stored Hold

If the extrapolation status of the referent flight plan is HOLD, and the fix entered in the PR message is the hold fix, the time entered in the PR message or the present clock time (if no time is entered) is considered the Entered Hold Departure Time and the hold is terminated at that time.

If the hold is terminated in this manner, CTAs for all converted fixes beginning with the entered hold fix are recalculated relative to the Entered Hold Departure Time. If the Entered Hold Departure Time is later than present clock time, extrapolation status is changed from Hold when present time is equal to the Entered Hold Departure Time.

If the extrapolation status of the referent flight plan is Hold, and the fix entered in the PR message is a fix beyond the hold fix, the time entered in the PR message or the present clock time (if no time is entered) becomes the new CTA for the fix entered. The hold is terminated and CTAs for fixes succeeding the entered fix are recalculated relative to the new CTA for the entered fix.

If the extrapolation status of the referent flight plan is not Hold and the fix entered in the PR message is a fix for which a hold in the future had been entered, the time entered or the present clock time (if no time is entered) becomes the new CTA for the fix entered. The CTAs for converted fixes succeeding the entered fix are recalculated relative to the new CTA for the entered fix and the previously entered hold for that fix is cancelled. Any delay previously stored for the hold fix is reinstated.

4.11.6.3 Effect of a Progress Report on a Delay

A progress report has no effect on a filed delay.

4.11.7 Resultant Outputs

The computer responds to a Progress Report message with an acceptance, error, or rejection message returned to the input source.

4.12 REPORTED ALTITUDE (QR)

This action is used to enter a Reported Altitude.

4.12.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 (60) (54) 02

b. Field Contents

01 Message Type - QR
02 Flight Identification
54 Reported Altitude
60 Logic Check Override (/OK)

c. Examples

QR DAL154
QR 110 076/OK
QR 210 (TBE)

d. Error Indicators

ALT FORMAT
FLID FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input only)

4.12.2 Logic

a. If no reported altitude field is entered and no assigned altitude is present in the referenced flight plan or the assigned altitude is either “OTP,” “VFR,” “OTP/(d)dd” or “VFR/(d)dd,” the message is rejected.

b. If Field 02 references a flight which is in Interfacility Point Out status, the following rejection message is returned:

AC IN INTERCTR POINTOUT

c. Error Indicators

AC IN INTERCTR POINTOUT
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position input)
NO ALTITUDE
NO TRACK
NOT YOUR CONTROL
PVD NOT CONFIGURED (D-position input)
SECTOR dd HAS CONTROL

4.12.3 Processing

When a reported altitude field of zero (000) is entered, it will be interpreted as “no controller reported altitude.”

When no reported altitude field is entered, the assigned altitude will be used to determine the reported altitude to display in the track data block. The component of the assigned altitude to be used as the reported altitude will be determined as follows:

a. If the assigned altitude is of the format “ddd,” it (“ddd”) will be used as the reported altitude.

b. If the assigned altitude is of the format “dddBddd,” the first “ddd” of the blocked altitude will be used as the reported altitude.

c. If the assigned altitude has the format altitude/fix altitude, present flight plan position (Free Tracks) or present track position (Flat tracks) will determine whether the first or second altitude will be used.

1. If the flight has not reached the specified fix or if it has been assigned tentative flight plan storage only, the first altitude will be used for the reported altitude.

2. If the flight is at or past the specified fix, the second altitude will be used for the reported altitude.

d. If the assigned altitude is of the format "ABV/ddd," the "ddd" will be used as the reported altitude.

4.12.4 Outputs

The Report Altitude field in the aircraft's data block will be updated in accordance with the Reported Altitude entered or determined.

4.13 REQUEST FLIGHT PLAN TRANSFER (RF)

The Request Flight Plan Transfer (RF) message is used to cause the transmission of flight plan data to an ARTS facility or an adjacent non-U.S. automated facility, regardless of the scheduled time for transmission.

4.13.1 Message Content and Sources

SOURCE	FIELDS
D-position	01 02 13
A-position	01 02 13

4.13.2 Acceptance Checking

The RF message contains the message type designator, flight identification, and either an ARTS facility or adjacent non-U.S. automated facility identifier. If the message originates from an ARTS III facility, it will include the source identification field (00).

4.13.3 Format

4.13.3.1 Field 02

The format checks for flight identification (field 02) are the same as for field 02 of an Amendment Message (AM).

4.13.3.2 Field 13

The facility identifier must consist of one or three letter(s) or the following reject message is returned:

REJECT - cofie FORMAT

4.13.4 Logic

4.13.4.1 Field 02

Logic checks are only performed for the first eligible penetration of an ARTS III facility.

When the aircraft is being tracked and is in Crosstell status, transfer messages are not allowed. An attempt to enter an "RF" message for a tracked flight which is in Crosstell status will be rejected and the following rejection message will be returned:

REJECT - TRACK IN CROSSTELL STATUS

If the referent flight plan is a tentative flight plan, the following rejection message is returned:

REJECT - (contents of field 02) TENTATIVE FP STORAGE

If the referent flight plan is a simulated training flight plan, the following rejection message is returned:

REJECT - FLIGHT NOT ELIGIBLE

If an ARTS III facility is inhibited from receiving active VFR flight plan information, and an attempt is made to enter an RF message to cause the transmission of flight plans that contain VFR or VFR/(d)dd in field 08, the following message will be returned:

REJECT - VFR FLIGHTS INHIBITED

When the flight is in Host Non-Host (HNH) handoff status (i.e., the condition of track handoff between a Host ARTS and a non-Host center through the Host center) transfer messages (NAS to ARTS) are not allowed. An attempt to enter an RF message for a flight in HNH handoff status will be rejected and the following rejection message will be returned:

REJECT - FLIGHT IN HNH HANDOFF STATUS

When a flight is under "Inbound H NI-I ARTS status," a logic check override (/OK) will be required when an RF message is entered; otherwise, the following error message will be returned:

02 AID cofie VERIFY ELIGIBILITY

4.13.4.2 Field 13

The ARTS facility or adjacent non-U.S. automated facility identifier entered must match an adapted ARTS or non-U.S. automated facility identifier, respectively, or the following rejection message is returned:

REJECT - cofie NOT ADAPTED

For an ARTS flight plan transfer, if the flight plan is proposed, the facility identifier (field 13) must be for the ARTS facility from which the flight is to depart. If the flight plan is active, the facility identifier must be for an ARTS III facility (other than the departure ARTS) on the route of flight at or beyond the present position fix. If the ARTS III facility is adapted as requiring a beacon code, the flight plan must specify code capability. Otherwise, the following rejection message is returned:

REJECT - INVALID ARTS

4.13.5 Source Eligibility

If the referent flight plan previously had an amendment applied, certain restrictions shall be imposed to determine if a correction to the database or route readout response is pending. If any source, other than the one for which a correction or route readout response is pending, enters an RF message for this flight plan while the error remains outstanding, the following rejection message is returned:

REJECT - CORRECTION PENDING AT source

"Source" identifies the input source that entered the original amendment message. If the referent flight has an indefinite hold stored for a fix which precedes the coordination fix for the referent field 13 facility, the following rejection message is returned:

REJECT - INDEFINITE HOLD STORED

4.13.6 Processing

The RF message is format and logic checked as specified in acceptance checking. An acceptable RF message results in an accept response being returned to the source and the following processing results:

When the flight route has multiple penetrations of the ARTS III facility, the transmission of flight data is initiated only for the first eligible ARTS III facility penetration.

If the specified flight plan is transferred to ARTS III, it will be removed from excess ARTS flight plan storage (if stored there) and placed in the database maintained for ARTS III. If flight plan capacity has been reached for the specified ARTS III facility and an RF is entered to send to that ARTS, a UTM is generated at an adapted KVDT.

4.13.7 Results

If the RF message is in error, an error or rejection message is returned to the entering device. An acceptable RF message results in the procedures specified in processing. The content of the flight plan message reflects the status of the flight plan just prior to transmission.

4.14 REMOVE STRIP (RS or QX)

The purpose of the Remove Strip message is to remove all flight data for an entered or tentative flight plan and the associated track, if any, from the system.

4.14.1 Format

a. Fields

DEVICE	FIELDS
A-position	01 02* (RS input)
R-position or D-position	01 (60) 64 02 (QX input)

*Indicates verification possibility

b. Field Contents

00 Source Identification
01 Message Type - QX (R-position or D-position input)
02 Flight Identification
60 Logic Check Override (/OK)
64 Action Type (FP)

c. Examples

QX FP NW72
RS 210/OK
QX FP (TBE)

d. Error Indicators

1. RS Message Input

cofie FLID FORMAT
REJECT - MESSAGE TOO LONG REJECT - MESSAGE TOO SHORT

2. QX Message Input

FLID FORMAT
ILLEGAL FLIGHT ID
INVALID ACTION TYPE
NO TB FLIGHT ID CAPTURE (R-position input)

4.14.2 Logic

a. (Card Image Dataset input) If the flight identification is not that of a simulated flight, the message will be rejected

b. (R-position, D-position input) If all format and logic checks pass, a confirmation message will be outputted requesting the controller to confirm the RS/QX message. If the single character "Y" is entered, the RS/QX message is accepted. If any input is entered other than the single character "Y," an explicit cancellation, or an implicit cancellation, the RS/QX message is cancelled and a rejection message is outputted.

c. If field 02 references a flight which is in Interfacility Point Out status, and the message entry source is not an adjacent NAS Center, the following rejection message is returned:

AC IN INTERCTR POINTOUT

d. Error Indicators

1. RS Input

02 AID cofie VERIFY ELIGIBILITY
AC IN INTERCTR POINTOUT
cofie FLID DUPLICATION
cofie FLID NOT STORED
REJECT - AID UPDATES PENDING
REJECT - CORRECTION PENDING - source
REJECT - TRNG/LIVE INCOMPATIBLE
REJECT - NOT YOUR CONTROL
REJECT - TRACK IN CROSSTELL STATUS
REJECT - FLIGHT IN HNH HANDOFF STATUS
REJECT - NOT CONFIRMED

2. QX Input

AC IN INTERCTR POINTOUT
AID UPDATES PENDING
CORRECTION PENDING - source
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position input)
TRNG/LIVE INCOMPATIBLE
NOT YOUR CONTROL
PVD NOT CONFIGURED (D-position input)
SECTOR dd HAS CONTROL
TRACK IN CROSSTELL STATUS
FLIGHT IN HNH HANDOFF
NOT CONFIRMED

3. Confirmation Indicator

   CONFIRM BY ENTERING Y

4.14.3 Processing

a. The storage for an entered or tentative flight plan will become available for other flight plans.

b. If a track is paired with the flight plan, it will be dropped.

c. If the flight plan has an assigned discrete beacon code from an adapted code subset, the beacon code is returned to the list of available codes.

d. If the aircraft has a beacon code assigned, the code will be removed from the affected Beacon Code Selection List(s), if possible.

e. If the assigned code is discrete and is present in the automatic track initiation list, it will be deleted from that list.

f. If the aircraft is a member of a Group Suppression group, the flight plan will be removed from the group. If this action reduces the group to less than two numbers, the group will be deleted.

4.14.4 Outputs

a. A Remove Strips Update message is routed to all sectors and FDEP-equipped facilities currently posting the flight, starting with the sector containing the flight plan present position, and excluding the source that entered this message.

b. The alphanumeric data associated with the aircraft will be removed from all Situation Displays. This includes data block or list displays. All halos associated with the aircraft will also be removed from the Situation Displays.

c. If the action is taken after the flight plan has been passed to other NAS and/or ARTS III facilities, send Remove Strip messages to the affected facilities.

d. If the aircraft has an assigned beacon code, the affected Beacon Code Selection List(s) will be updated.

e. If the aircraft is a member of a Group Suppression group, and the remove strip action does not reduce the group to less than two aircraft, a Group Update message will be routed to the D-CRD view associated with each sector at which the group is suppressed. If the group is reduced to less than two aircraft, the group entry will be removed from all Group Suppression lists.

4.15 STEREO FLIGHT PLAN (SP)

A Stereo Flight Plan message (SP) is used to enter an abbreviated flight plan. Prior to acceptance, the remainder of data required to complete the flight plan message is obtained from pre-stored data identified by a stereo tag.

4.15.1 Message Content and Sources

Following are the legal sources and fields for an SP message:

SOURCE	FIELDS
D-position or A-position	01 02 (03 05)07 (08 or 09) 10 (11)

4.15.2 Acceptance Checking

An SP message contains an aircraft identification, a coordination time, a stereo tag, and may contain aircraft data and speed, altitude, and remarks.

4.15.3 Format

4.15.3.1 Aircraft Identification (Field 02)

The format check for aircraft identification (field 02), is the same as that specified for the Flight Plan message.

4.15.3.2 Aircraft Data (Field 03)

The format check for aircraft data (field 03) is the same as that specified for the Flight Plan message.

4.15.3.3 Aircraft Speed (Field 05)

The format check for aircraft speed (field 05) is the same as that specified for the Flight Plan message.

4.15.3.4 Coordination Time (Field 07)

The format check for coordination time (field 97) is the same as that specified for the Flight Plan message.

4.15.3.5 Altitude (Field 08 or 09)

The format check for altitude (field 08 or 09) is the same as that specified for the Flight Plan message. The format check for requested altitude (field 09) is performed if the coordination time (field 07) contains a P-time. Otherwise, the format check for assigned altitude (field 08) is performed.

4.15.3.6 Route (Field 10) (Stereo Tag)

Route (field 10) must contain two to eight alphanumerics, and must start with a letter:

La(a) (a) (a) (a) (a) (a)

Also, the letters "OTP" cannot be entered as the stereo tag. Otherwise, the following error message is returned:

10 RTE cofie FORMAT

If field 10 is missing, the following rejection message is returned:

REJECT - MESSAGE TOO SHORT

4.15.3.7 Remarks (Field 11)

The format check for Remarks (field 11) is the same as that specified for the Flight Plan message. However, stereo adaptation limits intercenter remarks to 121 characters (including the clear weather symbol (O)) and intracenter remarks to 21 characters (including the overcast symbol ⊕).

4.15.4 Logic

Logic checking is first performed only on the stereo tag field 10 data. The stereo tag entered must be an adapted stereo tag. Otherwise, the following error message is returned:

10 RTE cofie STEREO NOT STORED

The entry of an active stereo flight plan with an AID that matches the AID of an active flight plan in Interfacility Point Out Status will be rejected with the following message:

REJECT - AC IN INTERCTR POINTOUT

4.15.5 Processing

The following data are adapted for each stereo tag:

a. Field 03 - Aircraft data

b. Field 05 - Aircraft speed

c. Field 06 - Coordination fix

d. Field 08 or 09 - Altitude

e. Field 10 - Route data

f. Field 11 - Remarks (optional)

The altitude field is interpreted as either assigned (field 08) or requested (field 09) altitude, depending upon the time prefix entered in field 07 of the SP message.

When a Stereo Flight plan message is entered with a valid stereo tag, adapted stereo data fields for the unique tag are merged with the SP data to form a flight plan message. This flight plan message is then processed as an initial FP message, with assumed entry from the same source as the SP message. When optional fields are entered in the stereo flight plan message, they replace the equivalent stored fields for this flight plan.

4.15.6 Resultant Outputs

If the SP message is determined to be acceptable, no response message for the SP message is generated.

4.16 TRACK REROUTE (QU)

This message is used to modify the flight plan route of a specified tracked flight. The first route element of the amended flight plan will be the current track position. This will be followed by entered trackball positions or fix elements which may or may not return to the original route of flight.

4.16.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 (60) (65) (65) (65)(65)* (68)**
	(68) …etc. (70) 02

*Only three trackball entries allowed if trackball is used for flight identification.

**Field 65 and 68 entries can be intermixed. At least one Field 65 or 68 must be entered.

b. Field contents

01 Message Type (QU)
02 Flight Identification
60 Logic Check Override (/OK)
65 Trackball Coordinates (R-position input)
68 Fix
70 Destination Indicator (⇩) or (*)

c. Error Indicators

FLID FORMAT
FLIGHT NOT ACTIVE
(cofie) FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input)

4.16.2 Logic

a. The sequence of trackball coordinates and route elements define the amended route, which must return to the remainder of the converted or filed route, unless a field 70 is entered following the last field 65 or field 68 entry and prior to field 02.

b. When the amended route returns to the converted route, it must return at a point at least as far along the route as the reference fix.

c. If the point of return to the original route is defined by a trackball, it must be within the adapted miles of the converted route.

d. If the REROUTE returns to the converted route of flight, the last route element or trackball position must define a point on the converted route. If this condition is not satisfied, a program generated ROUTE DISPLAY will be addressed to the R-position for the entering sector in addition to the reject response sent to the CRD view at the entering position. If this condition is not satisfied when REROUTE is entered while track position is on a loop of a type 2 coded route, the ROUTE DISPLAY is not program generated and the reject response sent to the CRD at the entering sector is the only result.

e. If a field 70 (i.e., (⇩) or (*)) is entered following the last entered fix or trackball, it will indicate a new flight destination. A (*) will indicate that PARs or PDARs should not be applied.

f. (D-position input) The Track Reroute action is rejected if it is entered when an operational level of either FDP or RD1 is selected by the Surveillance Tie-Off message.

g. If field 68 is entered for a reroute that returns to the converted route, it must be a fix name that is in fix adaptation, a latitude/longitude or an FRD (the fix name portion of which must be adapted).

NOTE: When field 68 is entered for a reroute that exits the center and returns to the filed route, it should be a fix name, a latitude/longitude, or an FRD. Field 68 should not contain route names which could lead to route format or logic errors.

h. The Track Reroute Action will be rejected if input at a D-position with no R-position configured at the entering sector.

i. If field 02 references a flight which is in Interfacility Point Out status, the following rejection message is returned:

AC IN INTERCTR POINTOUT

j. If the REROUTE returns to the filed route past the last converted fix and the flight exits the center, the last or only fix or implied fix (trackball entry) entered must match an element on the filed route or the following error message is returned:

(last element) CANNOT MERGE

k. Error Indicators

AC IN INTERCTR POINTOUT
AID UPDATES PENDING
(last element) CANNOT MERGE
CORRECTION PENDING - source
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF
INVALID FIX
NO TRACK
NOT YOUR CONTROL
PVD NOT CONFIGURED (D-position input)
SECTOR dd HAS CONTROL
TENTATIVE FP STORAGE
TOO MANY RTE ELEMENTS
TRACK IN CROSSTELL STATUS
FLIGHT IN HNH HANDOFF

4.16.3 Processing

When processing a Reroute message that returns to the filed route past the last converted fix when the flight exits the center:

a. Track position and trackball entries are replaced as follows:

1. If the Track/Trackball position is within Fix Distance Tolerance (FIXD) of an adapted fix, it is replaced with that fix. When two or more adapted fixes are within FIXD of the Track/Trackball location, the closest fix will be used.

2. If the Track/Trackball position is not within FIXD miles of any adapted fix, it is replaced with an FRD off the focal point fix for the FPA in which the point is located. When not replaced with an FRD, a latitude/longitude will replace the trackball position. For oceanic FPAs, a latitude/longitude will be generated in place of the FRD.

NOTE: If the entered trackball or track position is close to an FPA or Center boundary, the generated FRD or latitude/longitude may result in posting that entered fix (position) in the adjacent FPA/Center.

b. Determine the beginning of the new route as follows:

The Track position will become the coordination fix (field 06) and the current clock time will become the coordination time (field 07) of the amendment.

c. Construct and process an amended flight plan:

The entered fixes replace the filed field 10 between the filed departure point, followed by a tailoring symbol (./.), then the track position (field 06) and the filed field 10 data after the merge element match. When the merge element match is the filed destination fix, the merge element is the last element of the amended flight plan. The entered merge fix completely replaces the matching filed fix element and any filed prefix and/or suffix will be deleted. When there is more than one element match past the last converted fix on the filed route of flight, it will be assumed that the first encounter applies. All field 10 route data after the entered merge element remain unchanged except that plus (+) signs preceding fixes are removed.

The amended flight plan as constructed in this paragraph and paragraph b. above is processed for field 06, 07, and 10 amendments. Route conversion and calculation will begin at the new field 06 based on the new field 07.

When processing a Reroute message that does not return to the filed route past the last converted fix when the flight exits the center, i.e., when paragraphs a. through c. above do **NOT** apply.

d. Track position and trackball entries are replaced as follows:

1. If the Track/Trackball position is within FIXD of an adapted fix, it is replaced with that fix. When two or more adapted fixes are within FIXD of the Track/Trackball location, the closest fix will be used.

2. If the Track/Trackball position is not within FIXD miles of any adapted fix, it is replaced with an FRD off the focal point fix for the FPA in which the point is located. For oceanic FPAs, a latitude/longitude will be generated in place of the FRD.

NOTE: If the entered trackball or track position is close to an FPA or Center boundary, the generated FRD or latitude/longitude may result in posting that entered fix (position) in the adjacent FPA/Center.

e. Determine the beginning of the new route as follows:

The Track position will become the coordination fix (field 06) and the current clock time will become the coordination time (field 07) of the amendment. The track position fix will be added to field 10 of the amendment conforming to the rules of field 06, 07, and 10 amendments.

f. Determine point of return to current route of flight.

When a new destination is not specified in the entered message, the last entered field (65 or 68) must designate a point of return to the current route. The point of return must be on the

current converted route and must not precede the reference fix. When a field 68 designates the point of return, it must be a fix in the current converted route. When a field 65 is used to designate the point of return to the current route, it must be on the current converted route of flight, or be projectable to the current converted route. The point of return to the current converted route must be merged into the current field 10 alphanumerics. When the point of return is on an adapted route, additional fixes from the converted route, (if any remain) will be added to the current field 10 alphanumerics until a merge element is located. From that fix on, the current field 10 alphanumerics, (if any) will be used, except that plus (+) signs preceding fixes are removed from the stored route.

When the reroute returns to the current route of flight and the point of return is a route element appearing more than once following the reference fix on the current route, it will be assumed that the first encounter applies.

If the reroute takes place on a type 2 coded route with a reentry fix and if the merge element is the loop entry fix, the reentry count will be deleted from the filed route.

g. Process an amended flight plan as follows:

Construct an amended flight plan starting with the point specified in paragraph b. above, followed by entered Trackball or fix elements and ending with new destination, or merge with the current flight plan as specified in paragraph c. above.

4.16.4 Resultant Outputs

a. A program-generated route display will be sent to the R-position console at the entering sector. The ROUTE DISPLAY will show the converted route, beginning at the present position through the last converted fix, unless the limit of the Situation Display geographical viewing area of the entering sector is encountered first. If the original route for the referent flight plan is presently being displayed, the new route display will replace the one being displayed. When the maximum allowable number of route displays are being displayed on the R-position at the entering sector, the one that has been displayed the longest will be replaced.

b. Outputs will be generated in conformance with field 06, 07, and 10 amendments.

4.17 REQUEST ROUTE CONVERSION (RM)

A Request Route Conversion message (RM) is used to force route conversion for a flight plan.

4.17.1 Message Content and Sources

a. The following defines the legal sources and fields of the Request Route Conversion message:

SOURCE	FIELDS	
D or A-position	01	02*

*Indicates verification possibility

b. Field Contents

01 Message type (RM)
02 Flight Identification

c. Examples

RM TWA123

RM 780
RM 1234

4.17.2 Acceptance Checking

The Request Route Conversion message contains a message type designator and a flight identification field. The message is checked for field format and field logic.

4.17.3 Format

4.17.3.1 Flight Identification (Field 02)

When field 02 contains an aircraft identification and, optionally, a departure point, the field length must consist of from two to twenty characters in the following format:

La(a) (a) (a) (a) (a) (/aa(a) (a) (a) (a) (a) (a) (a) (a) (a))

The first element, aircraft identification, must be two to seven alphanumerics in length, and the first character must be a letter.

The second element, departure point, when present, must be separated from the first element by the element separator (/). The departure point must be two to twelve characters in length and in the format specified for fix elements of field 10.

When intended as a Computer Identification Number (CID), field 02 must be two digits followed by a digit or letter. Thus:

dda

where “a” must not equal “I or “O.”

When intended as a discrete beacon code, field 02 must consist of four digits:

dddd

where “d” must not be greater than seven.

NOTE: If a nondiscrete beacon code, (one in which the last two digits of dddd are zero) is entered, the following is returned:

REJECT - ILLEGAL FLIGHT ID

If any of the preceding requirements is not met, the following error message is returned:

02 AID cofie FLID FORMAT

4.17.4 Logic

4.17.4.1 Flight Identification (Field 02)

If a CID is entered as flight identification, it must currently be assigned to a flight plan resident in main memory. Otherwise, the following message is returned:

02 AID cofie FLID NOT STORED

If an Aircraft Identification Number is entered, this identification must precisely match the identification of a flight plan currently residing in core. If the optional element, departure point, is included within flight identification, it must be included in the flight identification match, i.e., it must match the first route element of field 10 for the stored flight plan.

If the entered flight identification does not match the flight identification of any resident flight plan in main memory, the following error message is returned:

02 AID cofie FLID NOT STORED

If a discrete beacon code is entered as flight identification, it must have the status of an assigned beacon code. Otherwise, the following message is returned:

02 AID cofie FLID NOT STORED

If a field 02 amendment has been applied, no “RM” messages will be accepted for this flight until all aircraft ID update messages are acknowledged or have been printed on the associated FSP. When an RM message is entered during this period, the following message is returned:

REJECT - AID UPDATES PENDING

If the entered flight identification matches more than one flight plan in main memory, the following error message is returned:

02 AID cofie FLID DUPLICATION

In addition to the preceding error message, a list of all duplicated flights is returned. The list tabulates the CIDs and departure points for all duplicated flights. The proposed departure times is included for all proposed flights.

Once the flight plan has been identified in main memory as tentative, the following error message is returned:

REJECT - (contents of field 02) TENTATIVE FP STORAGE

When a track has been initiated, but track control has not been established, changes to the flight plan database are not allowed. The following rejection message will be returned:

REJECT - NOT YOUR CONTROL

When the aircraft is being tracked, and it is in inter or intrafacility transfer status, changes to its flight plan database are not allowed. An attempt to enter an RM message for a tracked flight which is in transfer status will be rejected and the following rejection message will be returned:

REJECT - TRACK IN TRANSFER STATUS

When field 02 references a flight which is in Interfacility Point Out status, an RM message entered for the flight is rejected with the following response:

REJECT - AC IN INTERCTR POINTOUT

After a Transfer Accept (TA) message is received indicating that track control for a flight has been transferred to an adjacent center, changes to its flight plan database are not allowed. The following rejection message will be returned:

REJECT - NOT YOUR CONTROL

After a Transfer Accept (TA) message is received indicating that track control for a flight has been transferred to an adjacent ARTS facility, RM messages are not eligible unless the logic check override indicator (/OK) is entered; otherwise, the following error message will be returned:

02 AID cofie VERIFY ELIGIBILITY

When the flight is in Host Non-Host (HNH) handoff status (i.e., the condition of track handoff between a Host ARTS and a non-Host center through the Host center), changes to its flight plan database are not allowed. An attempt to enter an PM message for a flight in HNH handoff status will be rejected and the following rejection message will be returned:

REJECT - FLIGHT IN HNH HANDOFF STATUS

When a flight is under “Inbound HNH ARTS Status,” a logic check override (/OK) will be required to change the flight plan database; otherwise, the following error message will be returned:

02 AID cofie VERIFY ELIGIBILITY

4.17.5 Source Eligibility

Certain other restrictions called eligibility rules may be imposed. These restrictions are applied on an individual flight plan basis. Once the flight plan has been identified, the checks are applied to determine if a correction to the database or response to a route readout request is pending. If any source other than the one for which a correction or response to a route readout request is pending enters a Request Route Conversion message for this flight plan, the following rejection message is returned:

REJECT - CORRECTION PENDING AT source

"Source" identifies the input source that originated the first message. The identification of the input source is consistent with the format of the contents of the Output Routing field as contained in General Information messages.

When the aircraft is not being tracked and the input source is a D-position or A-position console, Sector FDEP Eligibility Rules (SFER) apply if they are turned on (indicated in adaptation). If the sector is not eligible to request route conversion for the specified flight plan, and /OK is not input with the message, the following error message is returned:

02 AID cofie VERIFY ELIGIBILITY

The source may then override the eligibility rules by entering /OK.

When the aircraft is being tracked and the input source is a D-position, a sector is not eligible to request route conversion unless it has track control. If the sector does not have track control and /OK is not input with the message, the following error message is returned:

02 AID cofie VERIFY ELIGIBILITY

The source may then override the eligibility rules by entering /OK. When the input source is an FDEP, Sector FDEP Eligibility Rules (SFER) apply and the FDEP is not eligible to request route conversion to the specified flight plan. The following rejection message is returned:

REJECT - NOT YOUR CONTROL

4.17.5.1 Route

When an RM message is entered against an active flight and the reference fix is beyond the outbound boundary crossing point, the following rejection message will be returned:

REJECT - FLT NOT ELIGIBLE

Any attempt to enter an RM message against an active flight plan when the reference fix is within a PAR will result in the following message being returned:

REJECT - INVALID RM - ON PAR

Any attempt to enter an RM message against an active flight plan when the reference fix is within a PDAR will result in the following message being returned:

REJECT - INVALID RM - ON PDAR

4.17.6 Processing

4.17.6.1 Proposed Flight Plan

The acceptance of a Request Route Conversion message causes the specified flight plan's route to be reconverted, applying a PDR, PDAR, or PAR, if applicable. If a strip for the departure point has been printed and one of the following results:

a. the PDR, PDAR or PAR applied is different from the one used for the previous conversion of the proposed flight plan, or

b. a PDR, PDAR or PAR is applied and none was used for the previous conversion of the proposed flight plan, or

c. neither a PDR, PDAR nor PAR is applied and one was used for the previous conversion of the proposed flight plan,

new departure strips are printed and Remove Strip messages are sent to the sectors bypassed, if any.

For a PAR change to cause this processing to occur, the first postable fix for the referent flight must be an FPA that contains the route alteration for the PAR. This logic is applicable to newly applied PARs (paragraphs a. or c. above).

4.17.6.2 Active Flight Plan

The acceptance of a Request Route Conversion message causes the specified flight plan's route to be reconverted, applying a PAR if applicable. The application of a PDR or DP remains unchanged.

If nonflow control strips have been printed and one of the following conditions result:

a. a PAR that is different from the one used for the previous conversion of the flight plan has been applied, or

b. a PAR has been applied when none was used for the previous conversion of the flight plan, or

c. a PAR is not applied and one was used for the previous conversion of the flight plan,

new strips are printed and Remove Strip messages are sent to any sectors bypassed.

If the present position of the flight is not yet a Hold fix, any stored Hold in the previous route is not retained.

4.17.7 Resultant Outputs

4.17.7.1 Flight Strip Printer (FSP)

If an RM message changes the content of flight strips or deletes the requirement for strips at a sector, new strips are printed and Remove Strip messages are sent to the sector bypassed. Revision strips printed as a result of an RM message will have the revision number incremented.

NOTE: The use of the term "sector" includes not only a sector in an ARTCC, but also FDEP positions (FDEP-equipped approach controls and towers).

4.17.7.2 Computer Response Messages

If any errors are encountered in the reprocessing of the flight plan, the RM message is rejected and the following message is returned:

REJECT - reason

where "reason" is the appropriate text describing the error condition encountered.

4.17.7.3 Code Selection List

An RM message may cause the flight's beacon code to be inserted or deleted from any associated code selection list.

5.0 TRACK CONTROL MESSAGES

The following Track Control Messages can be found in this section:

5.0 TRACK CONTROL MESSAGES

Track Control Messages are used to control the existence of tracks, type of tracking to be used, and the transfer of track control from one sector to another.

5.1 ACCEPT HANDOFF (QN or QZ)

This message is used to assume control of a single track in the transfer mode addressed to the entering sector from a designated sector, thereby indicating the completion of the transfer of control. If it is done for an aircraft already under the control of the sector (facility) entering the message and the aircraft is in the transfer mode, it will be interpreted to mean the retraction of the transfer of control.

5.1.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	(01)* (60) 02

*Field required if A-position input or QZ input

b. Field Contents

01 Message type QN or QZ
60 Logic Check Override (/OK)
02 Flight Identification

c. Examples

QN DAL139 (D-position input)
N1356 (R-position input, “NONE” message type)
/OK 316 (R-position input, “NONE” message type)

d. Error Indicators

(cofie) FORMAT
FLID FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input)

5.1.2 Logic

a. The designated aircraft must be in handoff status and addressed to the sector entering the Accept Handoff unless a /OK is entered in the message. Otherwise, the input will be interpreted as a Forced Data Block action.

b. If track control has been transferred to another NAS facility and a "/OK" is entered as part of the input action, the message will be rejected.

c. (R-position input) The Accept Handoff action is ignored and no response is given if it is entered when Surveillance Tie-Off is in effect.

d. (D-position input) The Accept Handoff action is rejected if it is entered when Surveillance Tie-Off is in effect.

e. An Accept Handoff action which was intended to retract the handoff of a track to an adjacent NAS center or ARTS III facility will be rejected if entered before the processing of the associated TI message is complete.

f. (D-position input) The sector at which the Accept Handoff action is entered must have an R-position with a Situation Display.

g. If a "/OK" cannot be used to assume control between active and training sectors, the Accept Handoff action will be rejected.

h. If Field 02 references a flight which is in Interfacility Point Out status, the following rejection message is returned:

AC IN INTERCTR POINTOUT

i. Error Indicators

AC IN INTERCTR POINTOUT
CORRECTION PENDING - source
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position INPUT)
LINE DELAY-REENTER MSG
NO TRACK
NOT HANDED TO YOU
PVD NOT CONFIGURED (D-position INPUT)
TRNG/LIVE INCOMPATIBLE

5.1.3 Processing

An Accept Handoff action on an aircraft that is in inbound HNH ARTS status will take the flight out of this status.

5.1.3.1 Message Entry From Receiving Sector

If the Accept Handoff is entered from the receiving sector (the sector addressed in the Initiate Handoff) (as it normally is):

a. The aircraft will no longer be in the transfer mode.

b. The aircraft will be under the control of the sector that entered the Accept Handoff action.

c. If the track class of the aircraft being transferred is BEACON and it has been assigned a beacon code, the code will be added to the Beacon Code Selection List of the entering sector, if it is not already stored there. The code will be removed from the Beacon Code Selection List for the sending sector after the PVD Code Drop Interval (PCDI) unless it had been manually selected or it is applicable to another aircraft.

d. If the aircraft was transferred from an adjacent NAS center or ARTS III facility, the Remote Outputs Function will be notified to inform the sending facility that the receiving center has assumed control and to cease the transmission of track data. The track status for the aircraft will be changed so that the receiving facility will now treat the track in the normal manner.

5.1.3.2 Message Entry From Sending Sector

If the Accept Handoff is entered from the sending sector while the aircraft is still in the transfer mode, it is interpreted to mean a retraction of the transfer of control. The action will result in the following:

a. The aircraft will no longer be in the transfer mode.

b. The aircraft will be under the control of the sector that entered the Accept Handoff action.

c. If the aircraft's track class is BEACON and it has been assigned a beacon code, the code will be removed from the receiving sector's Beacon Code Selection List PCDI minutes after message entry.

d. If the Initiate Handoff was interfacility, the adjacent ARTCC or ARTS III facility, through the Remote Outputs Function, will be notified that the sending center has resumed control and that transmission of track data has ceased.

e. Automatic Handoff Initiation is inhibited for the specified aircraft.

5.1.3.3 Message Entry From Sector Other Than Sending or Receiving Sector (Intrafacility)

a. The sending sector is defined as the sector that had control when the Accept Handoff action was entered. That is, the sending sector is that sector that entered or could have entered a transfer action.

b. The receiving sector is defined as the sector that entered the Accept Handoff action. That is, the sector entering the Accept Handoff supersedes any existing receiving sector, except that any receiving sector as superseded will continue to see the data block for DDDI seconds after the Accept Handoff. The beacon code of the aircraft will be removed from the addressed sector's Beacon Code Selection List PCDI minutes after the Accept Handoff.

c. If the data block was suppressed at the sector addressed in the Initiate Handoff action, this action will cause the data block to become unsuppressed.

5.1.3.4 Message Entry From Sector Other Than Sending or Receiving Sector (Interfacility)

If the Accept Handoff is entered (through the use of a /OK) by a sector other than the controlling sector in the sending center or the addressed sector in the receiving center:

a. The aircraft will no longer be in transfer mode.

b. The aircraft will be under control of the sector that entered the Accept Handoff action.

c. If the aircraft's track class is BEACON the code will be added, if it is not already present, to the entering sector's Beacon Code Selection List. The code will be a candidate for removal, after PVD Code Drop Interval (PCDI), from the Beacon Code Selection List of the sending sector.

d. The adjacent ARTCC or ARTS III facility will be notified, through the Remote Outputs Function, of the assumption of control and that transmission of track data has ceased or should be terminated, as the case may be. Track status will be changed so that the track can be processed in the normal manner.

e. If the data block was suppressed at the addressed sector in the receiving center, this action causes it to become unsuppressed.

5.1.3.5 Message Entry for Aircraft Not in Transfer Status

a. If the Accept Handoff is entered with the logic check override (/OK) for an aircraft not in transfer status, the entering sector (if within the same center or if the track was previously handed to and accepted by an ARTS facility) will gain track control.

b. If the data block was suppressed at the controlling sector, this action will cause the data block to become unsuppressed.

5.1.4 Resultant Outputs

The appropriate code addition/deletion actions will be updated on the affected Beacon Code Selection List(s) and output the following.

5.1.4.1 Message Entry From Receiving Sector

If the Accept Handoff was entered from the receiving sector:

a. The contents of Field E will be replaced by "O-dd" or "OLdd" in the data blocks on both the receiving and sending controllers' Situation Displays. For intrafacility transfers, this will occur upon acceptance of the Accept Handoff action. For interfacility transfers, this will occur at the receiving center upon acceptance of the Accept Handoff action, and at the sending center upon acceptance of the Accept Transfer message.

For intrafacility transfers only, if the interim altitude is being displayed at the receiving sector, it will continue to be displayed there. If it was not being displayed at the receiving sector, it will be as a consequence of the Initiate Handoff (or Point Out) action, and will continue to be displayed after the Accept Handoff action is accepted.

If the receiving sector was previously displaying a data block on the referent flight, the "R" displayed in position Dl will be dropped when track control is established by the receiving sector.

b. The data block and the halo (if one exists) on the sending controller's display will be dropped after the Drop Data Block Interval (DDDI) seconds and the handoff acceptance indication (in Field E) will be deleted from the receiving sector's data block after Attention Blinking Light Interval (ABLI) seconds.

c. If the action involves an aircraft in a Hold List, the assume control indicator will appear in the Hold List on the sending and receiving sector's Situation Display.

d. If the aircraft was transferred from an adjacent NAS center or ARTS III facility, an Accept Transfer (TA) message will be transmitted to the sending facility indicating the acceptance of the transfer.

e. If the flight plan is eligible for CFAF message transmission, parameter CFFS is ON and the flight plan was transferred from an adjacent NAS center, a UZ message will be transmitted to CFAF by the receiving center at completion of handoff if it was not previously transmitted by the receiving center.

f. In the event that multiple flight plans utilizing the same beacon code are stored, the FDB for the subsequent leg of the flight will replace the FDB of the previous leg at the sector(s) displaying the FDB for the previous leg upon handoff acceptance.

5.1.4.2 Message Entry From Sending Sector (Retraction)

If the Accept Handoff is entered from the sending sector:

a. The contents of Field E will be replaced by "O-dd" or "OLdd" in the data block of the sending sector's Situation Display upon acceptance of the Accept Handoff action.

If the logic check override (/OK) was entered with the Accept Handoff action, the contents of Field E will be replace by "K-dd" or "KLdd."

b. In the case of an interfacility or intrafacility transfer, the data block will be immediately removed from the receiving sector's Situation Display unless display eligibility exists for any reason other than a handoff action.

If a data block did exist at the time of the Initiate Transfer action, Field E of all displayed data blocks will revert to displaying any nonhandoff information.

In the case of an interfacility transfer, if an interfacility handoff is retracted which involves a flight that was in InterFacility Point Out status prior to the Initiate Transfer (TI), place that flight back into Interfacility Point Out status. There is one exception to this: if there are no data blocks displayed that were the result of either an interfacility or intrafacility Point Out action, a Request action, or a manual force action at the time the TA message is received, then the track and all its referent data blocks will be deleted.

c. If the aircraft was to have been transferred to an adjacent NAS Center or ARTS III Facility, an Accept Transfer (TA) message will be transmitted to the receiving facility to inform that facility of the retraction of the transfer, and the crosstell of track data will cease.

d. An attention indicator is displayed in the associated track data block to indicate that automatic handoff initiation has been inhibited for this track.

e. If the aircraft is involved in a Conflict Alert at the time of the retract handoff action, the alert will no longer be displayed at the original intended receiving sector if the alert was displayed only because the sector was the intended receiving sector of the handoff.

5.1.4.3 Message Entry From Sector Other Than Sending or Receiving Sector

If the Accept Handoff is entered (through use of a /OK) from a sector other than the sending or receiving sector, the responses are the same as described in par. 5.1.4.2 except for the following:

a. The sending sector is defined as the sector that had control when the Accept Handoff action was entered. That is, the sending sector is that sector that could have entered or did enter a transfer action.

b. The receiving sector is defined as the sector that entered the Accept Handoff action. That is, the sector entering the Accept Handoff supersedes any existing receiving sector, except that any receiving sector as superseded will continue to see the data block for DDDI seconds after the Accept Handoff.

c. If the handoff is intracenter, the letter “K-“ followed by the two-digit number of the receiving sector will be used as an “over” indication in all data blocks for the aircraft.

d. If the handoff is intercenter, the letter “K” followed by the three-character identifier of the receiving center and sector will be used as an “over” indication in all data blocks for the aircraft.

e. If the aircraft is involved in a Conflict Alert at the time of the Accept Handoff action, the alert will no longer be displayed at the original intended receiving sector, if it was only displayed because the sector was the intended receiving sector of the handoff. If the alert was suppressed via the CO message at the new receiving sector, the alert will be unsuppressed and both data blocks will be redisplayed, if not already displayed, with the appropriate blinking status.

5.1.4.4 Message Entry for Aircraft Not in Transfer Status

a. If the track is under control of a sector in this center and the Accept Handoff is entered with the logic check override (/OK), the handoff indicator (K-dd) will appear in the data block on the Situation Display of the sector originally maintaining track control and on the Situation Display of the entering sector. Otherwise, the response is the same as described in pars. 5.1.4.3 a and 5.1.4.3 b.

b. If the track is under control of an ARTS facility because it was handed off from a NAS facility and if the Accept Handoff is entered with the logic check override (/OK), the handoff indicator (KLdd) will appear in the data block on the Situation Display of the entering sector. Also, a TA message will be transmitted to the ARTS III facility that is controlling the track. Otherwise, the response is the same as described in par. 5.1.4.3 a.

c. If the aircraft is involved in a Conflict Alert at the time of the Accept Handoff action, and suppressed via the CO message at the entering sector, the alert will be unsuppressed and both data blocks will be redisplayed, if not already displayed, with the appropriate blinking status.

5.2 COAST TRACK (CT)

This message is used to manually change the mode of tracking to coast. If the aircraft is in the Free Tracking or Flat mode, the action will result in a Free or Flat Coast. If the aircraft is in coast due to the loss of radar returns, this message will maintain it in coast.

5.2.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 (05)(08)(56) 64 (65)(68)(74) 02

b. Field contents

01 Message Type (QT)
05 Speed
08 Assigned Altitude
56 Heading
64 Action Type (CT)
65 Trackball Coordinates (R-position input)
68 Fix (must be preceded by "//")
74 Primary Track Class Indicator
02 Flight Identification

c. Examples

QT CT 026
16 CT 34 S400 N7762B
QT 18 CT 117
QT S250 00 CT N328T
QT CT S100 059
QT 00 S150 P 190 CT 749
QT S150 32 CT //CZI N328T

d. Error Indicators

DUPLICATED ACTION
FLID FORMAT
(cofie) FORMAT
ILLEGAL FLIGHT ID
NC TB FLIGHT ID CAPTURE (R-position input)

5.2.2 Logic

a. The aircraft must have a track which is not in crosstell status.

b. A coast track action may be entered only by the sector which has control of the track. "/OK", if entered in the message, will be ignored.

c. (R-position input) The Coast Track action is ignored and no response is given if it is entered when Surveillance Tie-Off is in effect.

d. (D-position input) The Coast Track action is rejected if it is entered when Surveillance Tie-Off is in effect.

e. Extrapolation status of the flight must not be hold.

f. If the track is positioned outside the area adapted for tracking, the input will be rejected.

g. If a valid action type (CT) is entered and the FLID does not have a track, then all actions entered in the same message will be rejected.

h. If a valid action type (CT) is entered and the aircraft is in a hold, then all actions entered in the same message will be rejected.

i. If a valid action type (CT) is entered and the aircraft is in crosstell status, then all actions entered in the same message will be rejected.

j. If field 68 is entered, it must be a fix that is in fix adaptation, a lat/long, or an FRD (the fix name portion of which must be adapted).

k. If Field 02 references a flight which is in Interfacility Point Out status, the following rejection message is returned:

AC IN INTERCTR POINTOUT

l. Error Indicators

AC IN INTERCTR POINTOUT
AC IN HOLD STATUS
AID UPDATES PENDING
FIX OUTSIDE ADAPTED AREA
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position input)
INVALID ACTION TYPE
INVALID FIX
NO TRACK
NOT YOUR CONTROL
PVD NOT CONFIGURED (D-position input)
SECTOR dd HAS CONTROL
TB OUTSIDE ADAPTED AREA (R-position input)
TRACK IN CROSSTELL STATUS
ZERO SPEED

5.2.3 Processing

a. If the mode request indicator is Free or Flat, the manual request indicator will be changed to Free Coast or Flat Coast. If the operator entered speed and/or heading is available, it will take precedence over the existing track speed and/or heading in extrapolating the track position.

b. A track which has manually been placed in a coast mode (by this action) will remain in a coast mode until:

1. a track action is taken to reinitiate the track

2. a drop track or remove strips action is taken, or

3. the track extrapolates outside the radar sort box grid, in which case the track will be dropped automatically.

c. If field 74 (P) is entered, the track class will be set to primary.

5.2.4 Resultant Outputs

a. The track position symbol will indicate that the track is in a Coast mode.

b. Field E of the aircraft's data block will contain the letters "CST."

c. Any halos associated with this track will be deleted.

5.3 DROP TRACK ONLY (QX)

This message is used to discontinue the tracking of a particular flight and remove all of the tracking data on the flight from the system while maintaining the flight plan data.

5.3.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 (60) 02

b. Field contents

01 Message Type (QX)
60 Logic Check Override
02 Flight Identification

c. Examples

QX 046
QX N156TX/OK

d. Error Indicators

FLID FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position Input)

5.3.2 Logic

a. (R-position input) The Drop Track Only action is ignored and no response is given if it is entered when Surveillance Tie-Off is in effect.

b. (D-position input) The Drop track Only action is rejected if it is entered when Surveillance Tie-Off is in effect.

c. If the track is currently in Handoff status, the action will be rejected.

d. If Field 02 references a flight which is in Interfacility Point Out status but not in frozen Coast status, the following rejection message is returned:

INTRCTR PO NOT IN FRZ CST

e. Error Indicators

AID UPDATES PENDING
AC IN HANDOFF
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position input)
NO TRACK
INTRCTR PC NOT IN FRZ CST
NOT YOUR CONTROL
PVD NOT CONFIGURED (D-position input)
SECTOR dd HAS CONTROL
TRACK IN CROSSTELL STATUS

5.3.3 Processing

a. The track is dropped.

b. If the aircraft does not have an entered flight plan, the assigned flight plan storage will be dropped, and if the aircraft has been assigned a beacon code, that code will be removed from the affected Beacon Code Selection List. If the code is a discrete one, it will be returned to the list of available codes (provided it is a code which is automatically assignable by the computer program).

c. If the aircraft has an entered flight plan and has been assigned a beacon code, the code will be removed from the Beacon Code Selection List for the requesting sector. The track will not be automatically reinitiated, in this case. The code will remain assigned to the aircraft.

5.3.4 Resultant Outputs

a. All data blocks and halos for this track will be dropped from all Situation Displays.

b. The appropriate code deletion action will be made to update the Beacon Code Selection List.

5.4 INITIATE HANDOFF (QN or QZ)

This message is used to manually initiate the transfer of control of a tracked aircraft from one sector to another sector or facility. Manual handoff must be used when automatic handoff is inhibited for the specified flight (or for all flights within the sector) either by controller action or because the aircraft is climbing or descending on a nonadapted route and the aircraft's assigned altitude is outside the airspace of the sector controlling the track.

5.4.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	(01)* (60) 16 02

*Field required if D-position or QZ input

b. Field contents

01 Message type QN or QZ
60 Logic Check Override (/OK)
16 Output Routing
02 Flight Identification

c. Examples

QN 21 COA45 (D-position input)
QN DFW N673W (D-position input)
/OK 15 316 (R-position input, "NONE" message type)

d. Error Indicators

FLID FORMAT
(cofie) FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input)

5.4.2 Logic

a. An Initiate Handoff cannot be entered for an aircraft in the transfer mode.

b. The receiving sector or facility must be a valid sector (with an R-position) or facility and may not be the sending sector.

c. An Initiate Handoff to another NAS or ARTS facility is not allowed for an aircraft whose extrapolation status and/or track maneuver status is hold.

d. If the handoff is to an ARTS III facility, that facility must be one at which the aircraft's flight plan has previously been received.

e. A flight which has an AID identical to an SFID of a simulation flight can only be handed off to a configured training sector.

f. An attempt to transfer control of an aircraft to another facility (NAS or ARTS III) will be rejected if a future hold exists for that aircraft at a fix within the center having control.

g. An initiate handoff to another NAS or ARTS III facility is not allowed for an aircraft in Coast.

h. (R-position input) The Initiate Handoff action is ignored and no response is given if it is entered when Surveillance Tie-Off is in effect.

i. (D-position input) The Initiate Handoff message is rejected if it is entered when Surveillance Tie-Off is in effect.

j. An Initiate Handoff action will be rejected when entered before the TA message for a track that was in crosstell has been processed completely.

k. An Initiate Handoff action will be rejected when attempting to hand off an aircraft from an active sector to a training sector.

l. L00 or L cannot be used as a field 16 unless the flight plan information has previously been transmitted successfully from this NAS center to the NAS center being handed off to.

m. LLLdL or LdL cannot be used as a field 16 unless ARTS (Specific Position Handoff Eligibility) ASPH is on.

n. If Field 02 references a flight which is in Interfacility Point Out status, the following rejection message is returned:

AC IN INTERCTR POINTOUT

o. For an HNH handoff, LLL(dL) or L(dL) cannot be specified in field 16 unless parameters enhanced HNH ARTS status (HNHA) and Host NonHost status (HNHS) are “ON” and LLL is in an adapted external ARTS identifier or L is an adapted single letter identifier for an external ARTS. The optional ARTS specific position dL cannot be specified unless ARTS Specific Position Handoff (ASPH) eligibility is “ON.”

p. Error Indicators

AC IN COAST
AC IN HANDOFF
AC IN HOLD STATUS
AC IN INTERCTR POINTOUT
AC NOT TRACKING
AID UPDATES PENDING
ARTS/NAS NOT ON ROUTE
CORRECTION PENDING - source
FACILITY DOES NOT EXIST
FACILITY NOT HNH ENABLED
FACILITY NOT HNH ENHANCED
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position INPUT)
FUTURE HOLD STORED FOR AC
INCORRECT ROUTING
LINE DELAY - REENTER MSG
NO ARTS FP

NO SIM HANDOFF TO NAS/ARTS
NO TRACK
NO TRACKING CAPABILITY
NON-ADAPTED SECTOR
NOT YOUR CONTROL
PVD NOT CONFIGURED
SECTOR NOT ACTIVE
SECTOR dd HAS CONTROL
TRNG/LIVE INCOMPATIBLE
YOUR SECTOR

5.4.3 Processing

a. The aircraft will be placed in the transfer mode.

b. The aircraft will be considered to be under the control of the sending sector (i.e., the sector which has control of the track being handed off at the time the Initiate Handoff action is entered). However, the receiving sector or facility can assume control through an Accept Handoff action.

c. If the aircraft's track class is BEACON and it has been assigned a beacon code, that code will be added, if not already present therein, to the Beacon Code Selection List of the addressed sector.

d. If the handoff is to an adjacent NAS Center or ARTS III Facility, the remote outputs function will be notified that the appropriate messages must be cross-told to the receiving facility. These messages will contain the appropriate track data and receiving sector in the adjacent facility. If a single letter identifier is used in field 16 to initiate a handoff to an adjacent NAS center, the handoff will be processed as if L00 has been entered in field 16. If a single-letter identifier is used in field 16 to initiate a handoff to an ARTS facility, the handoff will be processed as if field 16 contained the equivalent three-letter ARTS location identifier.

e. The aircraft will be subject to HNH processing if field 16 is in the format LLL(dL) or L(dL), and LLL is an adapted external ARTS identifier or "L" is an adapted single-letter identifier for an external ARTS. If LLL is found to be an adapted external ARTS identifier, or L is found to be a single-letter identifier for an external ARTS, it will be translated to the adapted three-letter ARTS identifier used in the Host center to identify the ARTS. The translated ARTS identifier will be placed in field 16 of the TI message sent to the Host center as part of the NAS to NAS Remote Outputs function.

5.4.4 Resultant Outputs

a. Full Data Blocks will be forced to appear on both the sending and receiving sector's Situation Displays while the aircraft is in the transfer mode. If the data block was suppressed at the sending sector, it will become unsuppressed. The appropriate Initiate Handoff indication will appear in Field E of all data blocks for the aircraft. For intrafacility transfers, this will occur upon acceptance of the Initiate Handoff action. For interfacility transfers, this will occur at the sending center when the Initiate Handoff action is accepted, and at the receiving center when the Initiate Transfer message is accepted. If a displayed or stored interim altitude is in effect and the handoff is intrafacility, the receiving sector's data block will display the interim altitude in the assigned altitude field and "T" in the B4 character position.

   A receiving sector displaying an "R" in the D1 character position will continue to display the "R" until the sector gains control of the track.

b. If the handoff is to an adjacent NAS Center or ARTS III facility, appropriate track messages will be crosstold.

c. If the handoff action relates to an aircraft in a Hold List, the handoff indicator will appear in the Hold List on the Situation Display of the sending sector. A Hold List entry (or a Hold List if no list is being displayed) and a data block (if the aircraft is in a hold at present position) will be generated on the R-position of the addressed sector including the handoff indicator.

d. Appropriate code addition action will be made to update the addressed sector's Beacon Code Selection List.

e. If the aircraft is involved in a Conflict Alert at the time of the Initiate Handoff action, and the alert was suppressed via the CO message at the intended receiving sector, the alert will be unsuppressed and both data blocks will be redisplayed, if not already displayed, with the appropriate blinking status.

5.5 SELECT AUTOMATIC HANDOFF (QA)

This action provides the capability for inhibiting or enabling the Automatic Handoff Initiation (AHI) feature from the entering sector for a specified aircraft, sector, or facility.

5.5.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 (14) (14)* (02)**

*No more than five field 14 entries can be entered in one action. Field 14 and Field 02 entries cannot be included in the same input. If LLL is the second entry, it will be first compared with ARTS III designators. If one exists, the entered LLL will be considered field 14. Otherwise, the entered LLL will be considered a field 02 entry.

**At least one field 14 or field 02 is required in each input action.

b. Field contents

01 QA
02 Flight Identification
14 Sector Identifier

c. Examples

QA N873HC
QA LAX MAR
QA FDX243
QA 22
QA 212

d. Error Indicators

FLID FORMAT cofie FORMAT
NO TB FLIGHT ID CAPTURE (R-position input)

5.5.2 Logic

a. Automatic handoff can be inhibited for individual tracked aircraft which are not in the Transfer mode and only while under control of the sector entering the message.

b. (R-position input) The Select Automatic Handoff is ignored and no response is given if it is entered when an operational level of "FDP" is selected by the Surveillance Tie-Off message; a rejection message is generated when an operational level of "RD1" is selected.

c. (D-position input) The Select Automatic Handoff is rejected when an operational level of "FDP" or "RD1" is selected by a Surveillance Tie-Off message.

d. Automatic Handoff Initiation cannot be enabled for an individual aircraft if it is disabled by program action or a manual action inhibiting AHI for all aircraft gong to the next sector or facility on the aircraft's route.

e. AHI cannot be enabled to a facility which does not have tracking capability.

f. If Field 02 references a flight which is in Interfacility Point Out status, the following rejection message is returned:

AC IN INTERCTR POINTOUT

g. Error Indicators

AC IN HANDOFF
AC IN INTERCTR POINTOUT
AHI NOT ALLOWED
FACILITY DOES NOT EXIST
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF
NO TRACK
NO TRACKING CAPABILITY
NON-ADAPTED SECTOR
NOT YOUR CONTROL
PVD NOT CONFIGURED
SECTOR dd HAS CONTROL
SECTOR NOT ACTIVE
YOUR SECTOR

5.5.3 Processing

The Select Automatic Handoff action will act as a switch to suppress or enable the Automatic Handoff Initiation (AHI) capability from the entering sector for either a specified aircraft, or an aircraft to be handed off to a specified sector or facility.

The rules for processing are described below.

a. Field 02 is included in the action.

1. If AHI is not presently being inhibited, inhibit AHI for the specified aircraft.

2. If AHI is being inhibited by a previous input of the action with the same flight identification or by retraction of a handoff, enable AHI for the specified aircraft.

NOTE: If AHI is being inhibited for any reason other than those stated above, the input will be rejected.

b. Field 14 is included in the action.

1. If AHI is not being inhibited from the entering sector to the sector or facility specified in field 14, inhibit AHI for all aircraft being handed off to that sector or facility (regardless of whether AHI is enabled or inhibited for individual aircraft going to the specified sector or facility).

2. If AHI to the specified sector or facility is presently being inhibited by previous input of the action, enable AHI from the entering sector to the specified sector or facility. Any aircraft currently within the entering sector with AHI inhibited to the specified sector or facility will not have AHI enabled as a result of this action. This action will not result in the enabling of aircraft inhibited by input of an individual inhibit by program action or by retraction of a handoff.

NOTE: All aircraft that satisfy the conditions for AHI will have AHI enabled at startup. In addition, AHI to all sectors and facilities not inhibited by program action will also be enabled at startup. the Resector (CS) message will not affect the status of AHI for aircraft disabled by manual action.

5.5.4 Resultant Outputs

a. If AHI has been inhibited for an individual aircraft, an attention indicator is displayed in the associated track data block to alert the controller that, when a handoff is required, it must be initiated manually.

b. If AHI is enabled for an individual aircraft, the attention indicator (described in par. a. above) will be removed from the associated track data block.

c. When the AHI capability to sectors or facilities is changed, appropriate messages will be sent to the DSR R-position console to update the Auto Handoff Inhibit List. Attention indicators displayed on individual aircraft as a result of this action will also be updated.

5.6 TRACK (QT)

This message is used to initiate or reinitiate a Flight plan-Aided Track (FLAT) or a FREE track on a specific radar trail.

5.6.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 (60)**(65)* (68)* (05) (08) (56) (64) (74) 02

*Either field 65 or 68 is required unless a track exists.

**Field 60 is ignored when entered if a track exists.

NOTE: The only allowable fields for a flight in Interfacility Point Out Status are:

Field 01 Message Type (QT)
Field 65 Trackball Coordinates
Field 68 Fix
Field 02 Flight Identification

b. Field Contents

01 Message Type (QT)
02 Flight Identification
05 Speed
08 Assigned Altitude
56 Heading
60 Logic Check Override (/OK)
64 Action Type (FR)
65 Trackball Coordinates
68 Fix (must be preceded by "//")
74 Primary Track Class Indicator

NOTE: Any optional fields input is supplemental data associated with a track action.

c. Examples

QT S400 10 N5608S
QT (TBP) 089 (R-position input)
QT /OK (TBP) 137 (R-position input)
QT (TBP) 05 N1396H (R-position input)
QT (TBP) FR 138 (R-position input)
QT 00 5150 P (TBP) 845 (R-position input)
QT //GSP S150 32 N328T

d. Error Indicators

DUPLICATED ACTION
FLID FORMAT
(cofie) FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input)

5.6.2 Logic

a. A track may not be initiated on an aircraft whose flight plan is under the control of another sector unless a "/OK" is included in the input.

b. A track may be reinitiated only by the sector which has control of that track, with the exception of a track that is in Interfacility Point Out status. A track in Interfacility Point Out status may be reinitiated (i.e., repositioned) by any sector displaying the "J" character in the D1 position of the full data block.

c. (P-position input) The Track Action is ignored and no response is given if it is entered when Surveillance Tie-Off is in effect.

d. (D-position input) The Track Action is rejected if it is entered when Surveillance Tie-Off is in effect.

e. If the track is positioned outside the area adapted for tracking, the input will be rejected.

f. If a start message is entered for a leg of a flight that has a discrete beacon code which is assigned to more than one flight plan and one of the following conditions exist, the message will be rejected:

1. The leg does not immediately precede or follow the most recently tracked leg.

2. The leg follows a currently tracked leg that has not been handed off to the adjacent center.

3. The leg precedes a leg that is currently tracking or has been handed off to the adjacent center.

g. If field 68 is entered, it must be a fix that is in fix adaptation, a lat/long, or an FRD (the fix name portion of which must be adapted).

h. If any fields other than 01, 65, 68, or 02 are entered for a flight in Interfacility Point Out status, the track reinitiate action will occur, and the following rejection message will be returned:

AC IN INTERCTR POINTOUT

i. Error Indicators

AC IN INTERCTR POINTOUT AID UPDATES PENDING
CORRECTION PENDING - Source (Applicable only when the message removes the aircraft from a hold.)
DUPE AID ALREADY TRACKING
FIX OUTSIDE ADAPTED AREA
FLID DUPLICATION
FLID NOT STORED
FLIGHT IN HNH HANDOFF
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position input)
INVALID ACTION TYPE
INVALID FIX
NO TRACK
NO TRACK DATA BLOCK
NOT YOUR CONTROL
PVD NOT CONFIGURED (D-position input)
SECTOR dd HAS CONTROL
TB OUTSIDE ADAPTED AREA (R-position input)
TOO MANY FP
TOO MANY TRACKS
TRACK IN CROSSTELL STATUS (Applicable in sending and receiving centers, except at sector addressed in initiate handoff action)
ZERO SPEED

5.6.3 Processing

a. If field 64 (FR) is entered, the mode request indicator will be set to FREE.

b. If the aircraft has not been assigned flight plan storage, a computer identification number will be assigned and the tracking mode will be FREE. If an active flight plan for the aircraft should be subsequently entered, the flight plan will be stored in the assigned flight plan storage, and the track will be paired to the flight plan. The tracking mode will be changed to FLAT unless field 64 was entered.

c. If flight plan storage has been assigned, but a track is not paired to the flight plan, then track storage will be assigned and paired to the flight plan. The tracking mode will be FLAT unless field 64 was entered.

d. Initiate a track.

e. If the aircraft is in Hold status, the hold will be terminated. The present time will be assumed to be the departure time from the hold fix.

f. If the Airborne Equipment Qualifier in the flight plan storage indicates that the aircraft is capable of replying to a beacon interrogation, the track class will be set to BEACON. If there is an entered flight plan and no Airborne Equipment Qualifier, or if the qualifier does not indicate beacon interrogation capability, the track class will be set equal to PRIMARY. If there is no entered flight plan, the track class will be tentatively set to BEACON.

g. The entering sector will have control of the track, unless the track is in Interfacility Point Out status.

h. If the aircraft has an assigned beacon code that is not already present in the requesting sector's Beacon Code Selection List, add the code to that list.

i. If the aircraft has a discrete code assigned, and the code is in the automatic track initiation list, delete it from that list.

j. The speed (field 05) entered in this message will not alter field 05 in the Flight Plan Data Base.

k. The optional altitude (field 08) entered in this message will alter field 08 in the Flight Plan Data Base. When flight plan storage does not exist and the flight plan is proposed, tentative flight plan storage will be assigned using the field 08 entered.

l. If the flight was in Crosstell status, and the message was entered in the receiving center, the flight will be taken out of Crosstell status and track control will exist at the entering sector.

m. If field 74 (P) is entered, the track class is set to primary.

n. If the aircraft has been assigned flight plan storage and the flight plan is proposed, assign tentative flight plan storage if the action was entered using an AID as a flight identification. If the action was entered using any other field 02 format, reject the message with "FLIGHT NOT ACTIVE."

o. If the aircraft was in inbound HNH ARTS status and a new track was initiated, the flight will be removed from this status.

5.6.4 Resultant Output

a. If the aircraft presently appears in a hold, departure, or inbound list, it will be removed from the list.

b. The track position symbol will indicate a flat or free track, as applicable.

c. Display a data block at the input trackball coordinates or fix (or the current track position if no trackball or fix is input) without waiting for correlation to occur. If the tracking function must calculate initial heading and/or initial speed, display a zero velocity vector until an initial track velocity is computed. If initial heading and/or initial speed is being computed, display the data block at the position of the first and second radar data when it is correlated. Then display the data block. If no correlation occurs, the tracking mode will be set to Coast when track merit equals unreliable.

d. Appropriate code addition action will be made to update the Beacon Code Selection List.

e. When the aircraft is in crosstell status and control exists in another facility, the track action will remove it from crosstell and an Accept Transfer message will be prepared for the sending facility.

f. If the flight was in crosstell status, and the message is entered in the receiving center, the contents of Field E will be replaced by "OLdd" in the data blocks on the receiving sector's Situation Display upon acceptance of the Track Action.

g. If the start track message is accepted for a flight that has a discrete beacon code which is assigned to more than one flight plan and a track exists for another leg of the flight, it will result in the track for the other leg decorrelating.

h. When field 08 is present, amendment messages will be transmitted if necessary, to NAS, ARTS facilities, and/or the Central Flow Automation Facility (CFAF).

5.7 CONVERT POINT OUT TRACK (QT)

This message is used to remove a flight from Interfacility Point Out status and reinitiate the track under center control.

5.7.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 (05) (08) (56) (60) 64 (65) (68) (74) 02

b. Field Contents

01 Message Type (QT)
02 Flight Identification
05 Speed
08 Assigned Altitude
56 Heading
60 Logic Check Override (/OK)
64 Action Type (C)
65 Trackball Coordinates
68 Fix (must be preceded by "//")
74 Primary Track Class Indicator

NOTE: Any of the optional fields input is supplemental data associated with the Convert Point Out Track action.

c. Examples

QT /OK C AAL123
QT C //MLC 456
QT C 135 S300 DAL76 (R-position input)

d. Error Indicators

DUPLICATED ACTION
FLID FORMAT
(cofie) FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input)

5.7.2. Logic

a. (R-position input) The Convert Point Out Track action is ignored and no response is given if it is entered when Surveillance Tie-Off is in effect.

b. (D-position input) The Convert Point Out Track message is rejected if it is entered when Surveillance Tie-Off is in effect.

c. If the track is positioned outside the area adapted for tracking, the input will be rejected.

d. For purposes of sector eligibility checking, current rules for nontracked aircraft are applicable for nontentative flights. No sector eligibility checking is performed on a Convert Point Out Track action entered on a tentative flight.

e. If field 68 is entered, it must be a fix that is in fix adaptation, a lat/long, or an FRD (the fix name portion of which must be adapted).

f. If the flight identification entered in field 02 references a proposed flight, the message is rejected and the following is returned:

FLIGHT NOT ACTIVE

g. If the flight identification entered in field 02 does not match a stored flight, the message is rejected and the following is returned:

FLID NOT STORED

h. If field 02 references an active flight, the flight must be in Interfacility Point Out status or the message is rejected and the following is returned:

NOT A POINT OUT TRACK

i. Error Indicators

FIX OUTSIDE ADAPTED AREA
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FLT NOT ELIGIBLE
FUNCTION TIED OFF (D-position input)
INVALID BLOCKED ALT
INVALID FIX
NOT A POINT OUT TRACK
NOT YOUR CONTROL
TB OUTSIDE ADAPTED AREA (R-position input)
TRNG/LIVE INCOMPATIBLE ZERO SPEED

5.7.3 Processing

a. The entering sector will have control of the track. The track is removed from Interfacility Point Out status and reinitiated under center control.

b. If the aircraft is in Hold status, the hold is terminated and present clock time is assumed to be the departure time from the hold fix.

c. An optional speed (field 05) entered in the message will not alter field 05 of the Flight Plan Data Base.

d. An optional altitude (field 08) entered in the message will alter field 08 of the Flight Plan Data Base.

e. If the aircraft's assigned or established beacon code (if different from assigned) is not present in the requesting sector's Beacon Code Selection List, the assigned/established code is added to the list.

f. If this action causes the capacities of the Beacon Code Selection List to be exceeded, responses will be generated.

g. If field 74 (P) is entered, the track class is set to primary.

h. The flight is reinitiated with a mode request indicator of flat.

5.7.4 Resultant Output

a. If no full data block is currently displayed at the entering sector's situation display, a new FDB will be displayed at the input trackball coordinates or fix (or the current track position if no trackball or fix was entered).

b. If an FDB is currently displayed at the entering sector, the "J" is removed from the D1 position. All sectors displaying an Interfacility Point Out data block will have their displays updated and the "J" in the D1 positions will be replaced with "P"s.

c. Appropriate code addition action will be made to update the Beacon Code Selection List.

d. If the aircraft presently appears in an inbound or departure list, it will be removed.

e. When field 08 is present, amendment messages will be transmitted to NAS, ARTS facilities, and/or the Central Flow Automation Facility (CFAF), if necessary.

6.0 DISPLAY CONTROL MESSAGES

The following Display Control Messages can be found in this section:

6.0 DISPLAY CONTROL MESSAGES

Display Control Messages are used to control the presence, absence, and arrangement of data on the Situation Display and CRD at an R-controller position when Surveillance Tie-Off is not in effect.

6.1 CODE DELETE (QB)

This action is used to specify beacon codes (Mode 3/A) that are to be deleted from or added to the Beacon Code Selection List for the sector. These codes are used for display filtering by the selected beacon function.

6.1.1 Format

a. Fields

DEVICE		FIELDS
R-position or D-position	(01)	(64) 04 (04) etc.

NOTE: Up to 9 codes may be deleted in one message.

b. Field Contents

01 Message type (QB)
64 Action Type (DE)
04 Beacon Code

c. Examples

QB 2473
QB DE 3100
QB 0420 2400 2401 2402 2460
QB DE 4500 4501 3001 2411 2416
QB 2433 2442 DE 2477 0400 4520

d. Error Indicators

BCN CODE FORMAT
(cofie) FORMAT
MESSAGE TOO SHORT

6.1.2 Logic

a. All codes following the letters “DE” will be deleted if they are included in the list of selected codes for the sector. No change will be made to the list of codes if they are not included. Codes entered before the action type “DE,” or without an action type, will result in automatic updating of the Beacon Code Selection List (i.e., any codes not included in the list of selected codes will be inserted; any codes already in the list of selected codes will be deleted).

b. Error Indicators

INVALID ACTION TYPE
PVD NOT CONFIGURED (D-position input)

6.1.3 Processing

a. If a code deleted by this message is not a selected Mode 3/A code, there will be no change to the Beacon Code Selection List for the requesting console.

b. A code deleted by this message will be removed from the Beacon Code Selection List for the requesting sector.

c. Each code inserted by this message will be added to the Beacon Code Selection List for the requesting sector, after being suffixed by the manual insertion indicator (.).

6.1.4 Resultant Outputs

Appropriate code addition/deletion actions will be made to update the Beacon Code Selection List.

6.2 CODE INSERT (QB)

This action is used to specify beacon codes (Mode 3/A) that are to be inserted in or deleted from the Beacon Code Selection List for the sector. These codes are used for display filtering by the selected beacon function.

6.2.1 Format

a. Fields

DEVICE		**FIELDS**	
R-position or D-position	(01)	(64) 04	(04) (04) etc.

NOTE: Up to 9 codes may be inserted in one message.

b. Field Contents

01 Message Type (QB)
64 Action Type (IN)
04 Beacon Code

c. Examples

QB 2473
QB IN 3100
QB 0420 2400 2401 2402 2460
QB IN 4500 4501 3001 2402 2416
QB 2433 2442 IN 2477 0400 4520

d. Error Indicators

BCN CODE FORMAT
(cofie) FORMAT
MESSAGE TOO SHORT

6.2.2 Logic

a. All codes following the letters "IN" will be inserted if they are not included in the list of selected codes for the sector. No change will be made to the list of codes if they are included due to a previous manual insert action.

b. Codes entered before the action type "IN" or without an action type will result in automatic updating of the Beacon Code Selection List (i.e., any codes not included in the list of selected codes will be inserted; any codes already in the list of selected codes will be deleted).

c. Error Indicator

INVALID ACTION TYPE
PVD NOT CONFIGURED (D-position input)

6.2.3 Processing

a. If a code inserted by this message is already a manually selected code, there will be no change to the Beacon Code Selection List for the requesting console. If the code being inserted already appears in the requesting sector's Beacon Code Selection List as the result of a program insertion, the manual insertion indicator (.) will be appended to the code in that list.

b. Each code being inserted by this message will be added to the Beacon Code Selection List for the requesting sector, after being suffixed by the manual insertion indicator (.)

c. A code that is being deleted by means of this message will be removed from the Beacon Code Selection List for the requesting sector.

6.2.4 Resultant Outputs

Appropriate code addition/deletion actions will update the affected Beacon Code Selection List.

6.3 DATA BLOCK OFFSET (QN or QZ)

This action is used to reposition selected data blocks on the Situation Display of the entering sector with reference to the position symbol by changing the azimuth and/or distance from the symbol as a means of alleviating clutter.

6.3.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	(01)* 59 02

*Field required if D-position or QZ input

b. Field Contents

01 Message Type (QN or QZ)
59 Offset Direction/Leader Length
02 Flight Identification

c. Examples

QN 4 297 (D-position input)
5 DAL58 (R-position input, “NONE” message type)
QN 2/3 301 (D-position input)
2 FOGG1 (R-position input, “NONE” message type)
4 952 (R-position input, “NONE” message type)

d. Error Indicators

FLID FORMAT
(cofie) FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (P-position input)

6.3.2 Logic

a. When referencing a CDB associated with an IFR in hold, the only allowable elements for Field 02 are trackball enter and AID.

b. When referencing a CDB that is not associated with an IFR in hold, the only allowable elements for Field 02 are trackball enter and AID.

c. The Offset Direction Element of Field 59 must specify a proper direction.

d. The Leader Length Element of Field 59 must specify a proper length.

e. Error Indicators

FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position input)
ILLEGAL FLIGHT ID
INVALID DIRECTION
INVALID LENGTH
NO TRACK DATA BLOCK
PVD NOT CONFIGURED (D-position input)

6.3.3 Processing

a. The numbers in Offset Direction are to be interpreted as requesting offset directions as follows:

NUMBER	DIRECTION
1	Northwest
2	North
3	Northeast
4	West
5	Based on track heading at the time of the request
6	East
7	Southwest
8	South
9	Southeast

b. The numbers in the Leader Length Element of Field 59 are to be interpreted as requesting leader lengths as follows:

NUMBER	LENGTH
0	0 inches
1	1/32 of the display diameter
2	1/16 of the display diameter
3	1/8 of the display diameter
5	The setting specified by the DEC's Full Data Block Leader Length Control Switch

6.3.4 Resultant Output

The selected aircraft data block will be repositioned in accordance with the input offset action and will affect only the Situation Display at the entering sector.

6.4 FORCED DATA BLOCK SITUATION DISPLAY (QN or QZ)

This action is used to cause or remove the forcing of the display of a track data block for an individual aircraft on a sector's Situation Display but cannot remove the forcing of a track data block by program action (e.g., EMRG, RDOF, in handoff). This action can also be used to simultaneously delete both the full data block and the halo at a sector that does not have track control (a previous controlling sector).

6.4.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	(01)* 02

*Field required if D-position or QZ input

b. Field Content

01 Message Type (QN or QZ)
02 Flight Identification

c. Examples

QN 2405 (D-position input)
DAL832 (R-position input, "NONE" message type)

d. Error Indicators

FLID FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input)

6.4.2 Logic

a. A track data block cannot be forced for an aircraft whose extrapolation status and/or track maneuver status is Hold (other than present position).

b. A track data block cannot be forced for a simulated training flight at an active sector or for an active flight at a training sector.

c. The Forced Data Block action against a track data block for an aircraft in conflict alert, when all alerts for the referent aircraft are not CO suppressed at the requesting sector, will be rejected and the following message returned:

AC NOT CO SUPPRESSED

d. Error Indicators

AC IN HOLD STATUS
AC NOT CO SUPPRESSED
AC NOT TRACKING
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position input)
NO TRACK
PVD NOT CONFIGURED (D-position input)
TRNG/LIVE INCOMPATIBLE

6.4.3 Processing

a. If a trackball is input for Flight Identification and no trackball capture is reported, the HCS will search an area for an aircraft.

b. If display of the aircraft's track data block is being suppressed because the aircraft is within the ATID distance of the departure point, this action will cause the track data block to be displayed.

6.4.4 Resultant Outputs

a. If the aircraft's track data block is being displayed on the requesting sector's Situation Display, and it is not being timed out in preparation for deletion and is not being forced, then force the track data block without a timeout.

b. If the aircraft's track data block is not being displayed on the requesting sector's Situation Display, display and force the track data block at that R-position without a timeout.

c. If the aircraft's track data block is being displayed on the requesting sector's Situation Display, but is being timed out at that sector in preparation for its deletion (e.g., after handoff has been accepted and this sector has lost control of the track), then the track data block will immediately be deleted from that sector's Situation Display along with the halo (if one exists).

d. If the aircraft's track data block is being displayed on the requesting sector's Situation Display and is not being timed out in preparation for deletion and is being forced due to a previous Forced Data Block action (but not also by program action) then either:

1. Unforce the track data block when the requesting sector is also the controlling sector or the requesting sector originally received the display of the track data block due to a Point Out or a Request action, or

2. Delete the track data block from the requesting sector's Situation Display if the data block is being displayed only as a result of a previous Forced Data Block action.

a) If the deleted track data block is for a flight in Interfacility Point Out status and no other Interfacility Point Out Data Blocks are displayed for the referent flight as a result of either an interfacility or intrafacility Point Out action, a Request action, or a manual Force action, then drop the tentative flight plan (if one exists) and track entry from storage. If the referent flight has nontentative flight plan storage, do not drop the flight plan storage; drop the track entry only.

e. If the aircraft's track data block is being forced as a result of a program action (e.g., EMRG, RDOF, in handoff) and the display is not being timed out in preparation for deletion, take no action on the data block as a result of the input message.

6.5 MODIFY ALTITUDE LIMITS (QD)

This action is used to enter the sector's low and high altitude limit. These altitude limits are used by the Multiple Radar Data Processing function for formatting Mode C display data blocks.

6.5.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 08

b. Field Contents

01 Message Type (QD)
08 Assigned Altitude - Only the blocked altitude format (dddBddd) is allowed and is interpreted as the Altitude Limits.

c. Example

QD 130B180

d. Error Indicators

(cofie) FORMAT

6.5.2 Logic

a. Error Indicators

FUNCTION TIED OFF (D-position input)
INVALID BLOCKED ALT
PVD NOT CONFIGURED (D-position input)

6.5.3 Processing

The entered altitude limits will be stored for the requesting sector's Situation Display. (The altitude limits are used by the Multiple Radar Data Processing function for formatting Mode C display data blocks.)

6.5.4 Resultant Output

The Altitude Limits display on the R-CRD view will be updated with the new limits.

6.6 POINT OUT (QP)

This action is used to request the display of a full data block on other sectors and/or adjacent NAS Center's Situation Displays, and if appropriate, to cause the established beacon code of the track to be inserted in the associated Beacon Code Selection List.

6.6.1 Format

a. Field Contents

01 Message Type (QP)
16 Output Routing
02 Flight Identification

The Output Routing designator (Field 16) must conform to one of the following formats:

1. A 2-digit number, other than 00.

2. A 3-character identifier in the format "Ldd," where the first character is a letter and the remaining two characters are digits other than 00.

otherwise, the erroneous Field 16 entry will be rejected and the following error message will be returned:

SECTOR FORMAT

b. Example

QP 07 NW303
QP A14 TWA10
QP 04 03 02 12 AAL12
QP M07 M21 A13 A02 (TBE)
QP 01 03 A06 12 NWA175

c. Error Indicators

FLID FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input)
SECTOR FORMAT

6.6.2 Logic

a. Each occurrence of Field 16 in the input message is treated as a separate Point Out request by the HCS in the entering facility. Rejection of one or more Field 16 entries due to errors does not affect the processing of any other Field 16 entries that are free of errors, only those fields in error are rejected. However, if the HCS detects an error associated with the Flight Identification (Field 02), the entire Point Out message is rejected.

b. If Field 02 references a proposed flight plan, the entire Point Out message is rejected and the following response is returned:

FLIGHT NOT ACTIVE

c. If Field 02 does not match the flight identification of a stored flight plan or references a flight plan that is being dropped from storage, the entire Point Out message is rejected and the following response is returned:

FLID NOT STORED

d. If more than one active flight plan exists with the flight identification entered in Field 02, the entire Point Out message is rejected and the following message is returned:

FLID DUPLICATION

e. If track storage does not exist for the flight referenced by Field 02, the entire Point Out message is rejected and the following message is returned:

NO TRACK

f. If the flight plan referenced by Field 02 has an extrapolation status that is other than HOLD, but the track maneuver status of the associated track is HOLD, the entire Point Out message is rejected and the following rejection message is returned:

AC NOT TRACKING

g. If the same Field 16 value is specified more than once in a single Point Out message, only the first occurrence is processed. The remaining duplicate entries are rejected with the following response:

DUPLICATE SECTOR

h. If the Point Out message is entered either from an active sector and Field 02 references a training flight, or a training sector and Field 02 references an active flight, the entire Point Out message is rejected and the following message is returned:

TRNG/LIVE INCOMPATIBLE

i. If the Point Out message is entered either from an active sector and the sector specified in Field 16 is a training sector, or a training sector and the sector specified in Field 16 is an active sector, the Field 16 entry is rejected and the following response is returned:

TRNG/LIVE INCOMPATIBLE

j. A request for an intrafacility (within center) Point Out for an aircraft whose extrapolation status is hold (other than present position) is rejected and the following message is returned:

AC IN HOLD STATUS

k. A request for an interfacility (center to center) Point Out for an aircraft in hold (present position or fix hold) is rejected with the following message:

AC IN HOLD STATUS

l. A request for an interfacility (center to center) Point Out for an aircraft in COAST is rejected with the following message:

AC IN COAST

m. If the sector specified in Field 16 does not have an assigned R-position console, the Field 16 entry is rejected and the following response is returned:

PVD NOT CONFIGURED

n. (D-position input) The Point Out Action is rejected if it is entered at a D-position CRD with no D-CRD configured at the entering sector, and the following response is returned:

PVD NOT CONFIGURED

o. If the sector specified in Field 16 does not exist, the Field 16 entry is rejected and the following response is returned:

NON-ADAPTED SECTOR

p. If a three-character Field 16 is entered which contains a valid adjacent NAS Center identifier followed by two digits 00 (zero zero) or a 2-character field 16 is entered with the digits 00, the Field 16 entry is rejected and the following response is returned:

NON-ADAPTED SECTOR

q. If the sector specified in Field 16 is the same as the sector from which the Point Out message is entered, the Field 16 entry is rejected and the following response is returned:

YOUR SECTOR

r. If the sector specified in Field 16 is not active, but is a valid adapted sector, the Field 16 entry is rejected and the following response is returned:

SECTOR NOT ACTIVE

s. If a Field 16 identifies an adjacent NAS Center, and Field 02 references a flight that does not have an established beacon code, or its established code is nondiscrete with the exception of special codes, the Field 16 entry is rejected and the following response is returned:

ILLEGAL BEACON CODE

t. If a Field 16 identifies an adjacent NAS Center, then the entering Center of the Point Out message must have track control, or the Field 16 entry is rejected and the following response is returned:

NOT YOUR CONTROL

u. If a three-character Field 16 is entered and the first character is not recognized as a valid adjacent NAS Center identifier, the Field 16 entry is rejected and the following response is returned:

FACILITY DOES NOT EXIST

v. If a three-character Field 16 is entered and the first character identifies an adjacent NAS Center that does not have radar data processing capability, the Field 16 entry is rejected and the following response is returned:

NO TRACKING CAPABILITY

w. If a three-character Field 16 is entered and the first character identifies an adjacent NAS Center to which interfacility transmissions have been inhibited, the Field 16 entry is rejected and the following response is returned:

TRANSMISSION INHIBITED

x. If Field 16 identifies an adjacent NAS Center, and Field 02 references a flight currently in Crosstell status, the Field 16 entry is rejected and the following response is returned:

TRACK IN CROSSTELL STATUS

y. If the Point Out message is entered from a training sector and Field 02 references a training flight, but Field 16 identifies an adjacent NAS Center, the Field 16 entry is rejected and the following response is returned:

NO DYSIM POINT OUT TO NAS

z. If the entering sector is not eligible to enter Point Out messages to the adjacent NAS Center/Sector identified in Field 16, the Field 16 entry is rejected and the following response is returned:

NOT ELIGIBLE TO PO TO aaa

aaa is the entered Field 16.

aa. Error Indicators

AC IN COAST
AC IN HOLD STATUS
AC NOT TRACKING
DUPLICATE SECTOR
FACILITY DOES NOT EXIST
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FLT NOT ELIGIBLE
FUNCTION TIED OFF (D-position input)
ILLEGAL BEACON CODE
NO DYSIM POINT OUT TO NAS
NO TRACK
NO TRACKING CAPABILITY
NON-ADAPTED SECTOR
NOT ELIGIBLE TO PO TO aaa
NOT YOUR CONTROL
PVD NOT CONFIGURED
SECTOR NOT ACTIVE
TRACK IN CROSSTELL STATUS
TRANSMISSION INHIBITED
TRNG/LIVE INCOMPATIBLE
YOUR SECTOR

6.6.3 Processing

a. If no errors are found during message format and logic checking, the Point Out message is accepted and an Acceptance message is routed to the R-CRD view of the entering device. This Acceptance message indicates acceptable format and logic checking only and does not indicate the success or failure of a Point Out in the adjacent Center.

b. If the full data block is presently displayed on the Situation Display identified by the entered sector number, take no action on the full data block except to ensure that the full data block will continue to be displayed until one of the following actions occur:

1. The referent data block is suppressed via the REQUEST/SUPPRESS DATA BLOCK message (QP) or;

2. The aircraft's track is dropped from storage.

c. If the full data block is not presently being displayed on the Situation Display paired to the addressed sector, a full data block will be prepared for display.

d. In either condition (b or c above), the established code of the track, if available, is made a candidate for insertion into the code selection list of the R-position addressed in the Point Out message unless the established code is an adapted VFR nondiscrete code.

6.6.4 Resultant Outputs

For each acceptable Field 16 entry that specifies a sector located within the same Center, display the full data block at the addressed sector.

For each acceptable Field 16 entry that specifies a sector located in an adjacent NAS Center, an Initiate Point Out (IP) Message is transmitted to the adjacent NAS Center specified in the first character of Field 16.

If the track data block is in Conflict Alert at the sector identified by this message, but suppressed via the CO message, the alert will be unsuppressed and both data blocks will be redisplayed, if not already displayed, with the appropriate blinking status. While operating in the DARC/NAS Mode and with parameter CAMP "ON," this action will result in Conflict Alert messages and a Conflict Alert List message being transmitted to DARC. The Display Status for the Conflict Alert messages will be "BLINK FDB" when both tracks are controlled and "BLINK AID" for both tracks when at least one is an MCI track. The List Action Indicator for the Conflict Alert List message will be "MODIFY" and the Suppression Indicator will be "UNSUPPRESSED."

6.7 REPOSITION LIST (QP)

This action is used to reposition the display of the specified tabular list.

6.7.1 Format

a. Fields

DEVICE	FIELDS
R-position	01 61 65

b. Field Contents

01 Message Type (QP)
61 List Display Identifier
65 Trackball Coordinates

c. Example

QP H (TBE)
QP D (TBE)

d. Error Indicators

cofie FORMAT

6.7.2 Logic

a. The Reposition List Action is ignored and no response is given if it is entered when Surveillance Tie-Off is in effect.

b. The lists identified must be one of the following:

H = Hold
I = Inbound
D = Departure
C = Conflict Alert
G = Group Suppression
V = VFR INHIBIT
M = Metering

c. Error Indicators

NOT A VALID LIST ID

6.7.3 Processing

This new list position will be determined and retained until a subsequent Reposition List Action is entered by the sector, the sector becomes inactive, or a new sectorization plan is implemented. A sector becoming inactive will affect Hold, Inbound, Departure, Metering and VFR inhibit lists, but not Conflict Alert or Group Suppression Lists.

6.7.4 Resultant Outputs

Position the upper left hand corner of the identified list at the display coordinates specified by the trackball.

6.8 REQUEST/SUPPRESS DATA BLOCK (QP)

This action is used to request or suppress the display of the data block for an individual aircraft at the entering sector. This action can also be used to simultaneously delete both the full data block and the halo at a sector that does not have track control (a previous controlling sector).

6.8.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 02

b. Field Contents

01 Message Type (QP)
02 Flight Identification

c. Example

QP 2411
QP (TBE)

d. Error Indicators

cofie FORMAT
FLID FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input)

6.8.2 Logic

a. A request for a track data block cannot be honored for an aircraft whose extrapolation status and/or track maneuver status is Hold (other than present position).

b. The full data block at the controlling sector cannot be suppressed if the aircraft is in Handoff status.

c. A request for a track data block cannot be honored for a live aircraft from a training sector or for a SIM aircraft from an active sector.

d. A Request/Suppress Data Block Action can be entered for aircraft in Conflict Alert provided that the Suppress/Request Conflict Alert Pair (CO) Message is entered first for all alert(s) the aircraft is currently involved in.

e. A Request/Suppress Data Block Action can be entered for aircraft in Immediate Alert provided that the Suppress/Request Conflict Alert Pair (CO) Message is entered first for all the aircraft's active alerts.

f. A Mode C Intruder (MCI) Conflict Data Block (CDB) is not eligible to be suppressed via the Request/Suppress Data Block Message.

g. Error Indicators

AC IN HANDOFF
AC IN HOLD STATUS
AC NOT CO SUPPRESSED
AC NOT TRACKING
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF (D-position input)
NO TRACK
PVD NOT CONFIGURED (D-position input)
TRNG/LIVE INCOMPATIBLE

6.8.3 Processing

If a trackball is input for Flight Identification and no DC trackball capture is reported, the HCS will search an area for an aircraft.

6.8.4 Resultant Outputs

a. If the aircraft's data block is displayed at the requesting sector, and the sector is either the controlling sector for a track not in Handoff status or the receiving sector for a track in Handoff status, reduce the data block to a position symbol and vector for the Suppress Track Symbology Interval (STSI).

b. If the data block which is the object of the Suppress Data Block Action is being timed out at the requesting sector's Situation Display preparatory to being dropped (e.g., after handoff has been accepted and this sector has lost control of the track), the data block will be immediately dropped from that sector's Situation Display along with the halo (if one exists).

c. If the aircraft's data block is not being displayed at the requesting sector's Situation Display, route the data block to the requesting sector's Situation Display without a timeout.

d. If the aircraft's data block is being displayed as a result of item c above or as a result of any of the following, drop the display of the data block at the requesting sector's Situation Display.

    1. A Point Out action in which the sector addressed is the sector taking the Request/Suppress Data Block action. When this condition applies and an associated beacon code exists in the sector's code selection list, the code is made a candidate for deletion from the list.

    2. A Forced Data Block Action entered at the requesting sector's Situation Display.

    3. Automatic program forcing due to boundary crossing into the requesting sector's airspace without an Initiate Handoff action.

e. If a data block is suppressed according to the provisions of paragraph a above, reentry of this action will cause the data block suppression to be terminated.

f. If a Suppress Data Block action is entered for a flight in Interfacility Point Out status and there are no other Interfacility Point Out Blocks displayed for the referent flight as a result of either an interfacility/intrafacility Point Out action, Request action, or Manual Force action, drop the tentative flight plan (if one exists) and track entry from storage. If the referent flight has nontentative flight plan storage, do not drop the flight plan storage; drop the track entry only.

6.9 ROUTE DISPLAY (QU)

For active flight plans, this action is used to display the portion of the specified aircraft's route from the extrapolated flight plan position to a point which takes place at a parameter number of minutes along the route, or, if requested, to a point which will be met at a specified time interval. In any case, the display will not extend beyond the last converted fix for the flight plan or the limit of the Situation Display geographical viewing area of the entering sector, whichever is encountered first. When this action is entered for a proposed flight, the departure point will be displayed. When the action is entered, and the route is already being displayed, the display will be deleted.

6.9.1 Format

If the number of fields or the format of field 49 does not meet the requirements for a Route Display request, the message will be assumed to be a Track Reroute action.

a. Fields

DEVICE	FIELDS
R-position or D-position	01 (49) (02)

b. Field Contents

01 Message Type (QU)
02 Flight Identification
49 Route Display Time

c. Examples

QU
QU N89TJ
QU 30 168
QU 99 (TBE)

d. Error Indicators

(cofie) FORMAT
FLID FORMAT

6.9.2 Logic

a. The aircraft must have a flight plan in main memory, and must **NOT** be in one of the following statuses: NONE, HOLD, DELAY or SUSPEND.

b. The Route Display action is rejected when the request is for a proposed flight plan and field 49 is included in the request.

c. If two or more flight plans (active and/or proposed) exist in main memory with the same Aircraft Identification (AID), the Aircraft Identification cannot be used as the flight identification.

d. (R-position input) The Route Display action is ignored and on response is given if it is entered when an operational level of FDP is selected by the Surveillance Tie-Off message; a rejection message is generated when an operational level of RD1 is selected.

e. (D-position input) The Route Display action is rejected if it is entered when an operational level of either FDP or RD1 is selected by the Surveillance Tie-Off message.

f. Error Indicators

FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF
ILLEGAL FLIGHT ID
PVD NOT CONFIGURED (D-position input)
ROUTE NOT DISPLAYABLE
TENTATIVE FP STORAGE

6.9.3 Processing

a. For an active flight plan, if not time (field 49) is entered, the time (field 49) data will be set equal to the Unspecified Route Display Time (URDT).

b. The flight plan position symbol and line segments will remain on the Situation Display for the Route Display Request Interval (RDRI).

c. The requesting sector can enter up to two more Route Display Requests during the time that the first is being displayed. The RDRI timeout of the last one displayed will be used to determine display duration for all (i.e., all will be displayed until the last one is timed out).

d. The messages required to display the requested route will be addressed to the requesting sector's Situation Display. When RDRI expires, the display will be deleted unless a second route has been requested and RDRI timeout is reinitiated (three routes can be displayed concurrently).

e. If only field 01 is entered, all routes currently being displayed will be deleted.

f. If a route display is entered containing only a field 02 for an aircraft whose route is currently being displayed, the display of that route will be deleted.

g. If a field 49 is entered, the portion of the route displayed will be from the present position of the flight plan to the extrapolated position after the entered route display time parameter. If the last converted fix, a hold fix, a delay fix, or the limit of the Situation Display geographical viewing area of the entering sector is encountered prior to the entered route display time parameter, the display will be terminated at that fix/point.

h. If a Route Display is entered containing both a field 49 and a field 02 for an aircraft whose route is currently being displayed, the old Route Display for that flight will be deleted and a new display will be output per paragraph g above.

i. When a Route Display is entered for an aircraft whose route is not currently being displayed and three Route Displays are currently being displayed, the oldest Route Display will be replaced.

6.9.4 Resultant Outputs

For an active flight plan, the route will be displayed on the requesting sector's Situation Display in line segments from the extrapolated flight plan position of the specified aircraft to a point on the route determined by Route Display Time minutes, Unspecified Route Display Time (URDT) parameter minutes, or limits.

If the route display is entered for a proposed flight plan, the flight plan position symbol will be displayed on the requesting sector's Situation Display at the flight plan's departure point.

6.10 INTERIM ALTITUDE (QQ)

This action is used to control the storage and display of interim altitude. The sector having track control or displaying an Interfacility Point Out data block can add or delete an interim altitude, add an interim altitude as a reported altitude, or modify the existing interim altitude. Interim altitudes will be displayed in track data blocks or hold list entries, as applicable, and will be used in certain cases for slant range correction and conflict alert.

6.10.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 (76) (02)

b. Field Contents

01 Message Type (QQ)
02 Flight Identification
76 Interim Altitude Data

c. Examples

QQ COA14
QQ 230 JAMBO23
QQ R200 315
QQ 110 (TBE)

d. Error Indicators

ALT FORMAT
(cofie) FORMAT
FLID FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input)

6.10.2 Logic

a. An Interim Altitude action will be rejected while flight is in handoff status.

b. An Interim Altitude action specifying a flight for which a track data block is not being suppressed or the track data block or hold list entry is not being displayed at the entering sector is rejected.

c. An Interim Altitude action to delete the Interim Altitude and no Interim Altitude is displayed will be rejected.

d. Error Indicators

FUNCTION TIED OFF (D-position input)
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
NO TRACK
NO TRACK DATA BLOCK
AC IN HANDOFF
NOT YOUR CONTROL
NO ALTITUDE
PVD NOT CONFIGURED (D-position input)
SECTOR dd HAS CONTROL

6.10.3 Processing

There are three options available using the Interim Altitude action.

FIELD	CONTENTS
Insert Interim Altitude	ddd
Insert Interim Altitude and use as Reported Altitude	Rddd
Delete Interim Altitude (adapted or manually entered)	

Only one option is acceptable per entry. When the insert interim altitude option is selected, the entered data will be used for display and, in certain cases, for slant range correction and conflict alert. If the insert and report (R qualifier) is selected, the entered data will be used for display and as a reported altitude.

If the delete option is selected, the stored and displayed interim altitude will be deleted.

6.10.4 Resultant Outputs

a. If the input message contains an interim altitude, it will replace the assigned altitude field and a "T" will replace other data in the B4 position at all sectors displaying a data block for this track. In addition, if an R qualifier is selected, the Reported Altitude field in the track data blocks for this track will be replaced with the Interim Altitude entered.

NOTE: Any change of the interim altitude display through use of field 76 by the sector controlling the aircraft will be duplicated at all other sectors displaying the track data block.

b. If the message contains the option to delete interim altitude data, the assigned altitude will be displayed and the B4 character will return to normal.

c. A Hold List entry will display the Interim Altitude, suffixed with a "T" if Interim Altitude is available.

6.11 SUPPRESS/REQUEST CONFLICT ALERT PAIR (CO)

This action is used to suppress or request the display of data blocks that are blinking and forced at a sector as a result of Conflict Alert.

6.11.1 Format

a. Fields

DEVICE	FIELDS
R-position	01 65
D-position	01 02 02

b. Field Contents

01 Message Type (CO)
02 Flight Identification
65 Trackball Coordinates

Field 2 format may be one of the following:

1. Aircraft identification La(a)(a)(a)(a)(a)
2. Computer identification dda
3. Discrete beacon code dddd
4. MCI Identification (MID) dLd

c. Examples

CO (TBE)
CO 2411 N512
CO AAL10 586

d. Error Indicators

cofie FORMAT
FLID FORMAT
FLID NOT STORED
ILLEGAL FLIGHT ID
MESSAGE TOO LONG
MESSAGE TOO SHORT
NO TB FLIGHT ID CAPTURE (R-position input)
NOT A VALID LIST ID (R-position input)

6.11.2 Logic

a. A Suppress/Request Conflict Alert Pair Action is rejected if the aircraft are involved in an Immediate Alert and any one of the following conditions exist:

1. The sector taking the action has control of either aircraft.

2. In the case of a handoff, the sector taking the action is the intended receiving sector of either aircraft.

3. Either aircraft is physically located in the sector taking the action.

b. (D-position input) When referencing a Conflict Data Block (CDB) associated with an IFR in hold, the only allowable elements for Field 02 are AID and CID.

c. (D-position input) When referencing a CDB that is not associated with an IFR in hold, the only allowable element for Field 02 is the MID.

d. Error Indicators

DUPLICATED ACTION
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
ILLEGAL
INVALID COMBINATION
NO TRACK
NOT YOUR CONTROL
PVD NOT CONFIGURED

6.11.3 Processing

For the purposes of Conflict Alert processing, tracks in Interfacility Point Out status are considered to be controlled. If one of the aircraft in the suppressed pair is an Intruder track, the display change will remain in effect until the two aircraft are no longer determined to be in conflict by the Conflict Alert Processor. If both aircraft in the pair are controlled tracks, the display change will remain in effect until the two aircraft involved are no longer in conflict as determined by the Conflict Alert Processor, or the two aircraft involved are made members of the same group by a Group Suppression action.

If the two controlled aircraft are being suppressed by this action and they become involved in an Immediate Alert configuration, both data blocks will be forced and resume blinking at the appropriate sector(s). The Suppress symbol (⧖) preceding the pair identification in the Tab list will remain unchanged. If a CO Message is entered for the Immediate Alert Pair subsequently, it will be considered a Suppress action. The blinking of both full data blocks will cease and the Suppress symbol (⧖) preceding the pair identification in the TAB list will remain unchanged.

If a controlled track or an MCI track associated with a controlled track in Hold is part of the alert pair being suppressed by this action and either track was previously not physically in the sector's airspace but now penetrates the sector's airspace, the alert will be unsuppressed and both data blocks will be redisplayed, if not already displayed, with the appropriate blinking status.

6.11.4 Resultant Outputs

a. When applying a Suppress action to a conflict pair involving two controlled tracks, the blinking of both full data blocks will cease only at the console taking the action. If one or both full data blocks were routed to the console only for Conflict Alert, they will be removed from display. When applying a Suppress action to a conflict pair involving one controlled track and one intruder track, the blinking aircraft identification in the FDB for the controlled track will cease at the console taking the action. If the FDB was routed to the console only for Conflict Alert, it will be removed from display. The Tab list for the pair will remain on the display, and the period (.) preceding the pair identification will be changed to a Suppress symbol (⧖).

b. If the Request display action is taken, both data blocks will be forced and resume blinking, and be routed to the console, if not normally displayed there. In the case of an MCI alert, the AID fields of both data blocks will resume blinking, and the MID or CID will again be displayed. The leader length and offset direction will return to the values they were before the Suppress action, unless they were changed during suppression, in which case the current offset values will remain. The Suppress symbol (⧖) preceding the pair identification in the Tab list will be replaced by a period (.).

6.12 GROUP SUPPRESSION (SG)

This action is used to suppress the Situation Display output of Conflict Alert displays associated with tracks purposely operating within the minimum separation parameters of the conflict alert function. Variations of the Group Suppression message are used to:

a. Establish and suppress a group at a sector.
b. Suppress an existing group at a sector.
c. Delete an existing group at a sector.
d. Add or delete members of an existing group.
e. Request a Flight Strip Printer (FSP) printout of the content of a group.

Conflict Alert displays consist of the Conflict Alert list, blinking full data blocks, and forced blinking full data blocks.

6.12.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 (36) (81) (02)…(02)

b. Field Contents

01 Message Type (SG)
36 Action Indicator
81 Group Identification Number (GID)
02 Flight Identification (Trackball enter is not legal)

c. Action Indicator

The action indicator field (36) may be one of the following:

A To establish a suppress group, add a member to an existing suppress group, or add a previously established group to a new sector. A is assumed if no action indicator is included.

D To delete a member from an existing suppress group, or delete a group from a sector.

P To request an FSP printout of the members of a suppress group.

The group identification number (two digits), refers to an existing suppress group. This number is assigned by the computer when a group is established and is required for all subsequent inputs.

The flight identification refers to active flight plans. They are formatted as follows:

1. Aircraft identification La(a) (a) (a) (a) (a)
2. Computer identification dda
3. Discrete beacon code dddd

A maximum of fifteen (15) flight plans are allowed per group.

d. Error Indicators

An SG message will always generate either an accept or reject response. The following general error indicators are used for the Group Suppression (SG) message fields:

1. Source

SECTOR NOT ACTIVE
FUNCTION TIED OFF
PVD NOT CONFIGURED

2. Action Indicator

   INVALID ACTION TYPE

3. Group Identification

   INVALID GROUP ID

4. Flight Identification

   FLID DUPLICATION
   FLID FORMAT
   FLID NOT STORED
   FLIGHT NOT ACTIVE
   FORMAT
   ILLEGAL FLIGHT ID

5. General

   MESSAGE TOO LONG
   MESSAGE TOO SHORT

6.12.1.1 Message Examples

a. To initialize and suppress a new group:

   SG (A) FLID1… FLID7

A suppressed group is started at the R-position associated with the entering sector The group is comprised of FLID1…FLID7. Error indicators associated with this action include the following:

   NO ENTRIES AVAILABLE
   TOO MANY FP
   MESSAGE TOO SHORT
   FLID DUPLICATION

b. To add members to an existing group which is suppressed at the entering sector:

   SG (A) dd FLID1 FLID2

Aircraft FLID1 and FLID2 will be added to the existing group whose group ID is dd. The sector entering the action must have track control of the aircraft added to the group. Error indicators associated with this action include the following:

   NO TRACK
   NOT YOUR CONTROL
   ILLEGAL SOURCE
   DUPLICATION
   TOO MANY FP
   FLID DUPLICATION
   AID UPDATES PENDING

c. To suppress an existing group at a new sector:

SG (A) dd

The existing group represented by dd is suppressed at the entering sector. Error indicators associated with this action include the following:

TOO MANY SECTORS
ALREADY SUPPRESSED

NOTE: A maximum of six (6) sectors may have a group simultaneously suppressed.

d. To delete members from an existing group which is suppressed at the entering sector:

SG D dd FLID1 FLID2

Aircraft FLID1 and FLID2 will be deleted from the group whose group ID is dd. The sector entering the action must have track control of the aircraft deleted. Error indicators associated with this action include the following:

NO TRACK
NOT YOUR CONTROL
ILLEGAL SOURCE
ILLEGAL FLIGHT ID
FLID DUPLICATION
AID UPDATES PENDING
TOO MANY FP

e. To request a printout of an existing suppress group:

SG P dd

The members of the group represented by dd will be printed out at the FSP associated with the entering sector. Error indicators associated with this action include the following:

MESSAGE TOO SHORT
MESSAGE TOO LONG

f. To unsuppress a group:

SG D dd

The group represented by dd is no longer suppressed on the Situation Display associated with the entering sector. Error indicators associated with the action include the following:

ILLEGAL SOURCE

6.12.2 Logic

1. The Group Suppression action is rejected if it is entered when the Conflict Alert function is off for the center or entering sector.

2. The Group Suppression action is rejected if it is entered with the aircraft identity of an intruder track. Intruder tracks have no stored flight IDs and cannot be involved in a group suppression. The full data block of the controlled track and the conflict data block of the intruder track will continue to blink an alert if the controlled track aircraft is part of a group suppression with another controlled track for as long as it remains in conflict with the intruder track.

6.12.3 Processing

a. If the Group Suppression action is used to initialize and/or suppress a group, Conflict Alert displays associated with conflicts between (or among) group members are deleted and/or suppressed at the sector(s) entering the action. Outstanding suppress Conflict Alert pair (CO) messages for group pairs are dropped at these sectors.

b. If the Group Suppression action is used to unsuppress a group, Conflict Alert displays associated with conflicts between (or among) group members will be displayed at the sector entering the action. If the group was suppressed at only the sector which entered the unsuppress action, the group will be deleted and the group identification number made available for re-assignment after HG Entry Timeout (HGTP) seconds.

c. If the Group Suppression action is used to delete aircraft from an established group, and this action reduces the group to less than two aircraft, the group is deleted and the group identification number made available for re-assignment after HGTP seconds.

d. When subsequent actions such as automatic dropping of flight plans, remove strip actions resectorization, and Conflict Alert OFF cause the deletion of an initialized group, the group identification number will be made available after HGTP seconds.

6.12.4 Resultant Outputs

Outputs associated with the Group Suppression action are option-dependent and include:

a. Tabular List
b. Flight Strip Printer
c. D-CRD View Updates
d. High-Speed Printer
e. DARC Transmissions

6.12.4.1 Initialize and/or Suppress

If the Group Suppression action is used to initialize and/or suppress a group, the following outputs result at the sector entering the action:

a. A Group Suppression tabular list will be routed to the Situation Display associated with the sector entering the action. If this list is already being displayed, a new entry for the suppressed group will be created.

b. A Flight Strip Printer (FSP) listing of the group identification and composition will be output at the FSP associated with the sector entering the action.

6.12.4.2 Group Additions

If the Group Suppression action is used to add aircraft to an established group, an FSP listing of the updated group composition will be output at the FSP associated with each sector that has the group suppressed. The FSP listing will contain the incremented revision number.

6.12.4.3 Group Deletions

If the Group Suppression action is used to remove aircraft from an established group, an update containing the computer ID of each aircraft removed will be routed to the D-CRD View associated with each sector that has the group suppressed. The update will contain the incremented revision number. This update is not output if the deletion action reduces the group to less than two (2) aircraft.

6.12.4.4 Group Unsuppress

If the Group Suppression action is used to unsuppress a group, the Group Suppression List will be removed, and Conflict Alert displays associated with conflicts between (or among) group members will be unsuppressed at the sector entering the action.

6.12.4.5 Group Printout Request

If the Group Suppression action is used to request an FSP listing of a group, a listing with the current revision level will be output at the FSP of the sector entering the action.

6.13 E-MSAW ALERT SUPPRESSION/RESTORE (ES/EI)

The Alert Suppression/Restore message may be one of two types:

a. (ES) Specific E-MSAW Alert Suppression
b. (EI) Indefinite E-MSAW Alert Suppression

The Specific E-MSAW Alert Suppression (ES) message provides a means of suppressing or restoring the display of a specific E-MSAW alert for a single track within a center. The indefinite E-MSAW Alert Suppression (EI) message provides a means of suppressing or restoring the display of any alert for a single track within a center.

6.13.1 Format

a. Fields

The legal sources and fields of the ES/EI messages are:

DEVICE	FIELDS
R-position and D-position	01 85 02

Field 85:

The E-MSAW OAK #6 message indicator may be either of the following:

1. *I (Indefinite suppress)

2. *S (Specific suppress)

b. Field Contents

01 Message Type (CO)
02 Flight Identification
85 E-MSAW OAK #6 message indicator (*S/*I)

c. Example

CO *I (TBE)

CO *S N512

d. Error Indicators

FLID FORMAT
cofie FORMAT
MESSAGE TOO SHORT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE

6.13.2 Logic

At entry, the status of the individual track is reversed. If E-MSAW alerts were suppressed, they are restored. If alerts were not suppressed, they are now. If the E-MSAW function is OFF, the following error indicator is returned:

ILLEGAL

If E-MSAW display output routing for the entering sector is off, the following error indicator is returned:

ILLEGAL

If specific E-MSAW alert suppression is requested for a track and there is no E-MSAW alert for that track, the following error indicator is returned:

NO VIOL IN EFFECT

If field 02 references a flight which is in Interfacility Point Out status, the following error indicator is returned:

AC IN INTERCTR POINTOUT

The sector entering this message must have track control or the message is rejected and the following error indicator is returned:

NOT YOUR CONTROL

If specific E-MSAW alert suppression (ES) is requested for a track that is already in E-MSAW indefinite suppression (EI), the following error indicator is returned:

ALREADY SUPPRESSED

6.13.3 Processing

An acceptable ***S/*I** message will be one of the following types and result in the following processing.

6.13.3.1 Suppress Alert Display

The content of the message will be:

*S FLID
*I FLID

If an E-MSAW alert is currently being displayed, all other E-MSAW alert displays for the specified flight at the entering sector are deleted with the exception of the letters, “MOFF” or “MIFF” in Field E of the FDB. If the entered message was *S, display “MOFF” in Field E of the FDB. If the entered message was *I, display “MIFF” in Field E of the FDB.

Suppressed E-MSAW alerts are also restored. The “MOFF” or “MIFF” is deleted from Field E of the FDB. An E-MSAW alert will be displayed if the indicated aircraft is currently subject to an alert. All E-MSAW alert displays for the specified flight at the entering sector are enabled.

6.13.4 Resultant Outputs

An acceptable ***S/*I** message results in the processing described in paragraph 6.14.3 below.

6.14 E-MSAW VFR PROCESSING (EV)

The E-MSAW VFR Processing (EV) message provides a means to enter/delete a VFR track into/from E-MSAW processing. VFR tracks are ordinarily not processed by E-MSAW unless specifically requested.

6.14.1 Format

a. Fields

The legal sources of the EV messages are:

DEVICE	FIELDS
R-position and D-position	01 85 02

b. Field Contents

01 Message Type (CO)
02 Flight Identification
85 E-MSAW OAK #6, Message Indicator

c. Example

CO *VO N34RF
CO *VF N23TJ

d. Error Indicators

cofie FORMAT
FLID FORMAT
MESSAGE TOO SHORT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE

6.14.2 Logic

If a logic error is found for the specified flight or the entering sector, one of the following error indicators is returned.

AC IN INTERCTR POINTOUT
FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
NO TRACK
NOT YOUR CONTROL

6.14.3 Processing

An acceptable EV message will be one of the following types and result in the following processing.

6.14.3.1 Enter a VFR Flight

Enter a VFR flight for E-MSAW processing. The content of the message will be:

CO *VO FLID

The specified flight is processed and subject to display of E-MSAW alerts using the same criteria as an IFR flight.

6.14.3.2 Delete a VFR Flight

Delete a VFR flight from E-MSAW processing. The content of the message will be:

CO *VF FLID

The specified flight is removed from E-MSAW processing consideration. Any current E-MSAW displays for the specified flight are deleted.

6.14.4 Resultant Outputs

An acceptable EV message results in a specified flight being entered into or deleted from E-MSAW processing, as indicated by the E-MSAW VFR status item in the TK Table. An accept response will also be routed to the entering sector's Computer Readout Device.

6.15 METER FIX/OUTER FIX SECTOR METERING LIST ENTRY SUPPRESSION (QP)

This action is used to suppress the display of the entered aircraft from the meter fix or outer fix sector metering list.

6.15.1 Format

a. Fields

DEVICE	FIELDS
R-position or D-position	01 61 02 (02). . . (02)

NOTE: A maximum of five field 02s may be entered in one message.

b. Field Contents

01 Message Type (QP)
61 List Display Identifier (M)
02 Flight Identification (AID, CID or discrete beacon code)

c. Examples

QP M UAL742
QP M 312 5201 AAL2

d. Error Indicator

REJECT - cofie FLID FORMAT

6.15.2 Logic

a. The List Display Identifier must be "M."

b. The entered aircraft must already be displayed in the metering list of the sector entering of the message.

c. The entered beacon identification must be a discrete code.

d. If the sector list is for an internal ASP airport, metering processing must be in effect.

e. Error Indicators

REJECT - UNIDENT ACTN
REJECT - ALREADY SUPPRESSED
REJECT - ILLEGAL FLIGHT ID
REJECT - FUNCTION TIED OFF

6.15.3 Processing

Upon acceptance of the message, the entered aircraft will be deleted from the ASP metering list of the sector that entered the message. After an entry has been deleted from a sector metering list, it cannot be recalled manually. However, it will be automatically redisplayed if the associated Meter Fix Time (MFT) or Outer Fix Time (OFT) changes by one or more minutes and if one of the following applies:

a. For meter fix lists, parameter SLDI has not expired.

b. For outer fix lists, current clock time is earlier than either the last previously calculated or currently calculated OFT.

6.15.4 Resultant Outputs

This action will result in the suppression of the entered aircraft from the metering list of the sector that entered the message.

6.16 DISTANCE REFERENCE INDICATOR (HALO) REQUEST/DELETE (QP)

This action is used to request or delete the display of the halo around selected correlated radar targets.

6.16.1 Format

Adapted display filter key must be active to display.

a. Fields

DEVICE	FIELDS
R-position or D-position	01 64 02

b. Field Contents

01 Message Type (QP)
64 Action Type (J)
02 Flight Identification

c. Examples

QP J AAL55
QP J 2411
QP J (TBE)

d. Error Indicators

FLID FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (R-position input)

6.16.2 Logic

a. A request for a halo can only be made by the sector having track control.

b. A halo may be initiated only on an aircraft that is currently being tracked.

c. A request for a halo cannot be honored for an aircraft whose extrapolation status and/or track maneuver status is hold.

d. There is an adapted maximum limit to the number of halos which may be displayed at any one time.

e. Error Indicators

AC IN HOLD STATUS
AC NOT TRACKING
DYSIM DR15 INELIGIBLE
FLID DUPLICATION
FLIGHT NOT ACTIVE
FLID NOT STORED
MAX DYSIM DRIs EXCEEDED
MAX DRIs EXCEEDED

NO TRACK
NOT YOUR CONTROL
NOT A VALID LIST ID
REJECT - UNIDENT ACTN

6.16.3 Processing

a. A halo is displayed around the specified tracked target and is parameter Distance Reference Indicator Radius (DRIR) nautical miles in radius. The halo moves with the target, giving controllers a visual reference for radar separation.

b. When an aircraft is handed off to another sector, the halo remains on the sending sector's Situation Display while the receiving sector is eligible to display a halo around the same target.

c. Once a halo has been displayed at a sector, it will remain until a delete command is entered, the FDB is dropped after handoff has been accepted and this sector has lost track control, the aircraft enters into a HOLD status, the track is dropped, or the track mode changes to coast. A halo can be displayed at a maximum of three Situation Displays at any one time for the same tracked target only if three halos may be displayed for the same tracked target. A fourth request for halo will result in the deletion of the oldest halo.

d. The display of the halo on a specific Situation Display can be selected or deselected via an adapted filter key.

e. The brightness of the halo is adjustable in conjunction with the Full Data Block brightness settings.

f. The halo is recovery recorded and is re-established after a NAS startover. The halo is re-established after the target is considered a tracked target. This may take up to ten subcycles (1 minute). If after ten subcycles the target is not tracked, the halo is not re-established and a new request for a halo must be entered by the controller.

6.16.4 Resultant Outputs

If a halo is currently not being displayed for the track at the requesting sector and the sector has track control, a halo is displayed. If a halo is currently being displayed for the track at the requesting sector, it is deleted.

6.17 LONGITUDINAL SCALE (DSR) (LS)

This message is used to display, move, and delete a longitudinal scale on the Situation Display. The location, length, and orientation of the longitudinal scale may be specified as part of the display action. One longitudinal scale may be displayed on the Situation Display. When a longitudinal scale is moved, the orientation may also be changed.

6.17.1 Format

a. Fields

POSITION	FIELDS	PROCESSING
R-position	01	Display
R-position	01 200	Display
R-position	01 200 201	Display
R-position	01 201 202	Display
R-position	01 201	Display
R-position	01 200 201 202	Display
R-position	01 200	Modify Length
R-position	01 201	Move
R-position	01 201 202	Move
R-position	01	Delete

b. Field Contents

201 Length in Nautical Miles*
201 Location
202 Orientation

*If a length of 0 is entered, the longitudinal scale will be deleted.

c. Examples

LS
LS 20
LS (TBE)
LS (TBP) TBE)
LS 10 (TBP) (TBE)
LS 5 (TBE)

d. Error Indicators

TOO MANY FIELDS ENTERED
FIELD IN ERROR - ENTER VALID LENGTH: (D)D (0-20)
FIELD IN ERROR - ENTER VALID LOCATION OR ORIENTATION PICK
FIELD IN ERROR - ENTER VALID ORIENTATION PICK

6.17.2 Logic

a. The Longitudinal Scale action is rejected if security is enabled and no one is logged in at the position.

b. Error Indicators

LS MESSAGE FAILED - LOG IN REQUIRED

6.17.3 Processing

No special processing.

6.17.4 Resultant Outputs

The longitudinal scale will be displayed at the location orientation or length specified in the message entry, or at an adapted default location, orientation or length if one is not specified in the message entry.

If the length (field 200) specified in the message entry would cause the longitudinal scale to exceed the Situation Display boundaries, as much of the longitudinal scale as possible will be displayed.

If the message entry is to modify the length of an already displayed longitudinal scale, it will be modified to reflect the length (field 200) specified in the message entry.

If the message entry is to move a longitudinal scale, it will be displayed at the location (field 201) specified in the message. The length will be maintained. The longitudinal scale will be displayed in the orientation (field 202) specified in the message entry. If orientation (field 202) is not specified in the message entry, the orientation of the longitudinal scale before it was moved will be maintained.

If the message entry is to delete the longitudinal scale, it will be removed from the display.

The number of nautical miles represented by the longitudinal scale will not change when the Situation Display range is modified. In this case, the absolute length of the longitudinal scale (in terms of inches on the display surface) will change in order to maintain the longitudinal scale length in nautical miles.

The location of the longitudinal scale in reference to its location on the display surface will not change as the Situation Display map is offset. As such, the longitudinal scale cannot be offset out of view when a map is offset at the Situation Display.

6.18 QUICK LOOK (DSR) (QL)

This message is used to display full data blocks for all aircraft eligible for display as full data blocks at another sector (except full data blocks displayed at the other sector only as a result of a quick look action by the other sector). A sector may quick look no more than five other sectors at any time. This message is also used to cancel a quick look.

6.18.1 Format

a. Fields

DEVICE	FIELDS
R-position	01 214 (214) (214) (214) (214)*
R-position	01

*Duplicate sector identifications (field 214) within a message entry (e.g., QL 353526) will be ignored and will not count against the limit of five sectors being quick looked at a time.

b. Field Contents

01 Message Type (QL)
214 Sector Identification

c. Examples

QL 35
QL 40 41 23 15 12
QL

d. Error Indicators

TOO MANY FIELDS ENTERED
FIELD IN ERROR - ENTER VALID SID: (D)DD (01 - 118)

6.18.2 Logic

a. The Quick Look action is rejected if:

1. It would result in more than five sectors being quick looked.
2. It would result in a single sector being quick looked by more than nine sectors.
3. A live sector attempts to quick look a training sector.
4. A training sector attempts to quick look a live sector.
5. A sector tries to quick look itself.
6. The quick look cannot be initiated either to Host or to DSR.
7. Security is enabled and no one is logged in at the position.
8. The Quick Look action is sent to Host and it would result in a single sector being quick looked by more than nine sectors.

b. Error Indicators

MAX NUMBER OF SECTORS EXCEEDED FOR QUICK LOOK
SECTOR <ddd> ALREADY QUICK LOOKED BY MAX NUMBER OF SECTORS
CANNOT QUICK LOOK TRNG SECTOR
CANNOT QUICK LOOK LIVE SECTOR
CANNOT QUICK LOOK YOUR OWN SECTOR
QUICK LOOK NOT AVAILABLE AT THIS TIME
QL MESSAGE FAILED - LOG IN REQUIRED
REJECT - RESOURCES UNAVAILABLE

6.18.3 Processing

a. All full data blocks displayed at the target sector will be displayed as full data blocks at the sector requesting the quick look.

b. If the message is entered, and another sector is already being quick looked, the sector already being quick looked plus the sector(s) (field 214) specified in the message will be quick looked.

c. If the message is entered with a sector identification (field 214) for a sector that is already being quick looked, that sector will continue to be quick looked.

d. If the message is entered without any sector identifications (field 214), the quick look action will be canceled with all sectors.

6.18.4 Resultant Outputs

The requesting sector will display quick look full data blocks on the SD based on the range, map offset, and filter settings at the requesting sector. The sector requesting the quick look may not see all full data blocks addressed to the target sector because of these settings.

When a quick look results in multiple full data blocks for the same flight (CID), the entering sector's full data block and one quick look full data block will be displayed for that CID. When these two full data blocks are offset to the same direction and leader length, the entering sector's full data block will be emphasized with increased brightness.

When full data blocks for different flights (different CIDs), including those resulting from a quick look action, have the same offset and leader length, no special emphasis will be applied to full data blocks.

Full data blocks that are the result of normal routing may be individually offset from those that result from a quick look. When the user cancels a quick look, the full data blocks that were displayed as a result of the quick look action are removed from the Situation Display at the requesting sector.

7.0 INFORMATION REQUEST MESSAGES

The following Information Request Messages can be found in this section:

7.0 INFORMATION REQUEST MESSAGES

Information request messages are used to request a display or printout of data from the established database.

7.1 ALTIMETER REQUEST (AR or QD)

The Altimeter Request Message is used to request or suppress a display or to request a printout of altimeter data for specified adapted altimeter reporting stations.

7.1.1 Format

a. Fields

DEVICE	FIELDS
A-position	(01) (13) (13)… (13) (AR message)
D-position	(01) (13) (13) (13) (13) (16) (AR message)
R-position or D-position	(01) (13) (13) (13) (13) (13) (13) (QD message)

b. Field Contents

01 Message Type - QD (R-position or D-position console)
- AR (non-DEC Input)

13 Location Identifier
16 Output Routing (P) (AR message at D-position only)

c. Examples

QD
QD RIO
QD DCA IAD BAL RIG ORF PHF
AR DCA RIO P (D-Position Input)
AR DCA

d. Error Indicators

cofie FORMAT (QD message Input)
REJECT - cofie INCORRECT ROUTING (D-Position Input of AR message)
REJECT - cofie FORMAT (AR message Input)
REJECT - MESSAGE TOO LONG (AR message Input)
REJECT - MESSAGE TOO SHORT (AR message Input)

7.1.2 Logic

a. If any location identifier is not an adapted altimeter reporting station, the entire message will be rejected. (Applies to AR message input only.)

b. If one or more of the locations identified has no setting stored, the controller will be notified, but the message will not be rejected.

c. The Altimeter Request Action is ignored and no response is given if it is entered when Surveillance Tie-Off is in effect. (Applies to R-position input only.)

d. Error Indicators

REJECT - cofie NON-ADAPTED STATION (AR message Input)
NON-ADAPTED STATION (QD message Input)
PVD NOT CONFIGURED (D-position Input of QD message)

7.1.3 Processing

The requested altimeter data will be output or the Altimeter Setting area of the D or R-CRD view will be cleared.

7.1.4 Resultant Outputs

The type of output is determined by the source and contents of the message, as follows:

a. If the AR message was entered from an A-position console:

AR 13 (13) (13) (13) causes the requested altimeter reporting station identifiers and their associated altimeter data to be printed on the FSP associated with the entering A-position. An accept response is also returned.

b. If the QD message was entered from an R-position or D-position console:

1. QD causes the Altimeter Settings area of the R-position CRD view associated with the entering sector to be cleared.

2. QD 13 (13) (13) (13) (13) (13) causes the requested altimeter reporting station identifiers and their associated altimeter data to be displayed on the R-position CRD view associated with the entering sector. The requested altimeter data replaces all altimeter data currently being displayed.

c. If the AR message was entered from a D-position console:

1. AR causes the Altimeter area of the CRD view associated with the entering D-position to be cleared.

2. AR 13 (13) (13) (13) causes the requested altimeter reporting station identifiers and their associated altimeter data to be displayed on the CRD view associated with the entering D-position. The requested altimeter data replaces all altimeter data currently being displayed on the CRD view.

3. AR 13 (13) (13) P causes the requested altimeter reporting station identifiers and their associated altimeter data to be printed on the FSP associated with the entering D-position. This format does not cause any modification of altimeter data currently being displayed on the associated D-CRD view. An accept response is also returned.

7.2 FLIGHT PLAN READOUT REQUEST (FR or QF)

The Flight Plan Readout Request message is used to request a display or printout of the specified flight plan as stored (fields 02 through 11), or just the ICAO Associated Data for the referent flight plan, as stored. In addition, this message can be used to request a printout of all stored data for the referent flight plan (fields 02 through 11 and the "ICAO Associated Data").

7.2.1 Format

a. Fields

DEVICE	FIELDS
D-position or A-position	01 02 (42) (16) (FR message)
R-position or D-position	01 (42) 02 (QF message)

b. Field Contents

01 Message Type - QF (R-position or D-position Input)
- FR (D-position or A-position Input)

02 Flight Identification
16 Output Routing (F) (FR message at D-position or A-position)

c. Examples

FR AA123
FR 123 P
QF NWA10
FR DAL137 I
FR 254 I P
QF I TWA444
FR I TWA176 C
FR 485 C P
QF C AAL444

d. Error Indicators

1. FR Message Input

REJECT - cofie FLID FORMAT
REJECT - cofie INCORRECT ROUTING
REJECT - ILLEGAL FLIGHT ID
REJECT - cofie INVALID ICAO SELECTION
REJECT - cofie FORMAT

When entered from a D-position or A-position:

(a) When fields 42 and 16 are both present and field 42 is not the letter "I" or "C," the following reject message is returned:

REJECT - cofie INVALID ICAO SELECTION

(b) When only one field is present following field 02 and it does not contain the letters "C," "I," or "F," the following reject message is returned:

REJECT - cofie FORMAT

2. QF Message Input

FLID FORMAT
ILLEGAL FLIGHT ID
NO TB FLIGHT ID CAPTURE (DEC input only)
INVALID ICAO SELECTION

7.2.2 Logic

a. (FR Message Input)

If the optional element, departure point, is included in the flight identification, it must be included in the flight identification match, i.e., it must match the first route element of field 10 for the referent flight plan.

b. (FR Message Input)

If more than one flight plan is found with the same flight identification, a list is returned containing computer identifications, departure points, and for proposed departures, the proposed departure times of all flight plans in main memory with matching aircraft identifications as part of the "auxiliary data" portion of the rejection message.

c. (R-position Input)

The Flight Plan Readout Action is ignored and no response is given if it is entered when an operational level of "FDP" is selected by the Surveillance Tie-Off message; a rejection message is generated when an operational level of "RD1" is selected.

d. (D-position Input of QF message)

The Flight Plan Readout Action is rejected if it is entered when an operational level of either FDP or RDI is selected by the Surveillance Tie-Off message.

e. (Beacon Code as Flight ID)

If a beacon code is entered as the FLID, it must have the status of an assigned Beacon Code.

f. Error Indicators

1. FR Message Input

REJECT - FLID NOT STORED
REJECT - cofie FLID DUPLICATION
REJECT - NO ICAO DATA
REJECT - cofie FLIGHT NOT ACTIVE
REJECT - (contents of field 02) TENTATIVE FP STORAGE

2. QF Message Input

FLID DUPLICATION
FLID NOT STORED
FLIGHT NOT ACTIVE
FUNCTION TIED OFF
PVD NOT CONFIGURED (D-position input)
NO ICAO DATA
TENTATIVE FP STORAGE

7.2.3 Processing

When field 42 (Flight Data Selection) is not entered, an acceptable input results in the display or printout of fields 02 through 11 of the filed flight plan. Program-inserted transitions from types 2 and 4 coded routes, DPs, and STARs are included, as is program-inserted incomplete route data. No elements are truncated. Adapted alphanumerics for applicable PDR, PAR, or PDAR are included, separated by a space and bracketed with plus signs (+). PDR and PDAR alphanumerics follow the first route element; PAR alphanumerics precede the destination fix.

When a QF message is input, the FP Readout Flag field in the resultant NAS Text Message Output message will be set to either a “1” or “2” for the following reasons:

1 - NAS Format FP Readout
2 - ICAO Format FP Readout (field 42 was entered)

The FP Readout Flag field will only be set for NAS Text Message Output messages to be displayed on the CRD view at a DSR R-position.

7.2.4 Resultant Outputs

a. FR Message Input

If the FR message is entered from a D-position or A-position and contains the Output Routing field (field 16), the output is printed on the FSP associated with the entering D-position or A-position. An accept response is returned to the associated CRD view. If no Output Routing field is included in the FR message, the output is displayed in the Response Area of the associated CRD view. If the output does not fit in the CRD view Response Area, as much as possible is displayed with an indication at the end of the display, which indicates truncation of the display and printing of the entire message on the associated FSR. If the FR message is entered from an FDEP keyboard, the entire readout is printed on the associated FDEP printer.

b. QF Message Input Display Output:

When the R-CRD MULTI-FR button is inactive (not gray background shaded) the Flight Plan Readout data will be displayed in the Response Area of the R-CRD view of the entering sector. If the referent flight plan is displayed on the R-position Flight Plan Readout view, it will be updated.

If the output does not fit in the R-CRD Response Area, as much as possible is displayed with a truncation indicator at the end of the display. However, in this case, the message will not be routed to an FSR.

Message Output:

When the FP Readout Flag field is set to a "1," a Flight Plan Fields Readout (MF) message will be transmitted to the R-position Flight Plan Readout view in addition to the NAS Text Message Output message to the R-CRD view of the entering sector. When the FP Readout Flag field is set to a "2," only the NAS Text Message Output message is transmitted to the R-CRD.

7.3 STRIP REQUEST (SR)

The Strip Request (SR) message is used to request the printing or reprinting, at the desired position, of one flight progress strip for the specified flight.

7.3.1 Message Content and Source

The following defines the legal sources and fields of the Strip Request message:

SOURCE	FIELDS
D-position or A-position	01 02 13 16

7.3.2 Acceptance Checking

The input message contains the message type designator, flight identification, fix identifier or strip number, and output routing field.

7.3.3 Format

7.3.3.1 Flight Identification (Field 02)

When intended as an aircraft identification and departure point, field 02 must be 2-20 characters in the following format:

La(a) (a) (a) (a) (a) (/aa(a) (a) (a) (a) (a) (a) (a) (a) (a))

The first element, aircraft identification, must be 2-7 alphanumerics, the first of which must be a letter.

The second element, the departure point, when present, must be separated from the first element by the element separator (/). The departure point must be 2-12 alphanumerics in the format specified for fix elements of field 10.

When intended as a Computer Identification Number (CID), field 02 must be two digits followed by a digit or letter. Thus:

dda

where "a" must not be the letter I or O.

If neither of the above formats is correct, the following Rejection message is returned:

REJECT - cofie FLID FORMAT

7.3.3.2 Field 13

When intended as a fix identifier, field 13 must contain 2-12 characters and must be one of the following types.

a. Fix only
b. Fix-radial distance
c. Lat/long

When field 13 is two digits, it is treated only as a strip number and must contain a value greater than 00.

If none of the preceding formats is satisfied, the following Rejection message is returned:

REJECT cofie INVALID FIX/STRIP NUMBER

7.3.3.3 Field 16

The output routing field must be one of the following:

a. dd Sector Identification
b. aaaL or aaaLaaa

where the first "aaa" is an approach control or tower identifier

"L' must be one of the following:

T - tower FDEP printer
D - approach control departure FDEP printer
A - approach control arrival FDEP printer
O - approach control overflight FDEP printer

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

c. LLL - Manual adjacent center

7.3.4 Logic

7.3.4.1 Field 02

If a Computer Identification Number (CID) is entered as flight identification (Field 02), the CID must currently be assigned to a flight plan resident in main memory. Otherwise, the following reject message is returned:

REJECT - cofie FLID NOT STORED

If an aircraft identification is entered, it must exactly match the identification of a flight plan currently residing in main memory. If the optional element, departure point, is included in flight identification, it must be included in the flight identification match, i.e., it must match the first route element of field 10 for the stored flight plan.

If the entered flight identification does not match the flight identification of any of the resident flight plans in main memory, the following Rejection message is returned:

REJECT - cofie FLID NOT STORED

If more than one such flight plan is found, the following Rejection message is returned:

REJECT - cofie FLID DUPLICATION

If the referent flight plan is a tentative flight plan, the following Rejection message is returned:

REJECT - (contents of field 02) TENTATIVE FP STORAGE

7.3.4.2 Field 13

For a proposed flight plan whose departure time is not within Departure Strip Printing Interval (DSPI) minutes of the present clock time, the requested fix must be the departure point. For a proposed flight plan whose departure time is within DSPI minutes of the present clock time, the requested fix must be currently stored for the referent flight. For an active flight plan, the requested fix must be an unexpired fix on the converted route of flight. An adapted substitute identity may be used to identify the fix. If none of the preceding requirements is met, the following rejection message is returned:

REJECT - cofie INVALID FIX

If a strip number is substituted for the fix element and it is currently unassigned for the flight, the following Rejection message is returned:

REJECT - cofie INVALID STRIP NUMBER

7.3.4.3 Field 16

The output routing field must contain the adapted identification of one of the following: active sector, adapted FDEP-equipped approach control or tower position, or manual adjacent center. Otherwise, the following rejection message is returned:

REJECT - cofie INCORRECT ROUTING

If the entered flight identification (field 02) is that of a SIM Flight, the output routing (field 16) must contain the identification of a sector configured for training. Otherwise, the above Rejection message is returned.

Strip Request messages are format and logic checked as specified in Acceptance Checking. An acceptable message results in the output of a single strip for the requested fix of the specified flight. For non-postable approach control fixes, the fields containing coordination information will be blank.

If the SR message is in error, a rejection message is returned.

If multiple occurrences of a fix exist in the converted route, the first occurrence at or beyond the reference fix is used.

7.3.5 Results

The format of the outputted strip is determined by the output device to which the strip is routed.

An accept response is returned to the entering source except when an FDEP routes a strip to itself.

7.4 UPPER WIND REQUEST (UR)

The Upper Wind Request (UR) message is used to request a printout of stored upper wind data for the specified reporting station.

7.4.1 Message Content and Source

The following defines the legal source and field of the UR message:

DEVICE	FIELDS
D-position or A-position	01 13

7.4.2 Acceptance Checking

The Upper Wind Request message contains the message type designator and a reporting station identifier.

7.4.3 Format

The location identifier (field 13) must contain 2-5 alphanumerics, or the following rejection message is returned:

REJECT - cofie NON-ADAPTED STATION

7.4.4 Logic

If the entered location identifier (field 13) is not in adapted wind tables, the following rejection message is returned:

REJECT - cofie NON-ADAPTED STATION

7.4.5 Processing

Upper Wind Request messages are format and logic checked as specified in Acceptance Checking. An acceptable message results in the stored wind data for the specified station to be printed at the entering KVDT or the CRD view associated with the entering D-position or A-position. If the UR message is in error, a rejection message is returned.

7.4.6 Results

The output consists of a printout of stored wind data for all altitudes at the specified station. The output is in the format of the input wind data, i.e., altitude/azimuth/speed. If complete wind data for the specified station has not been entered since startup, the output format will consist of adapted altitudes followed by blanks for any altitudes that have not had azimuth/speed information entered with a UW message.

7.5 WEATHER REQUEST (WR)

A Weather Request (WR) message is used to request a display or printout of stored weather data for specified adapted reporting stations or to enter a request/reply message to the Weather Message Switching Center (WMSC).

7.5.1 Message Content and Source

The following defines the legal sources and fields for a Weather Request message:

DEVICE	FIELDS
A-position	01 13 (13) (13)
D-position	01 (13) (13) (13) (16)

7.5.2 Acceptance Checking

The Weather Request (WR) message contains the message type designator and may contain one or more reporting station identifiers and an output routing field.

7.5.3 Format

If the last field in a message entered from a D-position console consists of one character, the field is considered a Field 16 and is checked as specified under Field 16 format checking. Otherwise, the last field in the message is checked as a Field 13.

7.5.3.1 Field 13

The location identifier (field 13) must contain 2-5 alphanumerics. Otherwise, the entire message is rejected and the following rejection message is returned:

REJECT - cofie NON-ADAPTED STATION

7.5.3.2 Field 16

The output of field 16 contains the letter "P." Otherwise, the entire message is rejected and the following rejection message is returned:

REJECT - cofie INCORRECT ROUTING

7.5.4 Logic

If any location identifier is not an adapted weather reporting station, the entire message is rejected and the following rejection message is returned:

REJECT - cofie NON-ADAPTED STATION

If more than one location identifier is entered for CRD view display or more than three location identifiers are entered for FSP or FDEP output, the entire message is rejected and the following rejection message is returned:

REJECT - MESSAGE TOO LONG

If "P" is entered without a weather reporting station from the D-position console, i.e., WR P, the entire message is rejected and the following rejection message is returned:

REJECT - MESSAGE TOO SHORT

7.5.5 Processing

Weather Request (WR) messages are format and logic checked as specified in Acceptance Checking. An acceptable message results in the output of stored weather data for the requested station. If the message is in error, a rejection message is returned to the entering device. The rejection message returned will be one of the above-mentioned messages.

7.5.6 Results

a. If entered from the A-position console:

   WR 13 (13) (13) causes the requested weather station identifier and weather data to be printed on the FSP associated with the entering A-position. An accept response is also returned.

b. If entered from a D-position console:

   1. WR causes the weather information on the CRD view associated with the entering D-position to be cleared.

   2. WR 13 causes the requested station identifier and weather data to be displayed on the CRD view associated with the entering D-position. The requested data replaces all weather data currently being displayed.

   3. WR 13 (13) (13) 16 causes the requested weather data to be printed on the FSP associated with the entering D-position. This format does not cause any modification of weather data currently being displayed on the associated CRD view. An accept response is also returned.

7.6 RADAR SORT BOX READOUT (KA)

This action is used to dynamically determine the assignment of radars to the radar sort box.

7.6.1 Format

a. Fields

DEVICE	FIELDS
R-position	01 65

b. Field Contents

   01 Message Type (KA)
   65 Trackball Coordinates

c. Error Indicators

   MESSAGE TOO LONG
   TB OUTSIDE ADAPTED AREA
   (cofie) FORMAT

7.6.2 Logic

The Radar Sort Box Readout action is ignored and no response is given if it is entered when Surveillance Tie-Off is in effect.

a. Error Indicator

ILLEGAL SOURCE

7.6.3 Processing

The requested radar sort box data will be displayed on the R-CRD view of the entering sector. The system X Y coordinates of the trackball entry will be used to determine in which radar sort box the trackball is positioned.

7.6.4 Resultant Outputs

A display containing the radar sort box number and the current radar assignments for that sort box, both search and beacon, will be routed to the R-CRD view of the entering R-position. If no site is currently assigned, the word "NONE" will be displayed.

7.7 TRACKBALL COORDINATES READOUT (KB)

This action is used to determine the system X, Y coordinates and the latitude and longitude coordinates of the entered trackball position.

7.7.1 Format

a. Fields

DEVICE	FIELDS
R-position	01 65

b. Field Contents

01 Message Type (KB)
65 Trackball Coordinates

c. Error Indicators

MESSAGE TOO LONG
(cofie) FORMAT

7.7.2 Logic

The TB Coordinates Readout action is ignored and no response is given if it is entered when Surveillance Tie-Off is in effect.

a. Error Indicator

ILLEGAL SOURCE

7.7.3 Processing

The requested trackball position is converted to system X, Y coordinates and latitude and longitude.

7.7.4 Resultant Outputs

A display containing the system X Y coordinates and the latitude and longitude of the requested TB position will be routed to the R-CRD view of the entering R-position.

7.8 RANGE/BEARING READOUT (LA)

A Range/Bearing Readout message may be entered through the "RNGBRG" Key, the Function Key #1, the R-position alphanumeric keyboard, and the trackball. This action is used on the R-CRD view to display the distance and bearing, either magnetic or true, between two points designated by trackball entries on a Situation Display. If the first trackball entry results in a Full Data Block (FDB) capture, the action will also display the track speed of the FDB and the flying time to the second trackball entry. If a speed is input with the message, this speed will be displayed as well as used to compute the displayed flying time between the two trackball entry points.

This action can also be used to display distance, true bearing, and Azimuth Change Pulses (ACPs) between a trackball entry point and an adapted radar site as entered on the R-position alphanumeric keyboard.

7.8.1 Format

a. Fields

DEVICE	FIELDS
R-position	01 65 (65) (40) (13)

NOTE: Either optional field 65 or 13 must be present, but not both; only when optional field 65 is used may optional field 40 be entered.

b. Field Contents

01 Message Type (LA)
65 Trackball Coordinates
40 True Bearing Indicator (T) and/or Input Speed (/dd(d)(d))
13 An identifier for an adapted radar site (LLL)

c. Examples

1.	LA	TBP (Trackball Pick)	TBE (Trackball Enter)	
2.	LA	TBP	T	KBENTER
3.	LA	TBP	T/55	KBENTER
4.	LA	TBP	/650	KBENTER
5.	LA	TBP (FDB)	TBE	
6.	LA	TBP (FDB)	T	KBENTER
7.	LA	TBP (FDB)	TBP T/9999	KBENTER
8.	LA	TBP	RSITE-ID	KBENTER

d. Error Indicators

cofie FORMAT
MESSAGE TOO LONG

7.8.2 Logic

a. The entered input speed must not be less than 55 knots or greater than 9999 knots.

b. The track speed of a captured FDB must not be less than 55 knots or greater than 3700 knots.

c. When the first trackball entry results in an FDB capture, the flying time to be displayed must not exceed 23 hours and 59 minutes.

d. The trackball entered coordinates must be within the radar sort box grid.

e. Field 13 must contain a valid identifier for an adapted radar site.

f. The calculated range to be displayed for the distance from a radar site to a trackball entry point must not exceed 9999 nautical miles.

g. Error Indicators

INVALID SPEEED
FLYING TIME GREATER THAN 24 HOURS
TB OUTSIDE ADAPTED AREA
SITE ID NOT ADAPTED
RANGE GREATER THAN MAX

7.8.3 Processing

For Range/Bearing (LA) messages that do not contain field 13, the range and bearing from the first trackball entry point to the second trackball entry point will be determined. If a "T" is entered via field 40, the bearing will be true; otherwise, the bearing will be magnetic and the magnetic declination (variation) applied will be derived from the adapted quadrant in which the first trackball occurred. Range will be determined to the nearest one-eighth mile and rounded to the nearest one-tenth mile for display.

If the first trackball entry results in a Full Data Block (FDB) capture, the track speed of the FDB will be displayed and used to determine the displayed flying time to the coordinates of the second trackball entry.

If a speed is input via field 40, any FDB capture is ignored and the first trackball entry will be treated as position coordinates only. The input speed will be displayed and used to determine the displayed flying time.

Flying time output will be to the nearest minute except that values in excess of 59 minutes will be in an hour-plus-minutes format. Leading zeros will be supplied for the minutes portion only.

For Range/Bearing (LA) messages that do not contain a valid field 13, the range and true bearing from the entered radar site to the coordinates of the trackball entry will be determined. Bearing information will be displayed to the nearest degree with leading zeros supplied and to the nearest Azimuth Change Pulse (ACP) without leading zeros. Range will be determined to the nearest one-eighth mile and output will be to three-decimal accuracy, including trailing zeros.

7.8.4 Resultant Outputs

If the Range/Bearing Readout message is accepted, the requested information will be output on the Response Area of the R-CRD view. If the message is not acceptable, a REJECT message will be output instead.

7.9 RANGE/BEARING/FIX READOUT (LB)

A Range/Bearing/Fix Readout message may be entered through the 'RNGBRG" Key, the Function Key #3, the R-position alphanumeric keyboard, and the trackball. This action is used on the R-CRD view to display the distance and magnetic bearing between a point designated by a trackball entry on a Situation Display and an entered adapted fix. If the trackball entry results in a Full Data Block (FDB) capture, the action will also display the track speed of the FDB and the flying time to the entered fix. If a speed is input with the message, this speed will be displayed and used to compute the displayed flying time between the trackball entry and the entered fix.

7.9.1 Format

a. Fields

DEVICE	FIELDS
R-position	01 68 65

b. Field Contents

01 Message Type (LB)
68 2-11 character alphanumeric fix, and optionally, a suffix of the format "/dd(d)(d)" to indicate input speed.
65 Trackball Coordinates

c. Examples

1.	LB	FIX	TBE
2.	LB	FIX/450	TBE
3.	LB	FIX	TBE(FDB)

d. Error Indicators

cofie FORMAT

7.9.2 Logic

a. The first 2-11 alphanumerics entered in field 68 must match a fix adapted in either the Substitute Fix record or the Fix record (not including latitude/longitude fixes or boundary crossing fixes).

b. The entered input speed must not be less than 55 knots or greater than 9999 knots.

c. The track speed of a captured FOB must not be less than 55 knots or greater than 3700 knots.

d. When the trackball entry results in an FDB capture, the calculated flying time to be displayed must not exceed 23 hours and 59 minutes.

e. The TB entered coordinates must be within the radar sort box grid.

f. The calculated range to be displayed must not exceed 9999 nautical miles.

g. Error Indicators

cofie NOT ADAPTED
INVALID SPEED
FLYING TIME GREATER THAN 24 HOURS
TB OUTSIDE ADAPTED AREA
RANGE GRTR THAN MAX

7.9.3 Processing

The range and magnetic bearing from the trackball entry point to the entered fix will be determined. The magnetic declination (variation) applied will be derived from the adapted quadrant in which the trackball occurred. Bearing information will be displayed to the nearest degree with leading zeros supplied. Range will be determined to the nearest one-eighth mile and rounded to the nearest one-tenth mile for display.

If the trackball entry results in a Full Data Block (FDB) capture, the track speed of the FDB will also be displayed and used to determine the displayed flying time from the trackball entry point to the entered fix.

If a speed is input in a field 68, any FDB capture is ignored and the trackball entry will be treated as position coordinates only. The input speed will be displayed and used to determine the displayed flying time.

Flying time output will be to the nearest minute except that values in excess of 59 minutes will be in an hour-plus-minutes format. Leading zeros will be supplied for minutes only.

7.9.4 Resultant Outputs

If the Range/Bearing/Fix Readout message is acceptable, the requested information will be output on the Response Area of the R-CRD view. If the message is not acceptable, a REJECT message will be output instead.

7.10 FIX/TIME READOUT (LC)

A Fix/Time Readout message may be entered through the "RNGBRG" Key, the Function Key #5, the R-position alphanumeric keyboard, and the trackball. This action is used on the R-CRD view to display the speed adjustment necessary to position the aircraft captured by the trackball entry over the entered fix at the entered time.

7.10.1 Format

a. Fields

DEVICE	FIELDS
R-position	01 68 65

b. Field Contents

01 Message Type (LC)
68 2-11 alphanumeric fix and a suffix of the format "/dddd" to indicate intended time of arrival over the entered fix
65 Trackball Coordinates

c. Examples

LC BUJ/1305 TBE(FDB)

d. Error Indicators

cofie FORMAT
NO TB FLIGHT ID CAPTURE

7.10.2 Logic

a. The first 2-11 alphanumerics entered in field 68 must match a fix adapted in either the Substitute Fix record or the Fix record not including latitude/longitude fixes or boundary crossing fixes.

b. The track speed of a captured FOB must not be less than 55 knots or greater than 3700 knots.

c. The trackball entered coordinates must be within the radar sort box grid.

d. The time element portion of field 68 must be at least three minutes but less than eight hours in the future.

e. The calculated speed adjustment must not be in excess of three digits.

f. Error Indicators

cofie NOT ADAPTED INVALID SPEED TB OUTSIDE ADAPTED AREA
cofie INVALID TIME SPEED ADJMT GRTR THAN MAX

7.10.3 Processing

The speed adjustment necessary to position the aircraft captured by the trackball entry over the entered fix at the entered time will be determined. Calculations will be based on a routing from the entered trackball coordinates direct to the coordinates of the entered fix. The speed required will be compared to the present track speed, and both the signed differential and the present track speed will be displayed. Speed output will be to the nearest knot.

7.10.4 Resultant Outputs

If the Fix/Time Readout message is acceptable, the requested information will be output on the Response Area of the R-CRD view. If the message is not acceptable, a REJECT message will be output instead.

7.11 ROUTE OF FLIGHT FIX/TIME READOUT (LD)

A Route of Flight Fix/Time Readout message may be entered through the "RNGBRG" Key, the Function Key #7, the R-position alphanumeric keyboard, and the trackball. This action is used on the R-CRD view to display the CTA at each postable fix on the aircraft's converted route of flight, starting with the track position and ending with the entered postable fix. If more than three postable fixes are processed for the message, the output is partially displayed on the R-CRD view and totally printed at the associated FSP.

7.11.1 Format

a. Fields

DEVICE	FIELDS
R-position	01 68 02

b. Field Contents

01 Message Type (LD)
68 2-11 character alphanumeric fix
02 Flight Identification

c. Examples

LC CYS AA123
LC MEM090010 1234
LD CAP 201

d. Error Indicators

1. Field 02 must be one of the allowable formats for input at the R-position. Otherwise, the following Rejection message is returned:

   FLID FORMAT

2. If Field 02 is entered as a trackball entry, it must capture a valid flight ID or the following Rejection message is returned:

   NO TB FLIGHT ID CAPTURE

3. If a nondiscrete beacon code is entered for Field 02, the following Rejection message is returned:

   ILLEGAL FLIGHT ID

4. Field 68 must be in the format "Fix" or "Fix Radial Distance" as defined in Appendix E. Otherwise, the following Rejection message is returned:

   cofie FORMAT

7.11.2 Logic

a. If the entered flight identification does not match the flight identification of a stored flight plan, the following Rejection message is returned:

   FLID NOT STORED

b. If the entered flight identification matches the flight identification of a stored flight plan, but the flight is not active, the following Rejection message is returned:

   FLIGHT NOT ACTIVE

c. If the entered flight identification matches more than one active flight plan, the following Rejection message is returned:

   FLID DUPLICATION

d. If the entered flight identification is a DYSIM flight and training is not authorized, the following Rejection message is returned:

   FLT NOT ELIGIBLE

e. The entered Field 68 fix name must match a fix in either the Substitute Fix record or the Fix record, not including latitude/longitude fixes or boundary crossing fixes. Otherwise, the following Rejection message is returned:

   NOT ADAPTED

f. If the entered Field 68 is not a postable fix past the present position fix on the flight's converted route, the following Rejection message is returned:

   INVALID FIX

g. The track speed of the aircraft must not be less than 55 knots or greater than 3700 knots. Otherwise, the following Rejection message is returned:

   INVALID SPEED

h. The Calculated Time of Arrival (CTA) to be displayed must not exceed 24 hours. Otherwise, the following Rejection message is returned:

   FLYING TIME GR 24 HRS

i. The aircraft must be FLAT tracked (a flight in FLAT coast is ineligible). Otherwise, the following Rejection message is returned:

   NOT FLAT TRACKED

j. If a hold or delay (other than a turn delay) is scheduled between the current track position and the entered fix, the following Rejection message is returned:

   INVALID-HOLD/DELAY STORED

k. Each fix between the current track position and the entered fix will be processed to determine if it is a coded route fix with an associated speed. If so, the following Rejection message is returned:

   CODED RTE HAS ADAPTED SPD

7.11.3 Processing

The CID at each postable fix on the aircraft's converted route of flight, starting with the track position and ending with the entered postable fix, will be displayed. Fixes that are not associated with primary FPAs are not processed. The speed used in the calculations is the track speed at the time the message is entered. If the entered fix is postable more than once along the converted route of flight, the next occurrence of that fix will be processed as the entered fix.

7.11.4 Resultant Outputs

If the Route of Flight Fix/Time Readout message is acceptable, the requested information will be output on the Response Area of the R-CRD view. Output will also be sent to the associated Flight Strip Printer (FSP) when more than four lines of data are to be output. If the message is not acceptable, a Reject message will be output instead.

7.12 ROUTE OF FLIGHT FIX/TIME/SPEED ADJUSTMENT READOUT (LE)

A Route of Flight Fix/Time/Speed Adjustment Readout message is enterable through the "RNGBRG" Key, the Function Key #9, the R-position alphanumeric keyboard, and the trackball. This action is used to display on the R-CRD view the speed adjustment necessary to position the aircraft over the entered fix at the entered time, based on the converted route of flight at track speed starting at the track position.

7.12.1 Format

a. Fields

DEVICE	FIELDS
R-position	01 68 02

b. Field Contents

01 Message Type (LE)
68 2-11 character alphanumeric fix and a suffix of the format "/dddd" to indicate intended time of arrival over the entered fix
02 Flight Identification

c. Examples

LE SBI/1135 201
LE TCS090010/1135 AAL23
LE DVV/1135 1234

d. Error Indicators

1. Field 02 must be one of the allowable formats for input at the R-position. Otherwise, the following Rejection message is returned:

   FLID FORMAT

2. If Field 02 is entered as a trackball entry, it must capture a valid flight ID or the following Rejection message is returned:

   NO TB FLIGHT ID CAPTURE

3. If a beacon code is entered for Field 02 and it is a nondiscrete beacon code, the following Rejection message is returned:

   ILLEGAL FLIGHT ID

4. Field 68 must be in the format "Fix with intended arrival time" as defined in Appendix A. Otherwise, the following Rejection message is returned:

   cofie FORMAT

7.12.2 Logic

a. If the entered flight identification does not match the flight identification of a stored flight plan, the following Rejection message is returned:

   FLID NOT STORED

b. If the entered flight identification matches the flight identification of a stored flight plan, but the flight is not active, the following Rejection message is returned:

   FLIGHT NOT ACTIVE

c. If the entered flight identification matches more than one active flight plan, the following Rejection message is returned:

   FLID DUPLICATION

d. If the entered flight identification is a DYSIM flight and training is not authorized, the following Rejection message is returned:

   FLT NOT ELIGIBLE

e. The entered Field 68 fix name must match a fix in either the Substitute Fix record or the Fix record, not including latitude/longitude fixes or boundary crossing fixes. Otherwise, the following Rejection message is returned:

   NOT ADAPTED

f. If the fix element portion of the entered Field 68 is not a fix past the present position fix on the flight's converted route, the following Rejection message is returned:

   INVALID FIX

g. The time element portion of Field 68 must be at least three minutes, but less than eight hours in the future. Otherwise, the following Rejection message is returned:

   INVALID TIME

h. The track speed of the aircraft must not be less than 55 knots or greater than 3700 knots. Otherwise, the following rejection message is returned:

   INVALID SPEED

i. The calculated speed adjustment must not be in excess of three digits. If the speed adjustment is greater than 999 or less than -999, the following rejection message is returned:

   SPEED ADJ GR THAN MAX

j. The aircraft must be FLAT tracked (a flight in FLAT coast is ineligible). Otherwise, the following rejection message is returned:

   NOT FLAT TRACKED

k. If a hold or delay (other than a turn delay) is scheduled between the current track position and the entered fix, the following rejection message is returned:

   INVALID-HOLD/DELAY STORED

l. Each fix between the current track position and the entered fix will be processed to determine if it is a coded route fix with an associated speed. If so, the following rejection message is returned:

   CODED RTE HAS ADAPTED SPD

7.12.3 Processing

The speed adjustment necessary to position the aircraft over the entered fix at the entered time will be determined. Fixes that are not associated with primary FPAs are not processed. Calculations will be based on the converted route of flight at track speed starting at the track position. If the entered fix is present more than once along the converted route of flight, the next occurrence of that fix will be processed as the entered fix. The speed required will be compared to the present track speed and both the signed differential and the present track speed will be displayed. The speed output will be to the nearest knot.

7.12.4 Resultant Outputs

If the Route of Flight Fix/Time/Speed Adjustment Readout message is acceptable, the requested information will be output on the Response Area of the R-CRD view. If the message is not acceptable, a Reject message will be output instead.

7.13 EMERGENCY AIRPORT DISPLAY (AI)

The purpose of this message is to request the display of airport characteristics for the emergency airport specified in the message.

7.13.1 Format

a. Fields and Field Sequences

DEVICE	FIELDS
R-position	(01)* 64 65
R-position or D-position	(01)* 64 13

*Field required if D-position or QZ input

b. Field Contents

01 Message Type QN or QZ
64 Action Type (AI)
65 Trackball Coordinates
13 Location Identifier

c. Examples

AI (TBE) (R-position input, "NONE" message type with Trackball)
QN AI JFK (D-position input)
AI JFK (R-position input, "NONE" message type)

d. Error Indicators

cofie FORMAT
MESSAGE TOO LONG
MESSAGE TOO SHORT

7.13.2 Logic

a. If a trackball is entered, it must be positioned within three miles of an adapted emergency airport. If an airport is not found within that range, the message will be rejected.

b. If an airport identifier is entered which is not an adapted emergency airport, the message will be rejected.

c. Error Indicators

TB NOT ON ADAPTED ARPT
NOT ADAPTED

7.13.3 Processing

For an acceptable message, the emergency airport information will be prepared for display for the requested airport, or, if a trackball was entered, for the closest airport within three miles of the trackball entry.

7.13.4 Resultant Outputs

The requested airport information is routed to the entering position CRD view.

7.14 UPDATE FLIGHT PLAN READOUTS (QM)

This message is used to request current flight plan readout data on one to five flight plans currently displayed on the R-position Flight Plan Readout View. This data will update those displayed flight plans.

7.14.1 Format

a. Fields

DEVICE	FIELDS
R-position*	01 217 02a 02d (02a 02d) (02a 02d) (02a 02d) (02a 02d)

*This message is transmitted to Host as a result of the selection of the Update button on the R-position Flight Plan Readout View. It cannot be manually entered.

b. Field Contents

01 Message Type (QM)
217 Number of Flights
02a Aircraft Identification (AID)
02d Computer Identification (CID)

c. Format

1. Number of flights. The Number of Flights field must be one digit with a range of 1-5, or the following Reject message text is returned for the physical QM message:

   cofie FORMAT

2. AID. The AID must be one of the following two formats:

   (a) La(a) (a) (a) (a) (a)
   (b) +La(a) (a)(a) (a)

   Otherwise, the following Reject message text is returned for that specific flight plan:

   cofie FLID FORMAT

3. CID. The CID must be formatted dda, where "a" must not equal 1 or 0. Otherwise, the following Reject message text is returned for that specific flight plan:

   cofie FLID FORMAT

d. Examples

QM 3 AA320 100 TWA44 200 NW260 300
QM 1 BAW99 400

7.14.2 Logic

a. If the Number of Flights field and the number of flight plans entered (02a and 02d) do not match, the message will be rejected and the following Reject message text will be returned for the physical QM message:

   cofie INVALID NUMBER OF FLIGHTS

b. If a requested flight plan is not stored in the flight plan database, the following Reject message text is returned for that specific flight plan:

   cofie FLID NOT STORED

c. When the entered AID for a valid CID does not match the stored AID, the following Reject message text is returned for that specific flight plan:

   cofie ENTERED AID DOES NOT MATCH STORED AID

d. The referent flight plan must be active; otherwise, the following Reject message text is returned for that specific flight plan:

   cofie FLIGHT NOT ACTIVE

e. The QM message is ignored and no response is given if it is received when an operational level of "FDP" is selected by the Surveillance Tie-Off message; the following Rejection message is returned for the physical QM message when an operational level of "RD1" is selected:

   FUNCTION TIED OFF

f. Error Indicators

   cofie FLID NOT STORED
   cofie FLIGHT NOT ACTIVE FUNCTION TIED OFF
   cofie INVALID NUMBER OF FLIGHTS
   cofie ENTERED AID DOES NOT MATCH STORED AID

7.14.3 Processing

For each flight plan requested, a Flight Plan Fields Readout (MF) message is constructed from the flight plan database. The route field will contain the filed route of flight. Program-inserted transitions from type 2 and 4 coded routes, DPs, and STARs are included as program-inserted incomplete route data. No elements are truncated. Adapted alphanumerics for applicable PDRs, PARs, or PDARs are included, separated by a space and bracketed with plus signs (+). PDR and PDAR alphanumerics follow the first route element; PAR alphanumerics precede the destination fix. If the ICAO Associated Data Status is "present" for the referent flight plan, the adapted "ICAO Indicator" will be program-inserted as the first character string of the intercenter remarks in the Remarks field followed by a space character.

Each requested flight plan will be processed, successfully or unsuccessfully, as an individual logical message within the physical QM message.

7.14.4 Resultant Outputs

When the QM message is rejected and for each flight plan processed both successfully and unsuccessfully, a Flight Plan Fields Readout message (MF) is returned to the requesting DSR R-position.

When a requested flight plan is not stored or an error has occurred, an MF message is returned with the Readout Status field set to "Reject Requested Flight," the Error Text Field set to the reject reason, and the Readout Data record not included for the referent flight plan. When the physical QM message is rejected, an MF message is returned with the Readout Status field set to "Reject Update Message," the Error Text field set to the reject reason, blanks set in the AID and CID fields, and the Readout Data record not included. Otherwise, the completed MF message is returned for each requested flight plan with the Readout Status field set to "Accept."

A Host Command and Completion Status message will not be transmitted to DSR in response to this message.

8.0 MISCELLANEOUS MESSAGES

The following Miscellaneous Messages can be found in this section:

8.0 MISCELLANEOUS MESSAGES

8.1 WEATHER (WX)

The Weather (WX) message is used to enter weather observation data for selected adapted reporting station(s). The weather data entered is used for display when a Weather Request (WR) message has been entered. A maximum of 240 weather reporting stations may be adapted.

The altimeter setting data, entered as part of the WX message, is used for display at the control positions when an Altimeter Request (AR) message has been entered and in calculating Mode C correction factors.

Visibility and Ceiling, entered as part of the weather sequence, are used to determine if an airport is eligible for Instrument Approach counts.

8.1.1 Message Content and Source

The following defines the legal source and fields of the WX message.

SOURCE	FIELDS
D or A position	01 13 35 45 (13 35 45)…(13 35 45)

8.1.2 Acceptance Checking

The WX message contains a message type designator and reporting time, followed by one or more reporting station(s) and associated weather observation data.

8.1.3 Format

8.1.3.1 Field 13

The reporting station identifier field (13) consists of two to five alphanumerics. Otherwise, the following Rejection message is returned:

REJECT - cofie FORMAT

8.1.3.2 Field 35

The time field (35) must be four digits. The first two digits (hours) must not exceed 23, and the last two digits (minutes) must not exceed 59. Otherwise, the following Rejection message is returned:

REJECT - cofie INVALID TIME

8.1.3.3 Field 45

This field begins with a clear weather symbol (O). This field is a free format with embedded blanks. If the last character of this field is an asterisk (*), an additional weather sequence (13, 35, 45) may be entered. (A blank space must separate the asterisk and the next weather sequence.) This field may not exceed 240 characters, excluding the clear weather symbol and the optional asterisk. Otherwise, the following Rejection message is returned:

REJECT - MESSAGE TOO LONG

The weather data is accepted, stored, and not interpreted by the program.

8.1.4 Logic

Logic checking for a WX message, with multiple weather sequences, is accomplished left to right as though each reporting station and its weather sequence were in separate WX messages. Each altimeter station's altimeter setting is used for logic checking any subsequent altimeter setting data for the same reporting station, if applicable. Logic checking for the first occurrence of altimeter setting data in a WX message is accomplished against the referent reporting station's current altimeter setting.

8.1.4.1 Field 13

If the entered weather reporting station identifier (Field 13) does not match an adapted weather reporting identifier, the following Rejection message is returned:

REJECT - cofie NON-ADAPTED STATION

8.1.4.2 Field 35

No further acceptance checking is required for Field 35.

8.1.4.3 Field 45

If the field does not begin with a clear weather symbol (O), or if no weather data is included after the last entered weather reporting station identifier, the following Rejection message is returned:

REJECT - FIELD OMISSION

8.1.4.4 Field 45

Field 45 is searched for a five-character element in the format Ldddd, where L is the letter "A" and d is any decimal number. If this element exists and the digits are in the range 2500-3499, the last three digits are formatted as Field 34 in an AS message. This AS message is processed as an integral part of the WX message.

The following output messages are returned, dependent on the conditions listed.

a. If an altimeter setting is found which changes the referent altimeter station's current altimeter setting by +/-.08 or more, the altimeter setting is rejected and the following message is returned:

   ACCEPT WX REJECT AS aa(a)(a)(a)

b. If an altimeter setting is found and the referent altimeter station's current altimeter setting is missing (M), the message is accepted and the following message is returned:

   ACCEPT WX ACCEPT AS ddd FIRST aa(a)(a)(a)

c. If an altimeter setting is found which changes the referent altimeter station's current altimeter setting by +/-.07 or less, the message is accepted and the following message is returned:

   ACCEPT WX ACCEPT AS ddd aa(a)(a)(a)

d. If the altimeter setting is not found, the altimeter portion of the message is rejected and the following message is returned:

   ACCEPT WX REJECT AS aa(a)(a)(a)

e. If the optional asterisk (*) is used to enter multiple weather sequences, a single accept is output for the WX followed by the appropriate accept/reject for the altimeter setting portion for each of the stations entered. For example:

   ACCEPT WX REJECT AS aa(a)(a)(a) ACCEPT AS ddd aa(a)(a)(a)

f. A check will be made of the altimeter setting for all reporting stations entered in the message. All settings that are accepted and differ from the current altimeter setting by +/-.04 or more will be so indicated on the CRD or KVDT. For example:

   ACCEPT WX ACCEPT AS ddd aa(a)(a)(a)…+/-.04 aa(a)(a)(a)

If the altimeter setting is rejected, the current altimeter setting is not changed. However, the current weather sequence is changed.

8.1.4.5 Visibility and Ceiling Reports

Visibility and ceiling are checked in weather reports from weather stations adapted as primary or backup to airports qualified for an Instrument Approach count. If the primary weather is missing, the backup weather is used. When both primary and backup weather are missing, the flight will not be counted as an instrument approach. Visibility is checked for a value of less than three miles, and ceiling is checked for a value less than or equal to an adapted altitude for the arrival airport. If the entered ceiling is at or below the adapted altitude, or visibility is less than 3 miles, the airport is eligible for Instrument Approach counts. Visibility input is suffixed by "SM," i.e. 2SM would indicate two miles visibility. Ceiling input is checked for either BKN or OVC, followed by the three-digit altitude, i.e. BKNO15 would indicate a 1500-foot broken condition.

8.1.5 Processing

An acceptable Weather Sequence message modifies the currently stored Weather Sequence for specified reporting stations. The entered Weather Sequence message and reporting time replace those currently stored for the corresponding reporting stations. If Field 45 contains no text data, the stored weather data will be replaced with the character "M" to indicate missing weather.

An acceptable altimeter portion of a WX message modifies the current altimeter setting for the specified altimeter reporting station (Field 13) and is used for calculating Mode C correction factors and output purposes. The Field 35 time replaces the current reporting time for the specified altimeter reporting station.

8.1.6 Results

An acceptable weather message modifies the currently stored weather sequence and altimeter setting reference data.

If any of the weather information that is modified is currently being displayed at a D-position CRD view, the D-CRD view is updated to display the new data.

An acceptable altimeter setting in the WX message will modify any currently displayed "Altimeter Setting" and "Time" fields at D-position and/or R-position CRD views.

8.2 ALTIMETER SETTING (AS)

The Altimeter Setting (AS) message is used to enter altimeter reference data for selected adapted reporting stations. The altimeter data entered is used for display at control positions and in calculating Mode C corrections factors.

8.2.1 Message Content and Source

The following defines the legal sources and fields of the AS message:

SOURCE	FIELDS
D or A-position	01 35 13 34 (13 34)…(13 34)

8.2.2 Acceptance Checking

This AS message contains a message type designator and reporting time, followed by one or more reporting station(s) and associated altimeter setting data.

8.2.3 Format

8.2.3.1 Field 35

The time field (Field 35) must be four digits. The first two digits (hours) must not exceed 23, and the last two digits (minutes) must not exceed 59. Otherwise, the following Rejection message is returned:

REJECT - (cofie) INVALID TIME

8.2.3.2 Field 13

The reporting station identifier (Field 13) consists of two to five alphanumerics. Otherwise, the following Rejection message is returned:

REJECT - cofie NOT ADAPTED

8.2.3.3 Field 34

The altimeter setting (Field 34) contains three digits or the character "M." An implied leading digit of an altimeter setting is understood as follows:

000 - 499	implies 3000 - 3499
500 - 999	implies 2500 - 2999

If the character "M" is entered, the altimeter setting for the associated reporting station is missing. If these requirements are not satisfied, the following Rejection message is returned:

REJECT - (cofie) INVALID ALTIMETER SETTING

8.2.4 Logic

Logic checking for an AS message, with multiple reporting stations and associated altimeter data, is accomplished left to right as though each reporting station and its associated altimeter data were in separate AS messages. Each altimeter station's altimeter setting is used for logic checking any subsequent altimeter setting data for the same reporting station, if applicable. Logic checking for the first occurrence of altimeter setting data in an AS message is accomplished against the referent reporting station's current altimeter setting.

8.2.4.1 Field 35

No further acceptance checking is required for Field 35.

8.2.4.2 Field 13

If the entered reporting station identifier (Field 13) does not match an adapted altimeter reporting station identifier, the following Rejection message is returned:

REJECT - cofie NOT ADAPTED

8.2.4.3 Field 34

If no altimeter setting data (Field 34) is included after the last entered reporting station identifier (Field 13), the following Rejection message is returned:

REJECT - FIELD OMISSION

A check will be made of the altimeter setting for all reporting stations entered in the message. All settings will be accepted; however, any settings which differ from the previously stored setting by .04 or more will be so indicated on the CRD view or KVDT by the following message:

ACCEPT AS+/-.04 13 (13) (13)…(13)

8.2.5 Processing

An acceptable AS message modifies the current altimeter data for the specified altimeter reporting station (Field 13). The Field 35 time replaces the current reporting time for the specified altimeter reporting station. If an "M" is entered in Field 34 for a specified altimeter reporting station and its current altimeter setting is ddd, then the setting is changed to missing and a default barometric pressure of 29.92 is used for calculating Mode C correction factors and an "M" is used for output purposes.

If ddd is entered in Field 34 for a specified altimeter reporting station, its altimeter setting is replaced by the Field 34 setting and is used for calculating Mode C correction factors and output purposes.

8.2.6 Results

An acceptable AS message modifies the current altimeter data, and an accept response is returned to the source for D-position, A-position, KVDT, FDEP, and TTY inputs or to the high-speed printer for card image dataset inputs.

An acceptable AS message will modify any currently displayed Altimeter Setting and/or Time fields at D-position and/or R-position CRD views.

8.3 GENERAL INFORMATION (GI)

The General Information (GI) message is used to enter information desired for output at specified locations or positions.

8.3.1 Message Content and Source

The following defines the legal sources and fields of GI messages:

SOURCE	FIELDS
D or A-position	01 16 (16)…(16) 11

8.3.2 Acceptance Checking

The GI message contains the source field message type designator, the output routing field(s), and the remarks field.

8.3.3 Format

8.3.3.1 Field 16

The output routing field must be one of the following formats:

a. L-Broadcast Indicator. To broadcast the general information to all adapted positions/locations except, as indicated below, when using the "C" broadcast indicator, where L must be one of the following:

A - All adapted approach control arrival positions
C - All active sector FSPs and KVDTs in center except the Systems Maintenance and Monitor Console (SMMC) KVDT(s) and the Host Computer System (HCS) KVDT(s)
D - All adapted approach control departure positions
F - All adapted flight service stations (Area B TTY) except "WMS" (WMSC)
O - All adapted approach control overflight positions
T - All adapted tower positions

b. dd-Sector Number

c. Ld-KVDT Position Identification where L must be one of the following:

S - Primary A
W - Watch Supervisor/Flow Controller
E - Systems Engineer
G - General A
C - Host Computer System (HCS)

d. aaaL(aaa) - Remote location or position where aaa is an adapted facility identifier other than "WMS" (WMSC) and L must be one of the following:

T - Tower position
D - Approach control departure position
A - Approach control arrival position
O - Approach control overflight position
F - Flight service station (AREA B TTY)
M - Military Base Operations (Military B TTY)

and (aaa) is the optional printer name for Approach Control Departure or Arrival position. If omitted, the general information will be routed to all adapted D or A positions.

e. LLL - Manual adjacent center or non-U.S. manual center where LLL is the identifier.

f. LLLS - Adjacent NAS center, Primary A KVDT where LLL must be an adjacent NAS center identifier.

g. LLLW - Adjacent NAS center, Watch Supervisor KVDT where LLL must be an adjacent NAS center identifier.

h. LLLE - Adjacent NAS center, SMMC KVDT

i. ALL - To broadcast the general information to all positions, locations, and facilities listed above in this section. Otherwise, the following Rejection message is returned:

REJECT - cofie INCORRECT ROUTING

In addition, the input source must be an adapted supervisory KVDT (i.e., (5) Primary A, (W) Watch supervision/flow controller, or (E) SM MC) if Field 16 of the message contains one of the following routing symbols from the previous list:

1. Broadcast Indicators F, L or M

2. Remote Location or Position Identifiers aaaF or aaaM

3. The ALL broadcast indicator

4. LLL where:

LLL is a non-U.S. manual ARTCC identifier. Otherwise, the following Rejection message is returned:

REJECT - ILLEGAL SOURCE

8.3.3.2 Field 11

The last field in the message is considered a Field 11 and must contain the clear weather symbol (O) followed by a sequence of characters, the maximum number being dependent upon input device restraints. If the clear weather symbol is not found, the following Rejection message is returned:

REJECT - NO REMARKS CODE

8.3.4 Logic

The output routing field must consist of a valid broadcast indicator, adapted active sector number, position identification, or facility identifier. Identical output routings (Field 16) may not appear more than twice in a single GI message. Otherwise, the following Rejection message is returned:

REJECT - cofie INCORRECT ROUTING

If 40% or less of 300 word block queues of the Strip Processor subprogram (CSF) or the NAS-to-TTY subprogram (CTY) are available, output the following Rejection message:

REJECT - RESOURCES UNAVAILABLE

8.3.5 Processing

General information messages are format and logic checked as specified in Acceptance Checking. An acceptable GI message results in the data in the remarks field being printed for each position/identifier at the specified output locations and/or positions.

If an output routing field consists of a broadcast indicator, the data are printed at all locations and/or positions associated with the broadcast indicator. If an output routing field consists of more than one character, the data are printed at the output or position specified in the output routing field.

For A- or D-position, FDEP, and KVDT inputs, the program will insert the message origin followed by a space in Field 11 after the clear weather symbol. The message formats for the message origin are:

a. Messages output to other facilities:

   LLLLa(a) - The first three characters are the sending center, and the last two to three characters are the sending position.

b. Messages output within the facility:

   La(a) - These two to three characters are the sending position.

8.3.6 Results

An acceptable GI message results in an accept response being returned to the entering source and in outputs based on the output routing field(s). If the GI message is in error, a Rejection message is returned to the entering device.

If the output routing field consists of an adjacent NAS center identifier, no response is expected from the addressed computer.

Receipt of a GI message from an adjacent NAS center is not acknowledged. If the text of a GI message contains an asterisk character (*), a continuous alarm will be generated if the message is routed to a KVDT.

8.4 TEST DEVICE (TD)

The Test Device (TD) message provides an output test message isolated from the operational messages.

8.4.1 Message Content and Source

The following are the legal sources and fields for the TD message:

SOURCE	FIELDS
D or A-position	01 (16)

8.4.2 Acceptance Checking

The TD message contains the message type designator and may contain the optional output routing field. In the case of an FDEP, the output routing field is required, and in the case of TTY, the source field is required.

8.4.3 Format

The output routing field (Field 16) contains one to seven alphanumerics and must be one of the following:

a. P

b. aaaL or aaaLaaa where: the first aaa is an approach control or tower identifier and L must be one of the following:

T - Tower FDEP printer
D - Approach control departure FDEP printer
A - Approach control arrival FDEP printer
O - Approach control overflight FDEP printer

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

c. (a)aa where: (a)aa is the adapted facility identifier of a flight service station, military base operations, or air carrier dispatch office.

Otherwise, the following Rejection message is returned:

REJECT - cofie INCORRECT ROUTING

8.4.4 Logic

If more than one alphanumeric is entered in Field 16, the output routing field must be one of the following:

a. (a)aa where: (a)aa must be an adapted flight service station, military base operations, or air carrier dispatch office, or non-U.S. manual ARTCC.

b. aaaL or aaaLaaa where: the first aaa is an adapted approach control identifier.

L must be either T, D, A or O.

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

The letter “P” is the only acceptable contents of Field 16 from a D-position or A-position in a TD message and is not acceptable from any other source.

Otherwise, the following Rejection message is returned:

REJECT - cofie INCORRECT ROUTING

8.4.5 Processing

Test Device messages are format and logic checked as specified in Acceptance Checking.

8.4.6 Results

An acceptable TD message results in the display or printout of special messages. If the TD message is in error, a Rejection message is returned to the entering device except for an unanswerable or nonadapted TTY facility.

If an acceptable TD message with no output routing field is entered from a D-position or A-position, the TD response data is displayed on the associated CRD view. If a TD message is entered from a D-position or A-position with the output routing field, the TD response data are printed on the associated flight strip printer and an accept response is returned to the CRD view associated with the entering D-position or A-position.

An acceptable TD message entered from an FDEP facility results in the TD response data being routed to the specified FDEP position. If the source and output positions are not the same, an Accept message is returned to the entering FDEP.

8.5 TRAFFIC COUNT ADJUSTMENT (TC)

The Traffic Count adjustment message (TC) is used for two purposes: to adjust (increment or decrement) a specified sub-category count, and to trigger the printing of the current facility traffic counts.

8.5.1 Message Content and Source

The following specifies the legal sources and field of a TC message:

SOURCE	FIELDS
D or A-position	01 44(44)…(44)

8.5.2 Acceptance Checking

The TC message contains the message type and a maximum of eight data fields, each separated by a space character. D or A-position inputs must have at least one data field.

8.5.3 Format

8.5.3.1 Data Field

The data field (44) must contain eight alphanumeric characters and must be in the format aaaa+ddd or aaaa-ddd where:

aaaa - the alphabetic sub-category contraction
\+ - directs incrementation
\- - directs decrementation
ddd - the value to be applied

If an error is detected, the following Rejection message is returned:

REJECT - cofie FORMAT

8.5.4 Logic

8.5.4.1 Data Field

The first four characters of the data field must be alphabetic and one of the following contractions:

a. ACDD (Air Carrier Domestic Departures)

b. ATDD (Air Taxi Domestic Departures)

c. GADD (General Aviation Domestic Departures)

d. MIDD (Military Domestic Departures)

e. ACDO (Air Carrier Domestic Overflights)

f. ATDO (Air Taxi Domestic Overflights)

g. GADO (General Aviation Domestic Overflights)

h. MIDO (Military Domestic Overflights)

i. ACOD (Air Carrier Oceanic Departures)

j. ATOD (Air Taxi Oceanic Departures)

k. GAOD (General Aviation Oceanic Departures)

l. MIOD (Military Oceanic Departures)

m. ACOO (Air Carrier Oceanic Overflights)

n. ATOO (Air Taxi Oceanic Overflights)

o. GAOO (General Aviation Oceanic Overflights)

p. MIOO (Military Oceanic Overflights)

q. VFRC (VFR Traffic Count)

Otherwise, the following error is returned:

REJECT - cofie ILLEGAL CATEGORY

If an adjustment is entered for an Oceanic category and no oceanic sectors are adapted, no adjustment will take place. The following error message is returned:

REJECT - cofie NOT ADAPTED

If, when adjusting the total count of the specified sub-category, the value entered would cause an overflow or cause total count to become negative (see examples below), no adjustment will take place. The following error message is returned:

REJECT - cofie INVALID ADJUSTMENT

1. Examples:

   a) Currently, in the sub-category ATDD (Air Taxi Domestic Departures), the total count is 250 and the manually entered count is 100.

      Domestic Departures

      Air Taxi 250/100

      Now TC ATDD-150 is entered. The total count would become 100 and the manual count would become -50.

      Domestic Departures

      Air Taxi 1001-50

This is acceptable because, although the manual count has become negative, the total count is still positive.

   b) Currently, in the sub-category GAOO (General Aviation Oceanic Overflight), the total count is 9500 and the manually entered count is 9500.

      Oceanic Overflights

      General Aviation 9500/9500

Now TC GAOO + 500 is entered. The total count would become 10,000 and so would the manually entered count. However, 10,000 in the total count is an overflow condition, so no adjustment to either the manual or the total count would take place, and the entered TC message would be rejected. Notice that the total count in a sub-category is always as large as or larger than the manually entered count since the total count equals the sum of the manual and automatic counts. This means that whenever a TC message would cause an overflow condition in the manual count, it would also cause an overflow in the total count

with the result that no adjustments of either count would take place and the input TC message would be rejected.

c) Currently, in the sub-category ACOD (Air Carrier Oceanic Departures), the total count is 50, and the manually entered count is 25.

Oceanic Departures

Air Carrier 50/25

Now TC A000-51 is entered. The total count would become -1, and the manually entered count would become -26. However, since the total count would become negative, no adjustment of either count takes place, and the input TC message is rejected.

8.5.5 Processing

When Field 44 is not included as part of input message, the current facility traffic counts are output. When Field 44 is included, the sub-category specified in the data field is incremented or decremented by the value specified.

8.5.6 Results

When requested, facility traffic counts are output on the high-speed printer. When simultaneous TC messages with no data fields are entered, the resultant output will be one Facility Traffic Count Printout.

8.6 SEE-ALL (SA) (DSR)

This message is used to display an exact copy of the target sector's Host Situation Display, R-position Display Controls and Status View, R-CRD View (except for Preview Area keystrokes and keyboard cursor movement), the R-position Flight Plan Readout View, and R-position Time View on the requester's R-position console. This message may be entered from an Area Manager's R-position console, a Traffic Manager's R-position console, or a Monitor and Control (M &C) C-position console.

8.6.1 Format

a. Fields

POSITION	**MESSAGE SYNTAX**
R-position	01 214

b. Field Contents

01 Message Type (SA)
214 Sector Identification

c. Examples

SA 20
SA 04

d. Error Indicators

TOO MANY FIELDS ENTERED
MISSING FIELD IN MSG - SID (D)DD (01-118)
MSG SA - ILLEGAL SOURCE
FIELD IN ERROR - ENTER VALID 510: (D)DD (01-118)

8.6.2 Logic

a. The See-All action is rejected if:

1) It would result in more than the maximum number (2) of simultaneous See-All actions to be exceeded for the target sector.

2) The target's sector identification (Field 214) is the same as the requester's sector identification.

3) The target sector (Field 214) for the See-All action does not have an assigned R-position.

4) The target sector number (Field 214) is not a valid sector number.

5) The target sector number (Field 214) is a Ghost Pilot position. (The Ghost Pilot position also cannot initiate a See-All request.)

6) The target sector (Field 214) is also performing a See-All action.

7) The requesting sector cannot establish a See-All session with the target sector (Field 214).

8) The requesting sector is the target of an existing See-All action.

9) The Situation Display at the target sector (Field 214) or the requesting sector is being reconstituted.

10) Security is enabled and no one is logged in at the position.

b. Error Indicators

SECTOR <ddd> ALREADY TARGET OF MAX NUMBER OF SEE-ALL ACTIONS BY SECTORS <ddd ddd>
CANNOT SEE-ALL YOUR OWN SECTOR
SECTOR <ddd> DOES NOT HAVE AN R-POSITION
<ddd> NOT VALID SECTOR NUMBER
CANNOT SEE-ALL GHOST PILOT
SECTOR <ddd> IS IN SEE-ALL MODE - CANNOT SEE-ALL AT THIS TIME
UNABLE TO ESTABLISH SESSION WITH SECTOR <ddd> AT THIS TIME
YOUR SECTOR IS TARGET OF SEE-ALL BY SECTOR <ddd ddd> - CANNOT SEE-ALL AT THIS TIME
SECTOR <ddd> SITUATION DISPLAY BEING RECONSTITUTED - CANNOT SEE-ALL AT THIS TIME
SA MESSAGE FAILED - LOG IN REQUIRED

8.6.3 Processing

a. If the target sector (Field 214) is working a combined sector, the Situation Display data for the combined sector will be displayed on the requester's console.

b. While a See-All is in progress, the only action that will be allowed at the requesting sector is termination of the See-All by pressing the CLEAR key. When the requester terminates the See-All, the views that were removed from the requester's console will be restored to the size and location they had prior to the See-All action. The message indicating that the display is in See-All mode is removed from the display.

When requesting or suppressing sector metering lists, the airport specified or implied in the message must be an adapted ASP metering airport. When the airport specified or implied in the message is an ESP airport, the following Rejection message will be returned:

NOT AN ASP AIRPORT

8.6.4 Resultant Outputs

An exact copy of the Situation Display, Display Controls and Status View, and Time View displayed on the target sector's R-position console will be displayed at the requester's R-position console. A copy of the Flight Plan Readout View that is displayed on the target sector's R-position console will be displayed at the requester's R-position console. A copy of the R-CRD View that is displayed on the target sector's R-position console will be displayed at the requester's R-position console. However, keystrokes and keyboard cursor movements made in the Preview Area at the target sector will not be displayed at the requesting sector. Trackball cursor movements at the target sector will be seen at the requesting sector. If the target sector is displaying an EDARC Situation Display, the Host version of the Situation Display from the target sector will be displayed at the requesting sector. The copies of the target sector's R-position views will temporarily replace the view displayed at the requester's R-position console. The replaced views will continue to be updated.

A message will be displayed at the top of the requester's console indicating that the console is in See-All mode and the target's sector number. The message will be displayed in medium characters and will read, "SEE-ALL <ddd>", where <ddd> is the target's sector number.

8.7 DISPLAY/SUPPRESS METERING POSTION OR SECTOR METERING LIST(S) (NA)

The Display/Suppress Metering Position or Sector Metering List(s) Message (NA) is used to either request display or suppress display of Metering Position or Sector Metering List(s).

The NA message is composed of the message type field followed by one or two legal fields. The combination and order of the entered fields determine which of the following metering actions is performed.

a. Request display of a specific Arrival Sequencing Program (ASP) or En Route Sequencing Program (ESP) airport metering position list.

b. Suppress display of a specific ASP or ESP airport metering position list.

c. Request sector metering lists for a specific ASP airport.

d. Suppress sector metering lists for a specific ASP airport.

8.7.1 Message Content and Sources

An NA message can be entered only at an adapted metering position. Described below are the two methods of entering an NA message:

a. At the "R" position, an NA message can be entered using the "Met List" Key, Function Key #1, and the R-position alphanumeric keyboard. Field 01 is automatically generated via Category/Function Key suppression, and thus, Field 01 is not to be entered at the R-position alphanumeric keyboard.

b. At the associated "D" position, an NA message can be entered through the D-position alphanumeric keyboard. The letters "NA" are required to be the first entered field and constitute Field 01 as described within this section.

The following are the legal sources (at adapted metering positions) and fields for the NA message:

SOURCE	FIELDS
R-position	01 (13) 89
D-position	01 (13) 89

8.7.2 Acceptance Checking

The NA message contains the message type designator, an optional metering airport identification, and a required display type indicator. The acceptance checks specified are for field format, order of input fields, and field logic.

8.7.3 Field Format

a. Field Contents

01 Message Type (NA)
13 3-character alphanumeric airport
89 Metering List Type Display Indicator

b. Examples

Fields	01	(13)	89
Examples	NA	ACY	ON
	NA	ACY	LST
	NA	ACY	NST
	NA	ACY	OFF
	NA	E3T	ON
	NA		LST
	NA		NST
	NA	DEN	ON
	NA		OFF

8.7.3.1 Field 01 (Message Type)

If an NA message is input from any source other than legal, the following Rejection message is returned:

ILLEGAL SOURCE

8.7.3.2 Field 13 (Location Identifier)

Field 13, when entered in an NA message, will contain the airport identification identifier. Field 13 must be of the following format:

aaa

If any other format for Field 13 is entered, the following Rejection message is returned:

cofie FORMAT

8.7.3.3 Field 89 (Display Indicator)

Field 89 contains the Display Indicator. Field 89 must contain one of the following identifiers:

a. ON

b. OFF

c. LST

d. NST

If Field 89 does not contain one of these identifiers, the following Rejection message is returned:

cofie FORMAT

8.7.3.4 Field Order

Field 01 must be followed by at least one field. If only one field follows Field 01, it will be processed as a Field 89.

If two fields follow Field 01, then the first field following Field 01 will be processed as a Field 13 and the second field will be processed as a Field 89.

8.7.4 Field Logic

8.7.4.1 Field 01 (Message Type)

An NA message can only be entered when metering processing is in effect (Parameter METR is "ON"). Otherwise, the following Rejection message is returned:

FUNCTION TIED OFF

If Field 01 is not followed by any other fields, the following Rejection message is returned:

MESSAGE TOO SHORT

If Field 01 is followed by more than two fields, the following Rejection message is returned:

MESSAGE TOO LONG

8.7.4.2 Field 13 (Location Identifier)

Field 13 must be input when the desired airport metering list display is not already in an "ON" status at the entering metering position. Otherwise, the message will be applied to the currently displayed airport. If no airport metering position list is currently displayed at the entering metering position and Field 13 is not entered, the following Rejection message is returned:

DESTINATION FIELD REQ

If the desired airport metering list is in "ON" status at the entering metering position, Field 13 may be omitted and the NA message will be applied to the airport metering position list currently being displayed.

If Field 13 contains an adapted ASP or ESP airport that is currently a peripheral airport of an airport combination, the following error indicator is returned:

AIRPORT IS COMBINED

If Field 13 contains characters that do not match an ASP or ESP airport adapted for metering, the following error indicator is returned:

NOT ADAPTED

NA messages that contain a valid Field 13, if otherwise acceptable, will apply to the metering list for the airport specified in the message regardless of which adapted metering position device the message was entered from, except when requesting display of a metering position list. This will result in the requested metering list being displayed only at the associated entering metering position, provided that the requested metering position list is not already displayed or that the entering device does not already have a metering list currently displayed.

8.7.4.3 Field 89 (Display Indicator)

If Field 89 contains the identifier "ON" and the metering position list of the specified or implied airport in the message is currently displayed either at the entering metering position or at another adapted metering position, or if the entering device currently has an airport metering list displayed, the following Rejection message is returned:

ON ALREADY IN EFFECT

If Field 89 contains the identifier "OFF" and the specified metering position list is not currently displayed, the following Rejection message is returned:

OFF ALREADY IN EFFECT

If Field 89 contains the identifier "LST" and sector metering lists are already displayed for the specified or implied airport in the message, the following Rejection message is returned:

ON ALREADY IN EFFECT

If Field 89 contains the identifier "NST" and sector metering lists are not currently displayed for the specified or implied airport in the message, the following Rejection message is returned:

OFF ALREADY IN EFFECT

8.7.4.4 Special Logic Check

For the NA message to request or display a metering position list, there must be sufficient entries available in the ESP/ASP communication table. Otherwise, the following Rejection message is returned:

NO ENTRIES AVAILABLE

8.7.5 Processing

Processing of an acceptable NA message will depend upon the metering display indicator and the ASP or ESP airport specified or implied in the message.

8.7.5.1 Request Display of Metering Position List

The metering position list for the specified airport will be generated and routed to the associated metering position device. There are two types of metering position lists which are selected with the appropriate entry in Field 13. The two types are:

a. ASP metering position list

b. ESP metering position list

8.7.5.2 Suppress Display of Metering Position List

The metering position list for the specified or implied airport in the message will be deleted from the metering position where it is being displayed.

8.7.5.3 Request/Suppress Sector Metering Lists

When an NA message that either requests or suppresses display of ASP sector lists is accepted, the lists are displayed or suppressed at sector metering position(s) which control the airspace containing the adapted meter fixes and outer fixes for the specified or implied ASP airport in Field 13 of the message.

For the NA message that requests display of sector metering lists for an airport, each metered flight destined to the specified or implied airport will be displayed, if eligible, in the sector list for the entry's assigned meter fix or outer fix. In order for an ASP flight to be eligible for display in its sector list, the flight must either be within the adapted minutes of its outer or meter fix CTA.

NOTE: Different sector lists for different airports can be displayed simultaneously at a sector metering position.

For the NA message that suppresses display of sector metering lists, all sector lists for the specified or implied ASP airport in Field 13 will be deleted.

8.7.6 Results

Acceptance of an NA message results in an acceptance response being returned to the entering adapted metering position. Except in the case of a Request message, the display of the metering position list is an indication of the acceptance. After an accepted message has been processed, the observable responses described in this section will occur. A rejected message will result in the appropriate error response being returned to the entering device.

8.7.6.1 Request Display of Metering Position List

After the appropriate list is formatted, it will be displayed at the requested metering position.

8.7.6.2 Suppress Display of Metering Position List

The metering position list for the specified or implied airport will be deleted from the metering position where it is being displayed.

8.7.6.3 Request Display of Sector Metering Lists

The specified or implied ASP sector metering lists will be displayed.

8.7.6.4 Suppress Display of Sector Metering Lists

The specified or implied ASP sector metering lists will be suppressed.

8.8 MANUAL SWAP (NE)

The Manual Swap Message (NE) is used to manually swap Calculated Landing Times (CLTs)/Calculated Vertex Times (CVTs) of two metered flight entries in a metering position list.

The NE message is composed of the message type field followed by two or three legal fields.

8.8.1 Message Content and Sources

An NE message can be entered only at an adapted metering position. The two methods of entering an NE message are described as follows:

a. At the "R" position, an NE message can be entered using the "Met List" Key, the Function Key #5, and the R-position alphanumeric keyboard. Field 01 is automatically generated via Category/Function key suppression, and thus, Field 01 is not to be entered at the R-position alphanumeric keyboard.

b. At the associated "D" position, an NE message can be entered through the D-position alphanumeric keyboard. The letters "NE" are required to be the first entered field and constitute Field 01 as described within this section.

The following are the legal sources (at adapted metering positions) and fields for the NE message:

SOURCE	FIELDS
R-position	01 (13) 02 02
D-position	01 (13) 02 02

8.8.2 Acceptance Checking

The NE message contains the message type designator, optional field metering airport identification, and required fields of two aircraft identifications (ACIDs). The acceptance checks specified are for field format, order of input fields, and field logic.

8.8.3 Field Format

a. Field Contents

01 Message Type (NE)
13 3-character alphanumeric airport
02 2-7-character alphanumeric AID or CID

b. Examples

Fields	01	(13)	02	02
Examples	NE	ACY	TWA101	COA301
	NE		122	TWA155
	NE	LAX	AAL224	023
	NE	DEN	134	145

8.8.3.1 Field 01 (Message Type)

If an NE message is input from any source other than a legal source, the following Rejection message is returned:

ILLEGAL SOURCE

8.8.3.2 Field 13 (Location Identifier)

Field 13, when entered in an NE message, will contain the airport identification identifier. Field 13 must be of the following format:

aaa

If any other format for Field 13 is entered, the following Rejection message is returned:

cofie FORMAT

8.8.3.3 Field 02 (Aircraft Identification)

A valid Field 02 must be in one of the following formats:

a. La(a)(a)(a)(a)(a) - Aircraft Identification (AID) excluding an AID which specifies a test flight plan

b. dda - Computer Identification (CID)

Any Field 02 format other than those described above will result in the following error response being returned:

FLID FORMAT

8.8.4 Field Order

Field 01 must be followed by at least two fields.

If only two fields follow Field 01, then both of those fields will be processed as Field 02s.

If three fields follow Field 01, then those three fields will be processed, in order, as Field 13, Field 02, and Field 02, respectively.

8.8.5 Field Logic

8.8.5.1 Field 01 (Message Type)

An NE message can only be entered when metering processing is in effect (parameter METR is “ON”). Otherwise the following Rejection message is returned:

FUNCTION TIED OFF

If Field 01 is not followed by at least two fields, the following Rejection message is returned:

MESSAGE TOO SHORT

If Field 01 is followed by more than three other fields, the following Rejection message is returned:

MESSAGE TOO LONG

8.8.5.2 Field 13 (Location Identifier)

Field 13 must be input when the desired airport metering list display is not already in “ON” status at the entering metering position. Otherwise, the message will be applied to the currently displayed airport. If no airport metering position list is currently displayed at the entering metering position and Field 13 is not entered, the following Rejection message is returned:

DESTINATION FIELD REQUIRED

If the desired airport metering list is in "ON" status at the entering metering position, Field 13 may be omitted and the NE message will be applied to the airport metering position list currently being displayed.

If Field 13 contains an adapted ASP or ESP airport that is currently combined as a peripheral airport of an airport combination, the following error indicator is returned:

AIRPORT IS COMBINED

If Field 13 contains characters that do not match an ASP or ESP airport that is adapted for metering, the following error indicator is returned:

NOT ADAPTED

NE messages that contain a valid Field 13, if otherwise acceptable, will apply to the metering list for the airport specified in the message regardless of which adapted metering position device the message was entered from.

8.8.5.3 Field 02 (Aircraft Identification)

If a Field 02 contains an entry that is either NOFIX/NOVTX or down-arrow, the following error response is returned:

ILLEGAL FLIGHT ID

If the two flight identifications specified are the same metered entry, the following Rejection message is returned:

FLID DUPLICATION

If a Field 02 contains a CID, it must match an active flight plan currently metered and destined to the airport specified or implied in the message. Otherwise, the following Rejection message is returned:

ILLEGAL FLIGHT ID

If either specified Field 02 contains an AID, it must be for an entry that is already processed and eligible for display in the metering position list of the airport specified or implied in the message. Otherwise, the following error response is returned:

ILLEGAL FLIGHT ID

The two flights specified as the two Field 02s in the NE message must be assigned the same vertex when in the same airport configuration for ASP or ESP. If not assigned to the same vertex, the following Rejection message is returned:

ILLEGAL FLIGHT ID

The two flights specified as the two Field 02s of the NE message, when in different configurations for ASP or ESP, must be assigned the same meter fix in ASP or the same vertex in ESP. Otherwise, the following Rejection message is returned:

ILLEGAL FLIGHT ID

The two flights specified as the two Field 02s of the NE message must have times such that the later flight can make the time assigned to the earlier flight. If this condition is not met, the following Rejection message is returned:

INVALID TIME

8.8.6 Special Logic Check

For an NE message, there must be sufficient entries available in the ESP/ASP communication table. Otherwise, the following rejection message is returned:

NO ENTRIES AVAILABLE

8.8.7 Processing

Upon acceptance of an NE message, the following defines the processing for manually swapping two entries:

For ASP flights:

a. Both flights are in same configuration:

   The VTA priority values for these two flights will be swapped. Using the time to fly from the meter fix to vertex for each flight, the meter fix priority values for each will be recalculated.

   MFTp = VTAp - Tiny

   where:

   MFTp is the meter fix priority
   VTAp is the VTA priority
   Tiny is the time to fly from the meter fix to the vertex

b. Both flights are in different configurations:

   The meter fix priority values will be swapped. Using the time to fly from the meter fix to vertex for each flight, the VTA priority values will be recalculated.

For ASP and ESP, if the priority value of a nonfrozen flight is swapped with that of a frozen flight, both flights reassigned metering times will be frozen.

If the NE message is entered where either one or both flights specified in the message have not yet reached the priority region (P11 minutes), then both flights will have their VTA priority values established. At that point, the current VTA will become the VTA priority value. After establishing VTA priority values, the swapping of these priority values will occur.

8.8.8 Results

Acceptance of an NE message results in an acceptance response being returned to the entering adapted metering position. After an accepted NE message has been processed, the observable responses described below will occur. A rejected message will result in the appropriate error response being returned at the entering device.

Upon acceptance of an NE message, the CLT/CVTs are exchanged and the meter/sector list positions for the two specified flights are updated to reflect the exchanged CLT/CVTs if the flights are in different configurations, VTAs and meter fix/outer fix times and delays are recalculated for ASP flights. Any changes will be reflected in the displayed entries for the flights specified in the NE message.

8.9 SEQUENCE (NJ)

The Sequence Message (NJ) is used to sequence metered entries for the metering position list and sector metering lists for the metering airport specified or implied in the message.

The NJ message is composed of the message type field followed by up to three optional fields. The combination and order of the entered fields determine which of the following metering actions is performed.

a. Sequence the entries in the metering position list and sector metering lists for the airport specified or implied in the message with the option to retain down-arrow flights in the metering position list.

b. Sequence only those entries in the metering position and sector metering lists for the airport specified or implied in the message that have a CLT/CVT time at or after the time specified in the message with the option to retain down-arrow flights in the metering position lists.

8.9.1 Message Content and Sources

An NJ message can be entered only at an adapted metering position. Described below are the two methods of entering an NJ message:

a. At the “R” position, an NJ message can be entered using the Met List Key, Function Key #9, and the R-position alphanumeric keyboard. Field 01 is automatically generated via Category/Function Key suppression, and thus, Field 01 is not to be entered at the R-position alphanumeric keyboard.

b. At the associated “D” position, an NJ message can be entered through the D-position alphanumeric keyboard. The letters “NJ” are required to be the first entered field and constitute Field 01 as described within this section.

The following are the legal sources (at adapted metering positions) and fields for the NJ message:

SOURCE	FIELD
R-position	01 (13) (86) (98)
D-position	01 (13) (86) (98)

8.9.2 Acceptance Checking

The NJ message contains the message type designator, optional fields airport identification, time, and metering action indicator. The acceptance checks specified are for field format, order of input fields, and field logic.

8.9.3 Field Format

a. Field Contents

01	Message Type (NJ)
13	3-character alphanumeric airport
86	4-digit time
98	The letter "K"

b. Examples

Fields	01	(13)	(86)	(98)
Examples	NJ	ACY		
	NJ	ACY	0220	K
	NJ		0123	
	NJ			

8.9.3.1 Field 01 (Message Type)

If an NJ message is input from any source other than a legal one, the following Rejection message is returned:

ILLEGAL SOURCE

8.9.3.2 Field 13 (Location Identifier)

Field 13, when entered in an NJ message, will contain the airport identifier. Field 13 must be in the following format:

aaa

If any other format for Field 13 is entered, the following Rejection message is returned:

cofie FORMAT

8.9.3.3 Field 86 (Time)

Field 86 is an optional field used in the NJ message. When Field 86 is specified, only those flights in the metering list of the NJ message that have a CLT/CVT time at or later than the time in the message are affected. Field 86 contains the time. The only permissible format is:

dddd

Otherwise, the following Rejection message is returned:

cofie FORMAT

8.9.3.4 Field 98 (Metering Action Indicator)

Field 98 is an optional field used in the NJ message. This field, when present, specifies that down-arrow flights in the metering position list for the airport specified or implied in the message are not to be deleted from the metering list display. Field 98, when entered in an NJ message, must contain the single character "K." Otherwise, the following Rejection message is returned:

cofie FORMAT

8.9.4 Field Order

Field 01 may be followed by up to three optional fields.

If only one field with four or more characters follows Field 01, it will be processed as Field 86. If the only specified field has one character, it will be processed as Field 98. If the only specified field contains two or three characters, it will be processed as Field 13.

If two fields follow Field 01 and the first has three characters or fewer, it will be processed as Field 13. If the first field has four or more characters, it will be processed as a Field 86, and the second of the two optional fields will be processed as a Field 98. If the second optional field has more than one character, it will be processed as a Field 86. If the second field has only one character, it will be processed as a Field 98.

If three fields follow Field 01, they will be processed, in order, as a Field 13, a Field 86, and a Field 98, respectively.

8.9.5 Field Logic

8.9.5.1 Field 01 (Message Type)

An NJ message can only be entered when metering processing is in effect (Parameter METR is "ON"). Otherwise, the following Rejection message is returned:

FUNCTION TIED OFF

If Field 01 is followed by more than three fields, the following Rejection message is returned:

MESSAGE TOO LONG

8.9.5.2 Field 13 (Location Identifier)

Field 13 must be input when the desired airport metering list display is not already in "ON" status at the entering metering position. Otherwise, the message will be applied to the currently displayed airport. If no airport metering position list is currently displayed at the entering metering position and Field 13 is not entered, the following Rejection message is returned:

DESTINATION FIELD REQUIRED

If the desired airport metering list is in "ON" status at the entering metering position, Field 13 may be omitted and the NJ message will be applied to the airport metering position list currently being displayed.

If Field 13 contains an adapted ASP or ESP airport that is currently combined as the peripheral airport of an airport combination, the following error indicator is returned:

AIRPORT IS COMBINED

If Field 13 contains characters that do not match ASP or ESP airport that are adapted for metering, the following error indicator is returned:

NOT ADAPTED

NJ messages that contain a valid Field 13, if otherwise acceptable, will apply to the metering list for the airport specified in the message regardless of the adapted metering position device from which the message was entered.

8.9.5.3 Field 86 (Time)

For Field 86, the first two digits (hours) must not exceed 23 and the last two digits (minutes) must not exceed 59. Otherwise, the following Rejection message is returned:

INVALID TIME

If the time at which the message is entered is before 1200 hours, a valid time for Field 86 is any time after the time the message was entered up to 2359 hours.

If the time at which the message is entered is at or after 1200 hours, then a valid time for Field 86 is any time up to 12 hours before the time the message is entered.

Any Field 86 not adhering to either of the two conditions above will generate the following Rejection message:

INVALID TIME

The time specified in Field 86, when entered in the NJ message, minus 0.5 minute will be used in the processing of the NJ message. If Field 86 is not entered in the NJ message, the current time will be used in the processing of the NJ message.

8.9.5.4 Field 98 (Metering Action Indicator)

No logic checks apply.

8.9.5.5 Special Logic Check

For the NJ message, there must be sufficient entries available in the ESP/ASP communication table. Otherwise, the following Rejection message is returned.

NO ENTRIES AVAILABLE

8.9.6 Processing

Processing an acceptable NJ message will depend upon the metering action indicated by the order and content of the input fields. Upon acceptance of the NJ message, the following defines the various conditions affecting sequencing.

Generally, the metered entries in the metering position and sector metering lists for the airport specified or implied in the message will be sequenced with the two exceptions described below:

a. If a Field 86 is present in the NJ message, only those entries in the metering position list of the message with a CLT/CVT time at or after the time in the message are to be sequenced in the metering position and appropriate sector lists.

b. If a Field 98 is present in the NJ message, down-arrow entries in the metering position list for the airport specified or implied in the message will be retained for metering display and processing.

8.9.7 Results

Acceptance of an NJ message results in an acceptance response being returned to the entering adapted metering position. An acceptable NJ message will cause the appropriate metering position and sector metering lists to be sequenced. A rejected message will result in the appropriate error response being returned to the entering device.

8.10 INSTRUMENT APPROACH COUNT (IC)

The Instrument Approach Count Message (IC) is used for three purposes: to adjust (increment or decrement) a specified subcategory count for an airport, to change the instrument approach count eligibility status for an airport, or to display the current status and instrument approach count totals for an airport.

8.10.1 Message Content and Source

The legal sources and fields of an IC message are as follows:

SOURCE	FIELDS
D-position	01 13 (36) (46)

8.10.2 Acceptance Checking

The IC message contains the message type and airport identifier, followed by either an action indicator or adjustment data. An action indicator (Field 36) and adjustment data (Field 46) cannot both appear in the same message. For format checking purposes, if the first field following the airport identifier is Field 46, any subsequent fields will be processed using Field 46 rules.

8.10.3 Format

8.10.3.1 Field 13

The airport identifier consists of two to five characters. Otherwise, the following Rejection message is returned:

REJECT - cofie FORMAT

8.10.3.2 Field 36

The action indicator must be one of the following:

AUTO - count instrument approaches based on stored weather
ON - count instrument approaches regardless of stored weather
OFF - do not count instrument approaches

Otherwise, the following Rejection message is returned:

REJECT - cofie FORMAT

8.10.3.3 Field 46

The Instrument Approach Count adjustment data must contain five characters in one of the following formats:

LL+dd
LL-dd

where:

LL = one of the following subcategories:

AC - Air Carrier
AT - Air Taxi
GA - General Aviation
MI - Military
\+ directs incrementation
\- directs decrementation
dd is a numerical value from 01 to 99 to be added or subtracted from the specified instrument approach count subcategory for the entered airport.

If the entered subcategory is not the characters AC, AT, GA, or MI, the following Rejection message is returned:

REJECT - cofie ILLEGAL CATEGORY

If any other format error is detected, the following Rejection message is returned:

REJECT - cofie FORMAT

8.10.4 Logic

8.10.4.1 Field 13

If the entered airport is not adapted as eligible for instrument approach count, the following Rejection message is returned:

REJECT - cofie NOT ADAPTED

8.10.4.2 Field 36

If the entered action indicator is AUTO and no weather station is adapted for the airport, the following Rejection message is returned:

REJECT - cofie ILLEGAL ACTION INDICATOR

8.10.4.3 Field 46

If the same subcategory is specified multiple times within the same message, the following Rejection message is returned:

REJECT - DUPLICATED ACTION

If, when adjusting the total count of the specified subcategory, the value entered would cause either a negative count or an overflow condition (a value greater than 99), no adjustment will take place. The following Rejection message is returned:

REJECT - cofie INVALID ADJUSTMENT

8.10.4.4 Processing

If an IC message with Field 46 is used to increment or decrement the instrument approach count for one or more of the four subcategories, the count will be added or subtracted from the subcategory(s) of the airport specified. If an IC message is entered with Field 36 to change the status to AUTO, the instrument approach count will be taken based on stored weather. A status of ON will count approaches regardless of stored weather, and a status of OFF will terminate counting.

8.10.5 Results

The instrument approach status/counts will be output to the entering device when the IC message is entered with only Field 13.

8.11 MAP REQUEST (MR)

This message is used to provide a specific Geomap for use with an R-position.

8.11.1 Format

a. Fields

DEVICE	FIELDS
D and A-positions	01 16 66

b. Field Contents

01 Message Type - (MR)
16 Output Routing
66 Map Identification

The content is:

La(a) (a) (a) (a) (a) (a)

c. Example

MR 31 H27JAX

The message requests that the R-position's sector 31 display geomap be identified as H27JAX.

d. Error Indicators

(cofie) FORMAT
MESSAGE TOO LONG
MESSAGE TOO SHORT

8.11.2 Logic

a. The map record specified must exist on the NAS system disk.

b. This message may be entered only from the Systems Engineer, adapted KVDT position, and eligible D and A-positions.

c. If Surveillance Tie-Off is in effect, the input message will be rejected.

d. The Map Request entered from a DYSIM D-position or A-position device must be routed to a DYSIM training sector that has an adapted or configured R-position.

e. Error Indicators

FUNCTION TIED OFF
ILLEGAL SOURCE
MAP UNAVAILABLE
NON-ADAPTED SECTOR
PVD NOT CONFIGURED
TRNG/LIVE INCOMPATIBLE

8.11.3 Processing

The map name for the sector specified will be sent to DSR. If the situation display center coordinates associated with the requested map differ from the previously sent center coordinates for the specified sector, the new coordinates will be sent to DSR.

8.11.4 Resultant Outputs

The Sector Position/Display Number message will be sent to DSR containing the new map name and center coordinates for the specified sector R-position.

Appendix A

CONTROLLER MESSAGE INPUT FORMATS

APPENDIX A - CONTROLLER MESSAGE INPUT FORMATS

Table A-1 shows examples of allowed formats for each input action using the Keyboard Hard-Labeled Function Keys, Message Type, or None (QN)*. Following Table A-1 are additional rules for differentiating between input actions. Refer to Sections 4 through 8 for complete message format and logic requirements.

TABLE A-1. R-CONTROLLER MESSAGE INPUT FORMATS

Action	Format		Remarks
Message Type: None (QN)			Can also be input via Assigned Altitude hard-labeled function key, "Assgn Alt"
Data Block Offset	d /d d/d dd	FLID FLID FLID	
Forced Data Block	FLID		Not being handed off to or from inputting sector
Initiate Handoff	dd Ldd LLL(dL) L(dL)	FLID FLID FLID FLID	"OTP" and "VFR" not allowed for LLL
Accept Handoff	FLID		Being handed off to inputting sector, or being handed off and under control of inputting sector, or input with /OK and no other data
Emergency Airport Display	AI AI	TBE aa(a)(a)(a)	Cannot be entered in combination with any other QN/QZ message type

*See rule "i" following Table A-1

TABLE A-1. R-CONTROLLER MESSAGE INPUT FORMATS *(Continued)*

Action	Format		Remarks
Message Type: Assigned Altitude (QZ)			
Assigned Altitude	ddd	FLID	Cannot be entered in the same message as an Initiate Handoff Action
	OTP	FLID	
	dddBddd	FLID	
	VFR	FLID	
	OTP/ddd	FLID	May also be input in conjunction with a QT Action
	VFR/ddd	FLID	
Message Type: Track (QT)			
Track	TB	FLID	Computer determined tracking mode
	//aa(a)(a)(a)(/)(a)(a)(a)(a)(a)(a)	FLID	
	TBP FR	FLID	FREE track
	//aa(a)(a)(a)(/)(a)(a)(a)(a)(a)(a) FR	FLID	
	Optional fields to be input anywhere and in any order before FLID and after QAK or message type.		
	dd		Heading
	Sdd(d)(d)		Speed
	ddd		Assigned Altitude
	OTP		
	OTP/ddd		
	dddBddd		
	VFR		
	VFR/ddd		
	P		Primary Track Class Indicator
Coast Track	CT	FLID	
	CT TBP	FLID	
	CT //aa(a)(a)(a)(/)(a)(a)(a)(a)(a)(a)	FLID	

TABLE A-1. R-CONTROLLER MESSAGE INPUT FORMATS *(Continued)*

Action	Format		Remarks
	Optional fields to be input anywhere and in any order before FLID and after message type.		
	dd		Heading
	Sdd(d)(d)		Speed
	ddd OTP OTP/ddd dddBddd VFR VFR/ddd		Assigned Altitude
	P		Primary Track Class Indicator
Convert Point Out Track	C C TB C //aa(a)(a)(a)(/)(a)(a)(a)(a)(a)(a)	FLID FLID FLID	
	Optional fields to be input anywhere and in any order before the FLID and after the message type.		
	dd		Heading
	Sdd(d)(d)		Speed
	ddd OTP OTP/ddd dddBddd VFR VFR/ddd		Assigned Altitude
	P		Primary Track Class Indicator

TABLE A-1. R-CONTROLLER MESSAGE INPUT FORMATS *(Continued)*

Action	Format		Remarks
Message Type: Report (QR)			
Reported Altitude	ddd FLID	FLID	
Message Type: Cancel (QX)			
Remove Strip	FP	FLID	
Drop Track Only	FLID		
Message Type: CODE (QB)			Discrete Code not allowed for FLID in CODE actions
Discrete Code Request	FLID		Can also be message type DQ at D-position
Code Modification	dddd	FLID	
Qualifier Modification	L 0	FLID FLID	 Number "0" (Zero)
Code Insert	dddd* IN	 dddd*	
Code Delete	dddd* DE	 dddd*	
Message Type: HOLD (QH)			
Hold	FLID dddd aa(a)(a)(a)FLID aa(a)(a)(a)/ddddFLID	FLID	
Message Type: PVD (QP)			
Request/Suppress Data Block	FLID		
Point Out	(L) dd*	FLID	A maximum of four occurrences of "dd" and/or "Ldd" may be input

TABLE A-1. R-CONTROLLER MESSAGE INPUT FORMATS *(Continued)*

Action	Format		Remarks
Reposition List	L	TBE	
Meter Fix/Outer Fix Metering List Entry Suppression	L FLID (FLID) (FLID) (FLID) (FLID)		L must be letter "M" TB not legal FLID
Request/Delete DRI	J FLID		To delete, reenter
Message Type: CRD (QD)			
Altimeter Setting Request	aa(a)(a)(a)*		
Altimeter Setting Suppress	Nothing		
Modify Altitude Limits	dddBddd		
Message Type: Route (QU)			
Track Reroute	TBP*(↓) aa(a)(a)(a)*	FLID FLID	(↓) indicates new destination. (*) may be used instead to suppress PARs.
Route Display	(d)d FLID	FLID	
Message Type: Select Automatic Handoff (QA)	dd* L* LLL* FLID Nothing		Inhibits/enables auto handoff to specified sector/facility or for specified or all flights in entering sector. "OTP" and "VFR" not allowed for LLL.
Message Type: Readout (QF)			
Flight Plan Readout Request	FLID		
ICAO Associated Data Readout Request	I FLID		To output only the ICAO Associated Data, if present

TABLE A-1. R-CONTROLLER MESSAGE INPUT FORMATS *(Continued)*

Action	Format	Remarks
ICAO CPL Formatted Message Request	C FLID	To output the ICAO CPL message format or only those ICAO elements that are incomplete. If the flight does not exit directly to a Non-U.S. Automated Facility, only an explanatory message will be output.
Message Type: Interim Altitude (QQ)	FLID	To delete an interim altitude
	ddd FLID	To insert an interim altitude
	Rddd FLID	To insert an interim altitude and use it as a reported altitude
Message Type: Suppress/Request Conflict Alert Pair (CO)	TBO	TB ENTER positioned on first character of Conflict Alert list entry
Message Type: Group Suppression (SG)		
Initialize/Suppress Group	(L) FLID	TB not legal FLID
Suppress Group	(L) dd	Up to 15 FLIDs
Additions to Group	(L) dd FLID	
Deletions from Group	Ldd FLID	
Unsuppress Group	Ldd	
Request Group Printout	Ldd	
Message Type: Quick Look (QL)	(d)dd*	To quick look one or more sectors
	Nothing	To cancel a quick look
Message Type: Longitudinal Scale (LS)	Nothing	To display a longitudinal scale

TABLE A-1. R-CONTROLLER MESSAGE INPUT FORMATS *(Continued)*

Action	Format		Remarks
	d(d)		To display a longitudinal scale
	d(d) TBE		To display a longitudinal scale
	TBP TBE		To display a longitudinal scale
	TBE		To display a longitudinal scale
	d(d) TBP TBE		To display a longitudinal scale
	d(d)		To modify the length of a displayed longitudinal scale
	(TBP) TBE		To move a longitudinal scale
	Nothing		To delete a longitudinal scale
Message Type: See-All (SA)	(d)dd		To see-all a target sector
Message Type: Update Flight Plan Readout (QM)	1-5	Number of Flights	This message is generated as a result of the Update button on the Flight Plan Read-out View being selected. There can be 1-5 AID/CID pairs entered. This message is not legal from a D-position.
	La(a)(a)(a)(a)(a) or +La(a)(a)(a)(a)	AID	
	dda	CID	

a = alphanumeric
d = digit
L = letter
TBP = Trackball Pick (R-position only)
TBE = Trackball Enter (R-position only)
FLID = Flight Identification
( ) = Optional character or optional trackball pick
* = Multiple fields permitted

Additional rules for R-Controller Message Input at R-position or D-position console:

a. The discrete beacon code of an aircraft may not be used for flight identification in the Code Message Type.

b. Within one Message Type, more than one action may be input by including various data fields in any order. Those actions which require a FLID will apply to the FLID at the end of the message. Any feasible combination is permissible. However, a combination of mutually exclusive actions like Reposition List which requires a trackball and Request/Suppress Data Block which requires that FLID be the last data field are not acceptable. If a message type of QN or QZ is used to offset a CDB, no other actions may be included in the message since the Data Block Offset is the only QN/QZ action applicable to CDBs. If a message type of QN, QZ, QL, LS, or SA is used to enter an Emergency Airport message, no other actions may be included in the message.

c. If a Code Insert or Code Delete action is combined with any other code action except Code Insert or Code Delete, the Action Type (IN or DE) will be required immediately preceding the string of codes to be inserted or deleted. Other codes will be interpreted as applying to the input FLID.

d. If an aircraft is in the transfer mode and the receiving sector enters a None or Assigned Altitude message type (excluding a Data Block Offset action) for that aircraft, an Accept Handoff action is also interpreted. The exception to this rule occurs when the message contains only an Initiate Handoff action; then the Accept Handoff action will not be interpreted, and the message will be rejected.

e. The entry of the None or Assigned Altitude Message Types containing only a FLID (normally interpreted as the Forced Data Block action) is interpreted as the Accept Handoff action when the aircraft is in the transfer mode and is addressed to or is under control of the sector making the input.

f. The entry of None or Assigned Altitude Message Types containing only a "/OK" and a FLID is interpreted as an Accept Handoff action. This action will transfer control of an aircraft not in the transfer mode (or not addressed to the entering sector) to the entering sector if that sector's R-position console is configured.

g. The entry of None or Assigned Altitude Message Types containing a /OK, a FLID, and one or more additional data fields will not be interpreted as an Accept Handoff unless the aircraft is in the transfer mode and the message was entered from the receiving sector.

h. The Assigned Altitude Action can be input using either the Assigned Altitude or Track Message types.

i. The None (QN) message type inputs are assumed if no Keyboard hard-labeled function key is depressed at the R-position console only. The actions allowable under the QN message type can also be input by using the QZ message type at the R-position console or the QN or QZ message types at the CED, and will be processed, upon acceptance, even though an Assigned Altitude field is not included in the input.

j. When no track exists for a flight having a Start Track (QT) message entered with an assigned altitude, and a DP, PDR, or PDAR was applied, the entered altitude will be compared with the adapted interim altitude to ascertain whether or not to display the adapted interim altitude in the full data block.

k. The Longitudinal Scale and Quick Look Message may not be entered from a D-position.

l. The See-All Message Type may be entered only from an Area Manager or Traffic Manager position. The See-All action is canceled by pressing the CLEAR key.

Examples:

a. Offset Data Block and Initiate Handoff in one action:

4 31 EA227 (None (QN) message type input at the R-position console only)

QN 7 07 123 (D-position console input)

b. Code Modification (to 2414), Qualifier Modification, Code Insert (2401 and 3100), and Code Delete (0413) in one action.

QB 2414 IN 2401 3100 DE 0413 A NA163

c. Tracked aircraft not in transfer mode:

AA106 Forced Data Block (None (QN) message type input at the R-position console only)

d. Aircraft in transfer (intracenter) mode and not addressed to the entering sector:

QZ 1 /OK 310 Offset Data Block, Assigned

AA106 Accept, No Accept Handoff

/OK AA106 Accept Handoff (None (QN) message type input at the R-position console only)

e. Aircraft in transfer mode and entering sector is neither the sending nor receiving sector:

AA106 Forced Data Block (None (QN) message type input at the R-position console only)

f. Aircraft in transfer mode and entering sector is the sending sector:

AA106 Accept Handoff (None (QN) message type input at the R-position console only)

g. Aircraft in transfer mode and addressed to the entering sector:

AL686	Accept Handoff, No Forced Data Block (None (QN) message type input at the R-position console only)
QZ 180 PA2	Accept Handoff, Assigned Altitude
4 AA106	Offset Data Block, No Accept Handoff, No Forced Data Block (None (QN) message type input at the R-position console only)

Appendix B

MESSAGE FIELDS

Appendix B - MESSAGE FIELDS

Field Reference Number	Field Name
00	Source Identification
01	Message Type
02	Flight Identification
03	Aircraft Data
04	Beacon Code
05	Speed
06	Coordination Fix
07	Coordination Time
08	Assigned Altitude
09	Requested Altitude
10	Route
11	Remarks
12	Field Reference Number or Field Reference Abbreviation
13	Location Identifier
14	Sector Identifier
15	Message Cancelation Group
16	Output Routing

Appendix B - MESSAGE FIELDS *(Cont'd)*

Field Reference Number	Field Name
17	Amendment, Correction, or ICAO Original Data
18	Progress Report
19	Upper Wind Altitude
20	Upper Wind Data
21	Hold Data
22	Mission Data
23	Track Position Velocity Components
25	Referent Message Descriptor
26	Departure Point
27	Destination
28	ETE/ETA or Arrival Time
30	Sector Change
31	Data Selection Indicator
32	Planned Shutdown Start Time
33	Planned Shutdown Stop Time
34	Altimeter Data

Appendix B - MESSAGE FIELDS *(Cont'd)*

Field Reference Number	Field Name
35	Altimeter Data Entrance Time
36	Action Indicator
37	Parameter Designator
38	Parameter Value
39	Change Status
40	Control Figures
41	Established Beacon Code
42	Flight Data Selection
43	LDN
44	Traffic Count Adjustment Data
45	Weather Data
46	Instrument Approach Count Adjustment Data
48	Accepting Sector
49	Route Display Time
50	DC Order Format Entry
51	Radar Site Identifier

Appendix B - MESSAGE FIELDS *(Cont'd)*

Field Reference Number	Field Name
53	Radar Parameter Modification
54	Reported Altitude
55	Processing Mode
56	Heading
57	DI (Display Data Availability List Item) Number
58	Processing Override
59	Offset Direction/Leader Length
60	Logic Check Override
61	List Display Identifier
62	Registration and Collimation Process
63	Radar Data Type
64	Action Type
65	Trackball Coordinates
66	Map Data
67	Time

Appendix B - MESSAGE FIELDS *(Cont'd)*

Field Reference Number	Field Name
68	Fix
70	Destination Indicator
71	Receiving Sector Number/Position/Location
72	Days of Operation Data
73	Level Designator
74	Primary Track Class Indicator
75	File Designator
76	Interim Altitude Data
77	Keyboard Action Counts Indicator
78	Training Sector Type Designator
79	Training Sector Numbers
80	Training Sector Action Indicator
81	Group Identification Number
82	FAD Flow Calculation Times
84	Number of Scans

Appendix B - MESSAGE FIELDS *(Cont'd)*

Field Reference Number	Field Name
85	E-MSAW Message Indicator
86	Metering Time Field
87	Airport Configuration Name
88	Metering Arrival Rate/Delay
89	Metering List Display Type Indicator
91	Delay
92	Estimated Departure Clearance Time
93	Vertex Identification
94	Work Indicator
98	Metering Action Indicator
101	Online Radar Recording/Online QARS Switch
104	Target Coordinates or North Mark Data
105	Beacon Code and Mode C Altitude
112	Sector-by-Sector System Transition Mode Control
113	Sector Number

Appendix B - MESSAGE FIELDS *(Cont'd)*

Field Reference Number	Field Name
114	Controlling Equipment
156	DARC Mode Value
200	Length in Nautical Miles
201	Location
202	Orientation
203	User Identification
204	Position Designator
205	New Password/New Password
206	Modify Position Designators/User Password Action Type
207	Add User Profile Action Type
208	Delete User Profile Action Type
209	Current Password/New Password/ New Password
210	Crew Number
211	Sign Out Time
213	Sign In Time

Field Reference Number	Field Name
214	Sector Identification
215	Generate Host Sign In Message Indicator
216	Current Password
217	Number of Flights
218	Readout Status
219	Error Text
220	Route Length
221	Remarks Length
222	Error Length

Appendix C

ACRONYMS

APPENDIX C - ACRONYMS

A

ABCT - Active Boundary Crossing Time
ABLI - Attention Blinking Light Interval
AHI - Automatic Handoff Initiation
AID - Aircraft Identification
ARTS - Automated Radar Terminal System
ASP - Arrival Sequencing Program
ASPH - ARTS Specific Position Handoff Eligibility

B

BSOP - Blank Strip Override Parameter

C

CASP - Classified Aircraft Speed Parameter
CDB - Conflict Data Block
CDC - Computer Display Channel
CFAF - Central Flow Automation Facility
CID - Computer Identification
CLT - Calculated Landing Time
Cofie - Contents of Field in Error
CRD - Computer Readout Device
CTA - Controlled Time of Arrival
CVT - Calculated Vertex Time

D

DARC - Direct Access Radar Channel
DDDI - Drop Data Block Interval
DP - Departure Procedure
DRIR - Distance Reference Indicator Radius
DSPI - Departure Strip Printing Interval
DSR - Display System Replacement
DYSIM - Dynamic Simulator

E

EIPS - Extended Interfacility Processing Switch
ESP - En Route Sequencing Program
ESTI - Estimated Time Interval
ETA - Estimated Time of Arrival
ETE - Estimated Time En Route

F

FDB - Full Data Block
FDEP - Flight Data Entry and Printout
FDP - Flight Data Processing
FIXD - Fix Distance Tolerance
FLAT Track - Flight Plan Aided Tracking

FLID - Flight Identification
FP - Flight Plan
FPA - Fix Posting Area
FRD - Fix Radial Distance
FSP - Flight Strip Printer

H

HALO - Distance Range Indicator (J ring)
HCS - HOST Computer System
HMTI - Hold Message Time Interval
HNH - Host Non-Host
HSP - High Speed Printer

I

ICAO - International Civil Aviation Organization
ISPI - Inbound Strip Printing Interval

K

KVDT - Keyboard Video Display Terminal

L

LAT/LONG - Latitude/Longitude
LDN - Logical Device Number

M

MBCT - Metering Boundary Crossing Time
M and C - Monitor and Control
MCI - Mode C Intruder
MFT- Meter Fix Time
MID - MCI Identification

N

NAS - National Airspace System
NDTI - Next Day Time Interval

O

OFT - Outer Fix Time

P

PAR - Preferential Arrival Route
PBCT - Proposed Boundary Crossing Time
PCDI - PVD Code Drop Interval
PDAR - Preferential Departure and Arrival Route
PDR - Preferential Departure Route
PFDI - Proposed Flight Plan Drop Interval

PTCI - Present Time Comparison Interval
PTUI - Posted Time Update Interval
PVD - Plan View Display

R

RDP - Radar Data Processing
RDRI - Route Display Request Interval

S

SAID - Simulated Aircraft Identification
SFER - Sector FDEP Eligibility Rules
SIM - Simulated
STAR - Standard Terminal Arrival Route
STSI - Suppress Track Symbology Interval

T

TA - Transfer Accept
TB - Trackball
TBE - Trackball Enter
TBP - Trackball Pick
TBSA - Trackball Search Area

U

URDT - Unspecified Route Display Time

V

VTA - Vertex Time of Arrival