Honeywell

Primus Epic® Communications Management Function (CMF)

Global Data Center Services Reference Guide

Honeywell International Inc.
Global Data Center
15001 NE 36th Street
Redmond, WA 98052 USA
888.634.3330 telephone
425.885.8100 telephone
425.885.8930 facsimile
www.mygdc.com
gfo@mygdc.com

Document 176-9001-983 Version 3

Primus Epic® Communications Management Function (CMF)

Gulfstream G350/G450/G500/G550
(Cert Delta / Cert Echo)

Global Data Center Services
Reference Guide

Honeywell International Inc.
Global Data Center
15001 NE 36th Street
Redmond, WA 98052 USA
888.634.3330 telephone
425.885.8100 telephone
425.885.8930 facsimile
www.mygdc.com
gfo@mygdc.com

Document 176-9001-983 Version 3

Table of Contents

Introduction

Thank you for choosing Honeywell's Global Data Center (GDC) as your provider of flight support services. Through the GDC, you will receive efficient flight planning and filing, vital textual and graphical weather reports and forecasts, essential air traffic services, and extensive communication capabilities. As a participant in the FAA's Collaborative Decision Making program, additional Flight Sentinel™ services utilize powerful real-time flight management methods to enhance safety and mitigate the adverse impact of weather and air traffic delays.

GDC Services

Flight Planning Services

Compute, file, uplink, and update domestic and international flight plans with wind optimized routes, Air Traffic Control (ATC) preferred routes, North Atlantic (NAT) Track routes, Central East Pacific routes ("Hawaiian Tracks"), customer stored routes, and pilot-defined random routes. Flight plans are computed based on performance data provided by the aircraft manufacturer, navigation database information, and winds and temperatures aloft forecasts from the National Weather Service.

Weather Services

Obtain preflight and inflight weather reports and forecasts, including route weather briefings, terminal weather reports and forecasts, winds and temperatures aloft forecasts, SIGMET forecasts, plain language weather forecasts, and graphical weather products.

Air Traffic Services

Receive Digital Automated Terminal Information Service (D-ATIS) reports, Terminal Weather Information for Pilots (TWIP) reports, Pre-Departure Clearances (PDCs), oceanic clearances via datalink, NAT Track Messages, and airport reservations (AROs).

Dispatching Services

Obtain aircraft takeoff reports, landing reports, automatic position reports, and flight reports via e-mail, cell phone text messaging, fax, and personal computer for accurate and timely flight following.

Messaging Services

Send free-text messages to the GDC, other datalink equipped aircraft subscribing to GDC services, e-mail addresses, telephone numbers, fax machines, ACARS network addresses, and AFTN addresses.

Flight Sentinel™

Flight Sentinel provides cost saving solutions to terminal congestion or adverse weather through personalized flight planning, live flight monitoring, and real-time FAA advisories delivered via datalink communications.

Fuel Services

Obtain fuel order or quote via www.mygdc.com, email, or a phone call to GDC's fuel desk. Take advantage of pre-arranged fuel prices at over 1500 locations worldwide.

International Trip Support

International Trip Support (ITS) services include ground handling, over flight and landing permits, international flight planning and weather, airport information/slots, fuel arrangements, hotel reservations, ground transportation, worldwide flight following (Flight Sentinel™), and catering.

GDC Services Access

Telephone Access

Call the GDC twenty-four hours a day at 888.634.3330 or 425.885.8100 to speak with a Flight Data Specialist or Flight Control Specialist, who are aviation professionals able to provide all GDC services.

Web Access

Visit the GDC's website at www.mygdc.com to access an increasing number of services available from any computer with Web access, including flight planning and filing, textual and graphical weather reports and forecasts, and datalink messaging.

BlackBerry® / PDA Access

Request GDC services, such as flight plans, weather, fuel, airport reservations, Coded Departure Routes (CDR), position reports, and datalink messages via a BlackBerry® or PDA device.

Datalink Access

Request GDC services via datalink through Honeywell's Primus Epic® Communications Management Function (CMF) datalink platform. Datalink, or the Aircraft Communications Addressing and Reporting System (ACARS), is a robust two-way data communications system between aircraft and ground systems. A complete datalink communication, which may be generated either manually or automatically, is referred to as a datalink message. Messages from the aircraft to the ground are referred to as downlink messages and messages from the ground to the aircraft are referred to as uplink messages.

General Information

GDC services may be accessed via datalink through Honeywell's Primus Epic® Communications Management Function (CMF) datalink platform. This reference guide applies to Gulfstream G350/G450/G500/G550 aircraft with the Cert Delta or Cert Echo software load, which includes the GDC Airline Modifiable Information (AMI) table part numbers 998-3617-501 or 998-3617-502.

Datalink System

Datalink Avionics

As part of the Primus Epic integrated avionics system, the CMF is a next-generation datalink platform designed for both software flexibility and hardware expandability. The CMF communicates primarily through a Very High Frequency (VHF) transceiver, although optional airborne equipment may include a Satellite Communications (SATCOM) system to provide datalink capability via Ultra High Frequency (UHF) transmissions to satellites. The Epic Multifunction Control Display Units (MCDUs) provide the interface between the flight crew and the CMF.

Datalink Infrastructure

By default, the Epic CMF communicates via the VHF Digital Link Mode 2, a bit-oriented, air to ground and ground to ground data link technology that delivers information at 31.5 kilobits per second (kbps). Alternately, the EPIC CMF communicates via a ground-based Aircraft Communications Addressing and Reporting System (ACARS) VHF network at a rate of 2400 bits per second (bps). The ACARS network includes the worldwide Société Internationale de Télécommunications Aéronautiques (SITA) subnetwork, China's Aviation Data Communications Corporation (ADCC) subnetwork, the Aeronautical Radio of Thailand Ltd. (AEROTHAI) subnetwork, the Avicom Japan Co. Ltd. (AVICOM) subnetwork, and Brazil's Departamento de Controle do Espaço Áereo (DECEÁ) subnetwork. Based on position information provided by the aircraft Flight Management Systems (FMSs), the CMF automatically tunes the VHF transceiver to the appropriate subnetwork. Efficient tuning requires that FMS position initialization be completed. In areas where VHF coverage is unavailable, the CMF may use the Inmarsat Aero-H, Aero-H+, or Aero-I satellite-based UHF networks at rates of up to 9600 bps. This provides both packet mode (datalink) and circuit mode (voice and data) capabilities on multiple channels. The CMF switches to and from the satellite UHF network based on the availability of ground-based VHF network coverage.

Datalink Service Provider

As a provider of flight support services, the GDC is at the hub of the system. In addition to performing host processing for CMF datalink message traffic, the GDC has telephone, fax, and network connections to domestic and international ATC facilities, Fixed Base Operators (FBOs), multiple weather providers, and customer flight departments. Customers who choose the GDC as the flight support services provider to their aircraft equipped with the Primus Epic CMF gain significant advantages because Honeywell provides the datalink hardware, software, and services.

Line of Sight

All Epic CMF transmissions require line of sight to a VHF ground station or Inmarsat satellite as appropriate. Please refer to Appendix B for a map of GDC datalink coverage.

Establishing and maintaining line of sight is most often a concern when transmitting VHF on the ground due to the curvature of the Earth, high surrounding terrain, and manmade structures. VHF transmissions from many airports are simply not possible because the nearest VHF ground station is below the horizon or blocked by surrounding terrain. Even at an airport with a local VHF ground station, VHF transmissions from certain areas of the airport may not be successful due to manmade structures obstructing line of sight. In flight, VHF coverage is normally excellent, although coverage limitations may exist in remote areas of the world or at low altitudes.

Transmitting via satellite while on the ground is generally reliable, although line of sight issues may still arise due to surrounding terrain and manmade structures because the Inmarsat satellites are in equatorial geostationary orbits. In flight, the curvature of the Earth is a concern only at latitudes greater than 70° North or South. Except at these high latitudes, satellite coverage while in flight is seamless.

Epic CMF Configuration

Configuration of the Epic CMF is performed by modifying certain parameters stored in the Primus Epic Aircraft Personality Modules (APMs). Parameters stored in the APMs, which are also used by elements of the Primus Epic system other than the CMF, include the aircraft registration (or permanent callsign), ACARS airline identifier ("GS" for GDC services), ICAO airline identifier ("GDC" for GDC services), and ICAO aircraft type designator (available at http://www.icao.int/anb/ais/8643/index.cfm). Correct configuration of these parameters is required for proper CMF operation and ACARS routing. APM parameters are configured by creating or modifying an

APM settings file using a PC-based software tool developed by Honeywell and provided by the aircraft manufacturer.

Epic CMF Software

The Epic CMF uses software developed by the GDC which is referred to as an Airline Modifiable Information (AMI) table. This allows the GDC to offer AMI tables with MCDU displays and CMF datalink messages that correspond to its evolving array of services. This reference guide applies to Gulfstream G350/G450/G500/G550 aircraft with the Cert Delta or Cert Echo software load, which includes the GDC AMI table part numbers 998-3617-501 or 998-3617-502. Use of the AMI table developed by the GDC is required in order to access full GDC services via datalink.

Epic CMF Displays

Display Access

To access the Epic CMF displays, press the DLK (datalink) function key on the MCDU. If a single new message is available, the new message is accessed directly, or if multiple new messages are available, the NEW MESSAGES display is accessed. Otherwise, the MAIN MENU display is accessed.

Display Groups

Datalink functions provided by the CMF are accessible through four groups of displays: Flight Management System (FMS) displays, Aeronautical Operational Communication (AOC) displays, Air Traffic Services (ATS) displays, and system displays.

Flight Management System (FMS) Displays

FMS displays provide access to FMS-related datalink functions, such as requesting flight plans and winds and temperatures aloft forecasts for the FMS wind model. These functions require FMS performance initialization to be completed and confirmed.

Aeronautical Operational Communication (AOC) Displays

AOC displays are defined by Honeywell as part of the AMI database, which allows Honeywell to add, modify, or delete displays as needed. Functions available through the AOC displays include free-text messages, terminal weather reports and forecasts, D-ATIS reports, and Oceanic Clearance Delivery. On the AOC displays, 'action' SEND and PRINT prompts are yellow, uplink text blocks and non-modifiable parameters are blue, and modifiable parameters are green. All other text is white. Additionally, the solicit character for a mandatory entry is a □ (box) and the solicit character for an optional entry is a - (dash). The solicit character for a display prompt is a < or > (caret) and the solicit character for an 'action' SEND or PRINT prompt is an * (asterisk).

SEND prompts on the AOC displays are available only when all mandatory entries have been completed. In addition, the current transmission mode is shown above the prompt so the user is aware of how the downlink message will be sent. Possible values include GRD VHF (ground-based VHF network), SAT UHF (satellite-based UHF network), and NO COMM (no datalink communications available). SEND prompts also change to SENDING and then to either SENT or NOT SENT as appropriate when line selected. The CMF will attempt to send an AOC downlink message via all available transmission channels and modes for a period of five minutes before NOT SENT is displayed.

Air Traffic Services (ATS) Displays

The primary functions currently available through the ATS displays are pre-departure clearances, transatlantic oceanic clearances, and North Atlantic Track (NAT) messages. Most of these functions support air traffic services provided by ATC without direct GDC involvement.

System Displays

The system displays provide access to various system functions, including datalink region and frequency management.

Display Logs

Because a complete datalink communication is referred to as a datalink message, regardless of whether it is a flight plan request downlink, D-ATIS report uplink, or free-text message downlink (e.g., ETA FBO 1135L NEED ICE), when any new AOC uplink message is received by the Epic CMF the message title is listed in the NEW MESSAGES display log and the appropriate scratchpad advisory is displayed. Message titles may be line selected from the NEW MESSAGES display log to view the complete message. All new uplink messages remain in the NEW MESSAGES display log until the message has been viewed.

Once a new uplink message has been viewed, the message is moved to the MESSAGE LOG, WEATHER LOG, ATS LOG, REPORTS LOG, or TEST LOG display as appropriate for later review. Message titles listed in a log may be line selected to view the complete message.

Additionally, after line selecting SEND, REQUEST, or ACKNOWLEDGE to transmit a downlink message, the display is ‘frozen’ for later review from the MESSAGE LOG, WEATHER LOG, ATS LOG, REPORTS LOG, or TEST LOG display as appropriate. Display titles listed in a log may be line selected to view the complete display.

Pre-Departure Clearances (PDCs)

PDCs are departure clearances received via datalink and are available at many airports in the United States to Epic CMF-equipped aircraft. The aircraft, including any variable callsigns, must be registered through the GDC with the FAA. Use of PDCs at participating airports is mandatory once registered. Please refer to Appendix A for a list of participating airports.

A PDC is based on a filed IFR flight plan, regardless of whether the flight plan was filed by the GDC, through an FSS, or via DUATS. Approximately 20 minutes prior to the filed time of departure of the flight plan, ATC will generate and then forward the PDC to the GDC for storage. With this in mind, request the PDC no earlier than 15 minutes prior to the filed time of departure. Because this short time is often insufficient to receive the clearance and depart as planned, the GDC recommends filing the flight plan with a time of departure 30 minutes earlier than the actual intended time of departure. Please refer to the Pre-Departure Clearances procedure for detailed instructions.

If GDC has received the PDC from ATC, the PDC is sent to the aircraft as a datalink message. If the GDC has not received the PDC from ATC, a datalink message is sent to the aircraft indicating that the PDC has not been received from ATC and that the PDC may be requested again in 5 minutes. Multiple PDC requests may be sent until 10 minutes prior to the filed time of departure, after which ATC should be contacted by voice to obtain the departure clearance.

Once the PDC is received, the flight crew is required to follow the clearance. Be sure to page forward through the clearance until END OF CLEARANCE is displayed. An aircraft may receive only one PDC per airport per day, and a PDC will not be available if there is any significant change to the filed route and/or altitude or if ATC desires to negotiate the clearance. A PDC is valid for two hours beyond the filed time of departure.

Oceanic Clearances (Eastbound)

Delivery of oceanic clearances via datalink for eastbound transatlantic flights for the Gander Oceanic Control Area (OCA) is available from Gander Oceanic Area Control Centre (OACC) to Epic CMF-equipped aircraft. The aircraft, including any callsigns, must be registered through the GDC with Gander OACC.

When flight planning, ensure that “AGCS” (an acronym for Air to Ground Communication System) is included in the ATC Remarks section or item 18 of the filed ICAO flight plan. This remark informs Gander OACC that the flight crew desires to receive the oceanic clearance via datalink.

Begin requesting the clearance 30 to 90 minutes prior to aircraft entry into oceanic airspace. GDC recommends requesting the clearance 60 minutes prior to the arrival at the Oceanic Entry Point (OEP). Flights departing from airports less than 45 minutes flying time from the OEP should request clearance 10 minutes prior to start up. Flights departing from airports 45-70 minutes flying time from the OEP should request clearance as soon as practicable after departure. All clearances must be acknowledged. If the clearance is not received by 15 minutes prior to entry into oceanic airspace, contact Gander OACC on the appropriate voice frequency.

Aircraft must not enter the Gander OCA without a clearance. If the flight crew is uncertain about any aspect of the data link OCD process, they should contact Gander Clearance Delivery by voice. Unless a message is received stating that the request was too early, refrain from requesting the clearance more than once. If the data link oceanic clearance is not received by 15 minutes prior to the OEP the crew must request the clearance via voice. If the clearance does not contain the line END OF MESSAGE, it is possible that the clearance was not complete. Crews must verify the clearance via voice. All clearances and reclearances must be acknowledged.

The clearance from Gander contains the aircraft registration or callsign, entry point, ETA at the entry point, Mach number, flight level, route, and destination. If the aircraft registration or callsign in the data link oceanic clearance is not correct, the clearance is not valid and the crew must request the oceanic clearance via voice. Random route clearances contain the full route coordinates and NAT Track route clearances contain the track identifier (e.g., W, X, Y etc.). If the flight is cleared to operate on a NAT track, the crew must confirm that the route coordinates match those published in the current NAT track message. If there is a discrepancy, the crew should verify that they have the current NAT track message. If there is still a discrepancy, the clearance is not valid and the crew should request the oceanic clearance via voice. The flight level contained in the data link oceanic clearance is the “cleared oceanic flight level” for the purposes of complying with the lost communication procedures. ATC is responsible for providing a clearance to enable the flight to reach this flight level before reaching the OEP. If there is a concern, crews should contact their current controller. Amendments to the data link oceanic clearance should be requested via voice. If the datalink oceanic clearance has been received, crews should advise the current controller via voice if the ETA for the OEP changes by 3 minutes or more. This <u>may</u> result in ATC providing a reclearance.

Oceanic Clearances (Westbound)

Delivery of oceanic clearances via datalink for westbound transatlantic flights for the Shanwick Oceanic Control Area (OCA) is available from the Prestwick Oceanic Area Control Centre (OACC) to Epic CMF-equipped aircraft. The aircraft must be registered through the GDC with Shanwick OACC.

Begin requesting the clearance 30 to 90 minutes prior to aircraft entry into oceanic airspace. GDC recommends requesting the clearance 60 minutes prior to the arrival at the Oceanic Entry Point (OEP).

Aircraft must not enter the Shanwick OCA without a clearance. If at any time the flight crew is in doubt regarding the oceanic clearance transaction, Shanwick must be contacted by voice using the phrase "(AIRCRAFT REGISTRATION) ORCA CONTACT". If any clearance or reclearance is not terminated by the phrase "END OF MESSAGE", Shanwick must be contacted by voice using the phrase "(AIRCRAFT REGISTRATION) ORCA CONTACT". If no clearance has been received by 15 minutes prior to entry into the Shanwick OCA, Shanwick and Air Traffic Control (ATC) for the airspace in which the aircraft is operating must be contacted by voice. All clearances and reclearances must be acknowledged.

The clearance from Shanwick contains the aircraft registration or callsign, entry point, ETA at the entry point, Mach number, flight level, route, and destination. If the callsign in the datalink oceanic clearance is not correct, the clearance is not valid and the crew must request the oceanic clearance via voice. Random route clearances contain the full route coordinates and NAT Track route clearances contain the track identifier (e.g., A, B, C etc.). Flight crews must check that the NAT Track route coordinates in the clearance match the coordinates in the current published NAT Track Message. If there is a discrepancy, the crew should verify that they have the current NAT Track Message. If there is still a discrepancy, the clearance is not valid and the crew should request the oceanic clearance via voice. The clearance may contain additional information prefixed with the text "ATC/". This information may be advisory information (e.g., "LEVEL CHANGE" or "ENTRY POINT CHANGE") or may be additional ATC instructions (e.g., "NOT BEFORE 1125 AT GOMUP"). If the ETA at the entry point changes by 3 minutes or more, Shanwick must be advised by voice or by requesting a new clearance with the revised ETA. If the clearance contains a different entry point than requested, Shanwick will include a new calculated ETA in the clearance. If the new ETA differs from the ETA calculated by the flight crew by 3 minutes or more, Shanwick must be advised by voice or by requesting a new clearance with the revised ETA.

The clearance must be promptly acknowledged via datalink. Failure to acknowledge the clearance results in cancellation of the clearance transaction. Upon receipt of the acknowledgement, Shanwick will send a "CLEARANCE CONFIRMED" message to the aircraft. If this message is not received, Shanwick must be contacted by voice.

If the flight crew requests a new clearance or if Shanwick requires a change to an existing clearance, one or more reclearances may be received by the flight crew. These reclearances will be annotated "RECLEARANCE 1", "RECLEARANCE 2", etc., although may not necessarily be numbered consecutively. All reclearances must be acknowledged. If a reclearance is received before a previous clearance or reclearance has been acknowledged, the reclearance with the highest reclearance number should be acknowledged. If Shanwick is unable to approve a request for a new clearance, the flight crew will receive a reclearance which is a copy of the original with the phrase "ATC/ UNABLE TO APPROVE REQUEST". A reclearance for a new ETA at the entry point may be a copy of the original with the new ETA or may contain changes to any clearance parameter as a result of the new ETA. All clearances and reclearances must be acknowledged.

NOTE: Westbound Oceanic Clearance via datalink is now available through Santa Maria OACC.

Future Air Navigation System (FANS-1/A)

The FMS Air Traffic Control (ATC) Datalink function provides the following Future Air Navigation System (FANS-1/A) Air Traffic Services (ATS) applications: ATS Facilities Notification (AFN) and Automatic Dependent Surveillance (ADS).

NOTE: AFN and ADS are provided in this certification. CPDLC is provided in a later certification. The ATS Facilities Notification (AFN) function allows the pilot to logon to an ATC center to begin ADS operations. The Automatic Dependent Surveillance (ADS) function allows an ATC center to request the aircraft to automatically transmit, via a datalink, aircraft data derived from on-board navigation systems (FMS). ADS refers to Automatic Dependent Surveillance - Addressed (ADS-A) and/or Automatic Dependent Surveillance - Contract (ADS-C), which are synonymous. Automatic Dependent Surveillance - Broadcast (ADS-B) is provided in a later certification.

ADS uses the various systems onboard the aircraft to provide aircraft position, velocity, intent and meteorological data. These data are transmitted to the ATS provider system (ATC Center) for estimating and predicting aircraft position. The Controller Pilot Data

Link Communication (CPDLC) application is an ATS application in which pilots and controllers exchange messages, via datalink. CPDLC includes a set of clearance/information/request message elements which correspond to existing phraseology used by current Air Traffic Control procedures.

When the pilot initiates an AFN LOGON, the FMS informs the ground ATC facility of the location of the aircraft and its ATS capability. The initial notification message transmitted to the ground ATC facility includes:

- Four--character ICAO code for the ATC facility (that the pilot must use at logon) as entered in the LOGON TO field on the MCDU ATC LOGON/STATUS page
- Flight ID, as displayed in the FLT ID field on the ATC LOGON/STATUS page
- Aircraft Registration (Tail No.), as displayed in the TAIL NO field on the ATC LOGON/STATUS page [Tail No. is contained in the Aircraft Personality Module(APM)]
- Time (UTC)
- Aircraft position (FMS Present Position Latitude / Longitude)
- Aircraft ADS capability.

The FMS also provides the capability for an active ATC center to request the aircraft to notify (automatically logon to) the next ATC center. This capability is known as an AFN Handoff.

The pilot can logon from any FMS, however, only the Master FMS transmits AFN messages. The Master FMS is the displayed FMS on the coupled side (left or right). If an ATC LOGON is not accepted by the ATC center within 10 minutes, the RE-LOG ON TO ATC CENTER message is displayed and the pilot should attempt the logon again. Not all ATC centers have been updated to accept the ADS only (i.e., no CPDLC) capability included in this certification. If the logon is not accepted by the ATC facility after the second logon attempt, the pilot should revert to voice communications.

The pilot interface with the AFN function is provided by the ATC LOGON/STATUS MCDU page.

Automatic Position Reports

Enabling automatic position reports allows the Epic CMF to automatically send position reports to the GDC at 15, 30, or 60 minute intervals. These position reports serve two functions. First, in order for the GDC to send an uplink to an aircraft, the position of the aircraft must have been updated within the preceding 15 minutes. Any manual downlink from the CMF, such as a flight plan request or a free-text message, includes the aircraft position, which allows the GDC to respond immediately with the corresponding uplink. If the position of the aircraft is updated only from irregular manual downlinks, however, periods may exist when the GDC

cannot send an unsolicited uplink message because the last known position of the aircraft is no longer current.

The GDC therefore recommends enabling automatic position reports with a 15 minute interval in order to regularly provide the GDC with the current position of the aircraft. Automatic position reports may also be enabled with a 30 or 60 minute interval or be disabled completely in order to reduce datalink transmission costs, although the GDC would not be able to send an unsolicited uplink message to the aircraft during any period 15 minutes after the last downlink is received. If the GDC cannot send an unsolicited uplink message to an aircraft, the message is stored for up to seven days or until a downlink is received from the aircraft providing its current position, which then allows the stored message to be sent.

Automatic position reports, as well as reports for all other downlinks, are accessible through the GDC website at www.mygdc.com in both text and graphic form. These flight following reports allow users to track aircraft progress and review previous flights from the ground. Please also refer to the Automatic Reports procedure for detailed instructions on how to configure automatic position reports.

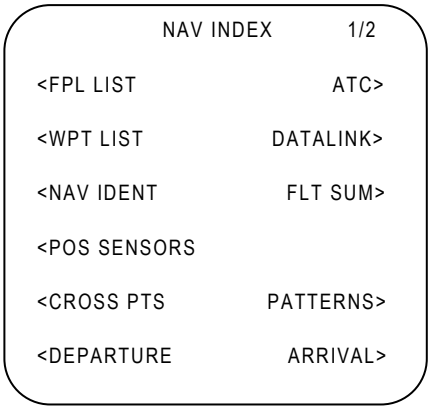
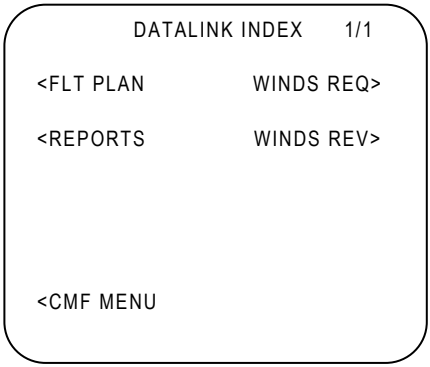
Printing

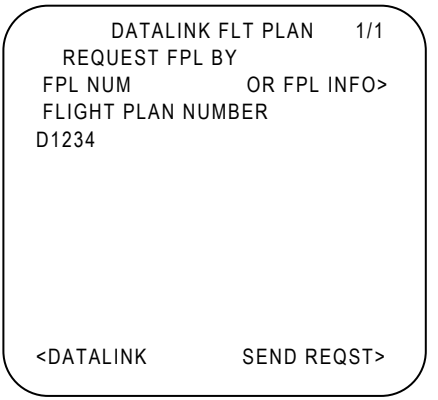
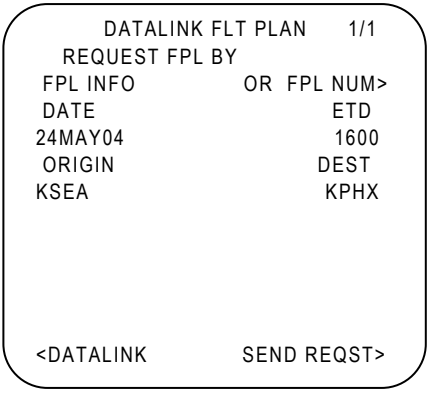
Aircraft equipped with a printer, such as the Miltope TP-4840, interfaced to the Epic CMF may print information from many displays. Displays which contain information that may be printed include a PRINT prompt at the lower right. Depending on printer status, the prompt also shows READY, PRINTING, PAPER OUT, TEST, QUEUE FULL, or FAIL indicators. As an example, the CURRENT FLIGHT page of the TIMES/FUELS display would be printed as follows:

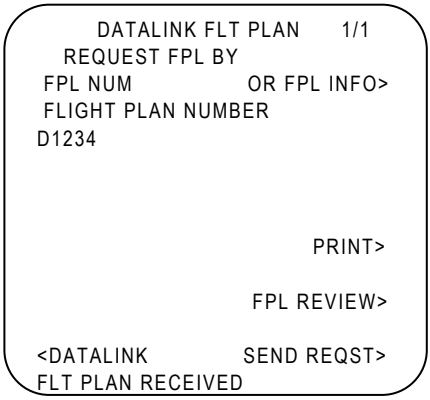
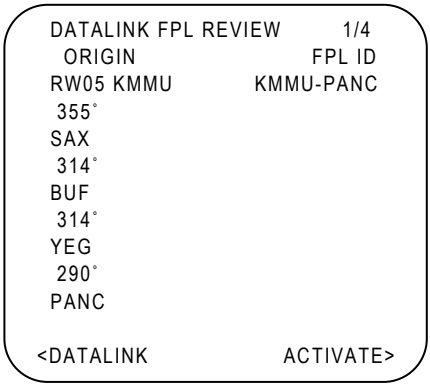
```
                TIMES/FUELS
              CURRENT FLIGHT
            N12345   KMSY-KLAS
             1551Z  01 FEB 05

 OUT              BLOCK              IN
1217Z              3+24             1541Z
15.5               10.2               5.3
 OFF              FLIGHT              ON
1224Z              3+13             1537Z
15.4               10.0               5.4
```

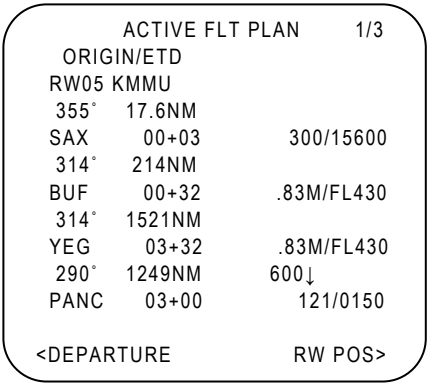
Procedures

1 FMS – Flight Plans

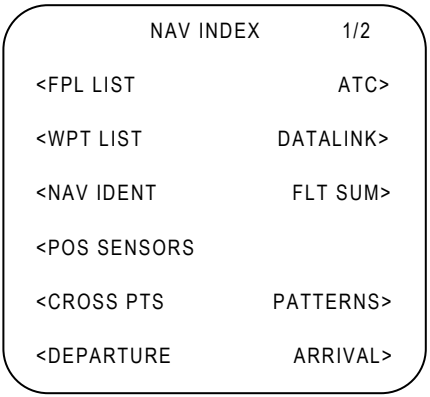
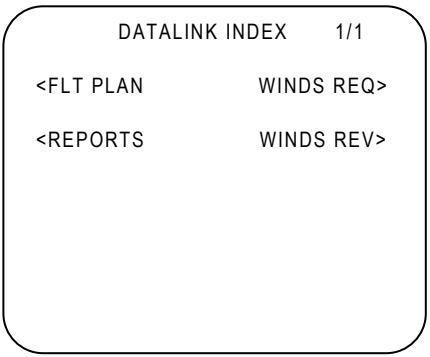
1.1	Press the NAV function key to access the NAV INDEX 1/2 display. 
1.2	Line select DATALINK to access the DATALINK INDEX 1/1 display. 

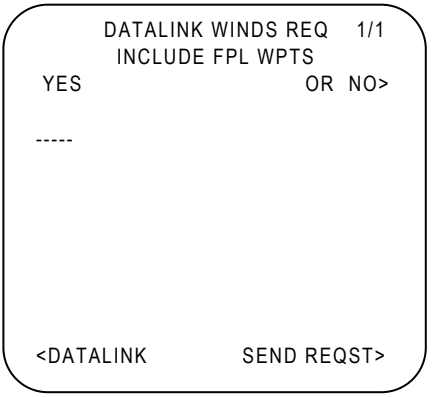
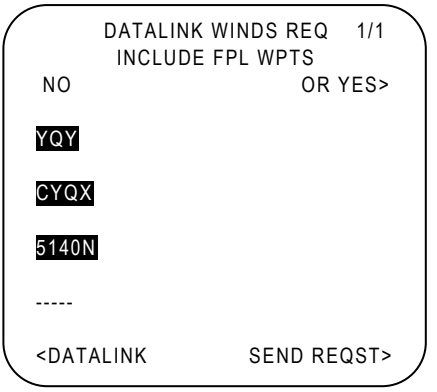
1.3	Line select FLT PLAN to access the DATALINK FLT PLAN 1/1 display. Enter the GDC flight plan number (e.g., D1234) in the FLIGHT PLAN NUMBER field. Line select SEND REQST to send the flight plan request. 
1.4	Alternately, line select FPL INFO to request a flight plan by the date, ETD, origin, and destination. Enter the relevant information in the appropriate fields and then line select SEND REQST to send the flight plan request. 
Note – If no datalink communication is available, LINK UNAVAIL will display instead of SEND REQST and will have no action if line selected.	

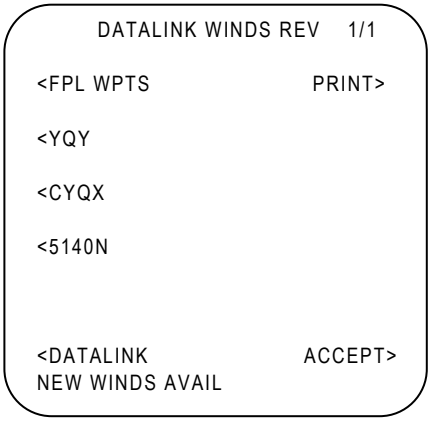
1.5	When the flight plan is received, the FPL REVIEW prompt displays and FLT PLAN RECEIVED displays in the scratchpad. 
1.6	Line select FPL REVIEW to access the DATALINK FPL REVIEW display. Press the NEXT and PREV function keys to move through the pages of the flight plan. Line select ACTIVATE to make the datalink flight plan the active FMS flight plan and access the ACTIVE FLT PLAN display. 
Note – The Epic FMS is limited to 100 flight plan waypoints, including the departure and arrival airports.	

1.7	Press the NEXT and PREV function keys to move through the pages of the flight plan. 

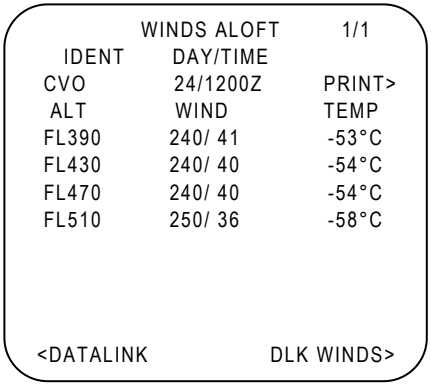
2 FMS – Winds and Temperatures Aloft

Note – The GDC automatically uplinks winds and temperatures aloft forecasts for a flight plan following successful uplink of the flight plan.	
Note – Before requesting winds and temperatures aloft forecasts, complete and confirm FMS performance initialization in order to provide the GDC with valid altitudes for the request.	
2.1	Press the NAV function key to access the NAV INDEX 1/2 display. 
2.2	Line select DATALINK to access the DATALINK INDEX 1/1 display. 

2.3	Line select WINDS REQ to access the DATALINK WINDS REQ display. To include the active flight plan waypoints in the winds and temperatures aloft forecast request, leave INCLUDE FPL WPTS at the default value of YES and line select SEND REQST. To exclude the active flight plan waypoints in the request, line select NO to change the value of INCLUDE FPL WPTS to NO. 
2.4	To request winds and temperatures aloft forecasts for locations not included as waypoints on the active flight plan, enter the locations in the ----- fields and line select SEND REQST. 
Note – If no datalink communication is available, LINK UNAVAIL will display instead of SEND REQST and will have no action if line selected.	

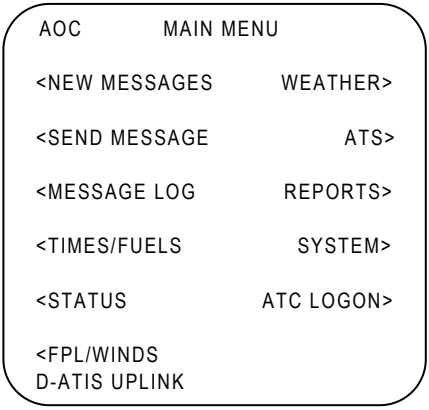
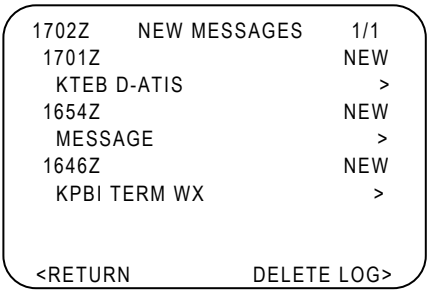
Note – The SEND REQST prompt is only available if an active flight plan exists and the INCLUDE FPL WPTS value is YES or if at least one location not on the active flight plan route has been entered.	
Note – Valid locations for winds and temperatures aloft forecasts are navaids, airports, and charted waypoints. For NDB locations, add an 'NB' suffix.	
Note – Winds and temperatures aloft forecasts may be requested for a maximum of 52 manually entered locations.	
Note – Locations for which winds and temperatures aloft forecasts has not yet been received display in inverse video.	
2.5	When the winds and temperatures aloft forecast is received, NEW WINDS AVAIL displays in the scratchpad. Line select DATALINK and then WINDS REV to access the DATALINK WINDS REV display. If winds and temperatures aloft forecasts have been received for the active flight plan waypoints, FPL WPTS displays in normal video with a caret (<) symbol. If winds and temperatures aloft forecasts have been received for waypoints not in the active flight plan, the waypoints display in normal video with a caret (< or >) symbol. Line select ACCEPT to load the forecasts into the FMS wind model. 

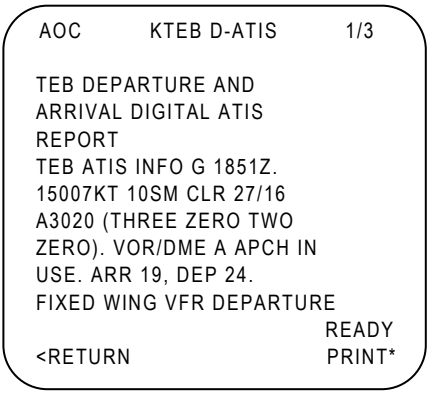
2.6	Line select FPL WPTS or a location for which a winds and temperatures aloft forecast has been received to display the forecast for that waypoint on the WINDS ALOFT 1/1 display. Line select DLK WINDS to return to the DATALINK WINDS REV display.



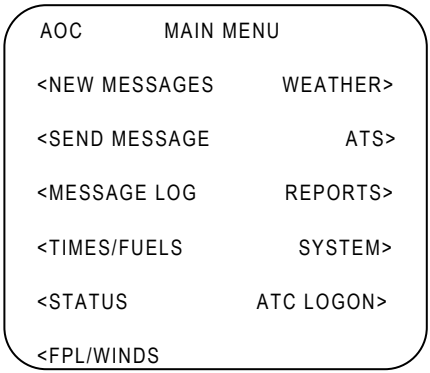
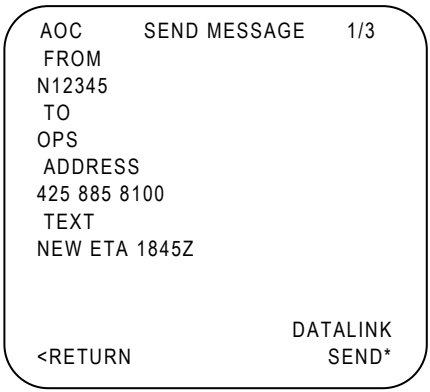
Note – A maximum of four altitudes are available on the FMS winds and temperatures aloft display because the forecasts are used for the FMS wind model. To request winds and temperatures aloft forecasts for all nine forecasted altitudes, please refer to the AOC - Winds and Temperatures Aloft procedure.

3 AOC – New Messages

Note – The appropriate scratchpad advisory (e.g., D-ATIS UPLINK) displays when a new uplink message is received.	
Note – All new AOC uplink messages remain in the NEW MESSAGES display until the message has been viewed.	
3.1	Access the MAIN MENU display. 
3.2	Line select NEW MESSAGES. If multiple new messages are available, the NEW MESSAGES display is accessed. To view a new message, press the corresponding right line select key. To delete a single message, press the DEL function key to display the DELETE message in the scratchpad and then press the corresponding left line select key. Line select DELETE LOG and then CONFIRM to delete all new messages. Press the NEXT and PREV function keys to move through the NEW MESSAGES pages. 

3.3	If a single new message is available, the message is accessed directly. Line select PRINT to print the message. Press the NEXT and PREV function keys to move through the message pages. 
Note – Once a new uplink message has been viewed, the message is moved to the MESSAGE LOG, WEATHER LOG, ATS LOG, REPORTS LOG, or TEST LOG display as appropriate for later review.	

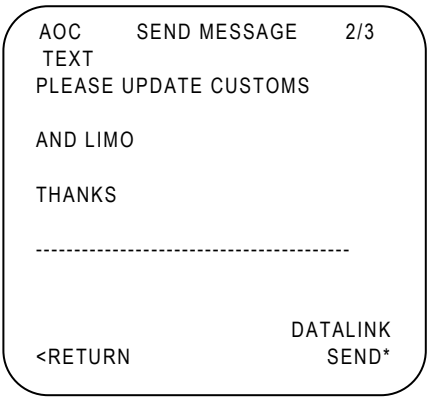
4 AOC – Send Message

4.1	Access the MAIN MENU display. 
4.2	Line select SEND MESSAGE to access the SEND MESSAGE 1/3 display. Enter the appropriate information in the FROM, TO, ADDRESS, and TEXT fields. Line select SEND to send the message. After line selecting SEND, the display is 'frozen' for later review from the MESSAGE LOG display. Press the NEXT function key to access the SEND MESSAGE 2/3 display in order to add additional text to the message. 
Note – The FROM field defaults to the aircraft registration (or permanent callsign) but may be overwritten.	
Note – The SEND prompt is not available unless at least one character is entered in the address field.	

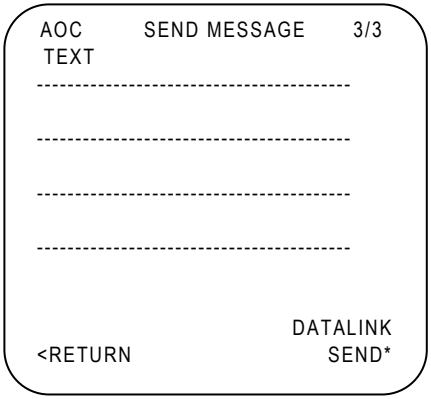
Note – Free-text messages may be sent to several different types of recipients as indicated below. For example, to address an automated message to an e-mail recipient, please contact the GDC to set up a code that is entered in the ADDRESS field of the message and then automatically converted to the desired e-mail address(es) when received at the GDC. To address an automated message to a fax machine, enter the fax number with an "F" prefix, but with no dashes or spaces, in the ADDRESS field of the message.

OPS	*e-mail code (example)*
N12345	*aircraft subscribing to GDC services*
425-885-8788	*telephone number*
F4258858930	*facsimile number (“F” prefix)*
AHDQGLXH	*ACARS network address (“A” prefix)*
NKSNAXGSX	*AFTN address (“N” prefix)*
GDC	*Global Data Center*
JEPP	*Jeppesen*
UVAIR	*Universal Weather & Aviation*
ARI	*Air Routing International*
BASEOPS	*Base Ops International*

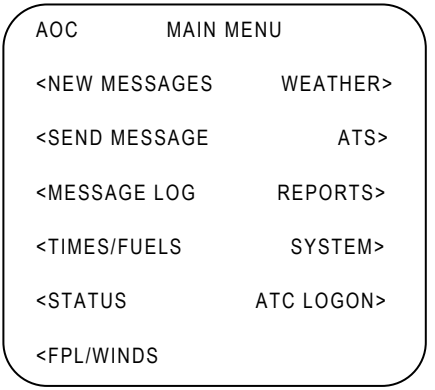
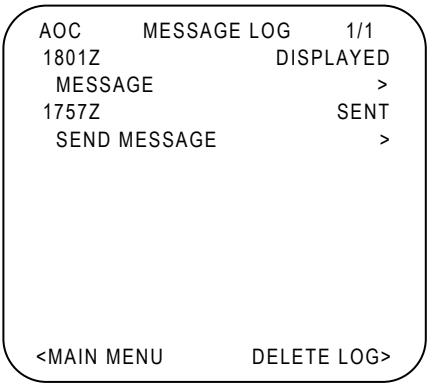
4.3 Enter the message text in the available lines. Line select SEND to send the message. After line selecting SEND, the display is ‘frozen’ for later review from the MESSAGE LOG display. Press the NEXT function key to access the SEND MESSAGE 3/3 display in order to add additional text to the message.



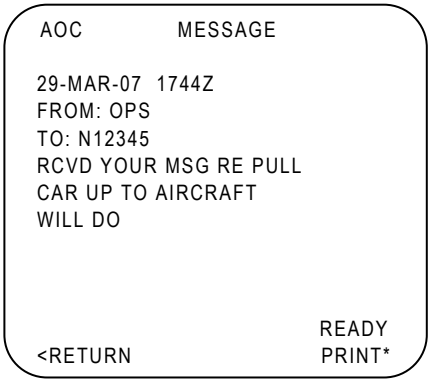
4.4	Enter the message text in the available lines. Line select SEND to send the message. After line selecting SEND, the display is 'frozen' for later review from the MESSAGE LOG display.



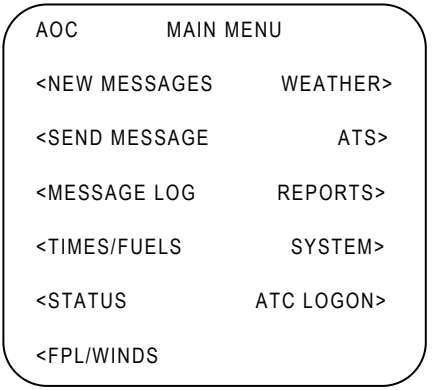
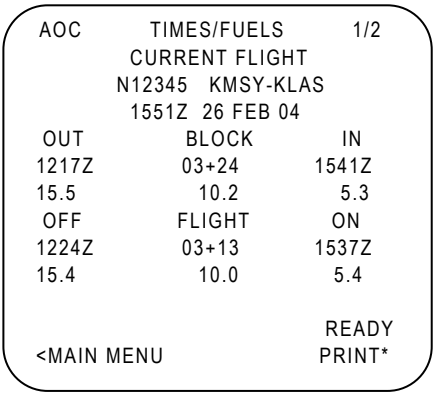
5 AOC – Message Log

5.1	Access the MAIN MENU display. 
5.2	Line select MESSAGE LOG to access the MESSAGE LOG display. The MESSAGE LOG display contains all sent free-text messages with a SENT label and all received free-text messages previously viewed with a DISPLAYED label. To display a message, press the corresponding right line select key. To delete a single message, press the DEL function key to display the DELETE message in the scratchpad and then press the corresponding left line select key. Line select DELETE LOG and then CONFIRM to delete all messages. Press the NEXT and PREV function keys to move through the MESSAGE LOG pages. 

5.3	With a free-text message displayed, line select PRINT to print the message. Press the NEXT and PREV function keys to move through the pages of the message.



6 AOC – Times/Fuels

6.1	Access the MAIN MENU display. 
6.2	Line select TIMES/FUELS to access the TIMES/FUELS 1/2 display. Current flight information, including the departure airport, arrival airport, OOOI times and fuels, block times and fuels, and flight times and fuels is displayed. Line select PRINT to print the information for both the current and previous flights. 
Note – Following an OUT or ON event, IN changes from a label in small white font to a prompt in large yellow font with an asterisk solicit character. The IN prompt may be line selected to manually transition to the IN state.	

Note – Following a manual IN event, OUT changes from a label in small white font to a prompt in large yellow font with an asterisk solicit character. The OUT prompt may be line selected to manually transition to the OUT state.

Note – All information on the TIMES/FUELS 1/2 display is copied to the TIMES/FUELS 2/2 display and reset fifteen minutes after an 'in' event.

Note – Alternately, during the IN state following an OUT or ON event, line select END FLIGHT to manually copy the information on the TIMES/FUELS 1/2 display to the TIMES/FUELS 2/2 display and reset the information on the TIMES/FUELS 1/2 display.

6.3	Press the NEXT function key to access the TIMES/FUELS 2/2 display. Previous flight information, including the departure airport, arrival airport, OOOI times and fuels, block times and fuels, and flight times and fuels is displayed. Line select PRINT to print the information for both the current and previous flights.

```
AOC        TIMES/FUELS        2/2
          PREVIOUS FLIGHT
         N12345  KACY-KMSY
          2008Z  24 FEB 04
 OUT          BLOCK          IN
1756Z         03+09         2105Z
12.6             8.3          4.3
 OFF          FLIGHT          ON
1759Z         02+58         2057Z
12.5             8.1          4.4

                              READY
<MAIN MENU                    PRINT*
```

Note – OOOI transition logic is implemented as follows:

IN to OUT: Main door locked and parking brake released.

OUT to OFF: Aircraft airborne for 5 seconds.

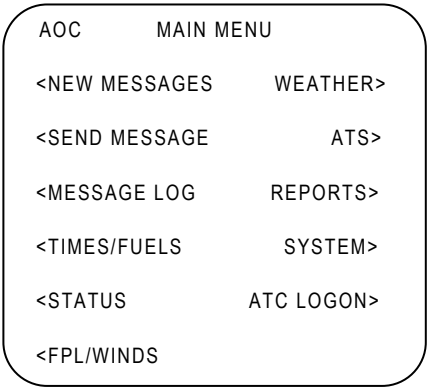
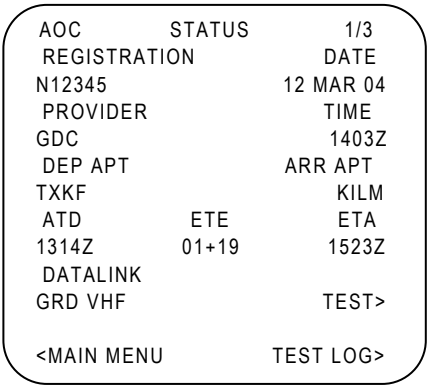
OUT to IN: Main door opened and parking brake released.

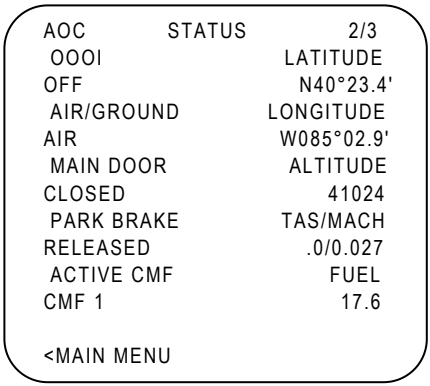
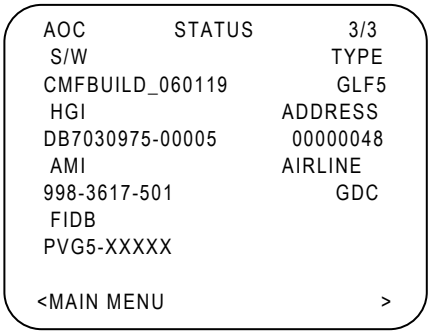
OFF to ON: Aircraft on ground for 5 seconds.

ON to OFF: Aircraft airborne for 5 seconds.

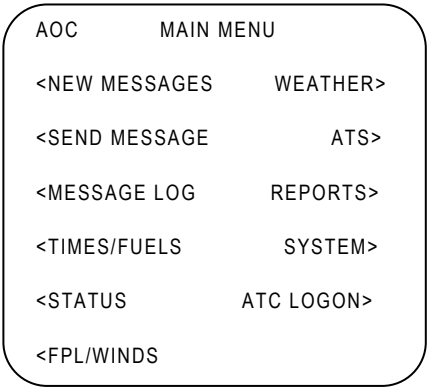
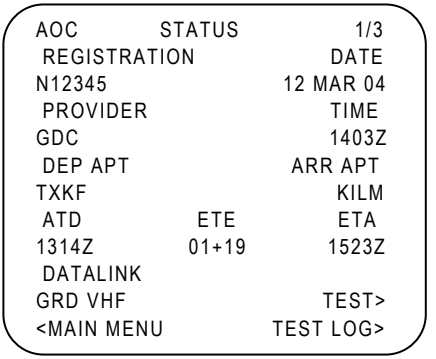
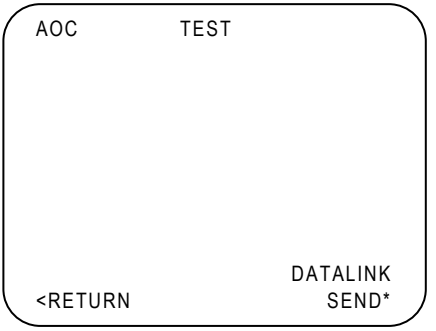
ON to IN: Main door opened.

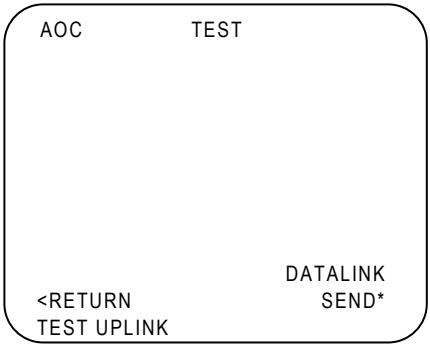
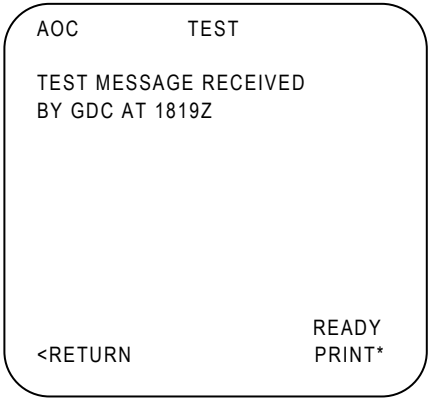
7 AOC – Status

7.1	Access the MAIN MENU display. 
7.2	Line select STATUS to access the STATUS 1/3 display. The PROVIDER field displays either GDC or OTHER to reflect the configured ACARS airline identifier and the DATALINK field displays GRD VHF (ground-based VHF network), SAT UHF (satellite-based UHF network), or NO COMM (no datalink communications available) to reflect current datalink status. 

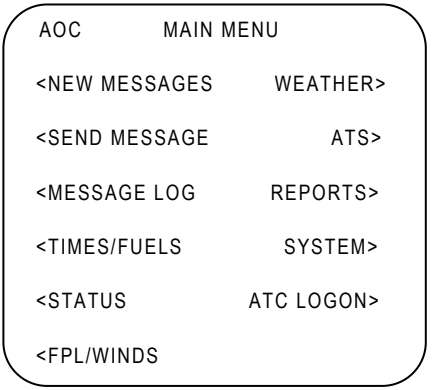
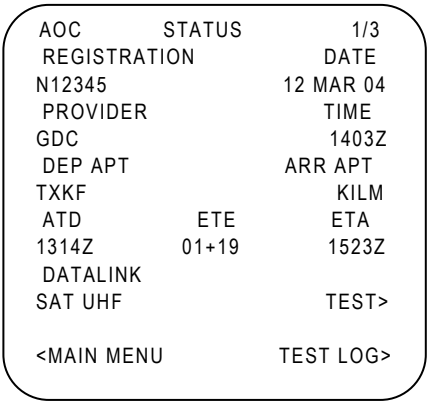
7.3	Press the NEXT function key to access the STATUS 2/3 display. The OOOI field displays OUT, OFF, ON, or IN to reflect the current OOOI state. The ALTITUDE field displays the aircraft pressure altitude in feet and the FUEL field displays the fuel on board the aircraft in thousands of pounds. The ACTIVE CMF field displays CMF status with possible values of CMF 1, CMF 2, or NONE. 
7.4	Press the NEXT function key to access the STATUS 3/3 display. The S/W field displays the CMF software part number, the HGI field the Honeywell Generated Information (HGI) part number, the AMI field the Airline Modifiable Information (AMI) part number, and the FIDB field the Flexible Input Data Base (FIDB) ID. The TYPE field displays the four-character ICAO aircraft type designator, the ADDRESS field the eight-character ICAO aircraft address (also used as the Mode S transponder code and as the SATCOM AES ID), and the AIRLINE field the three-character ICAO airline identifier. 

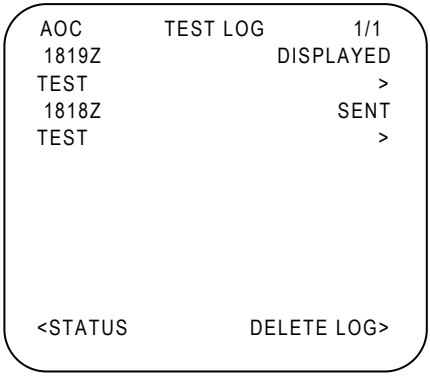
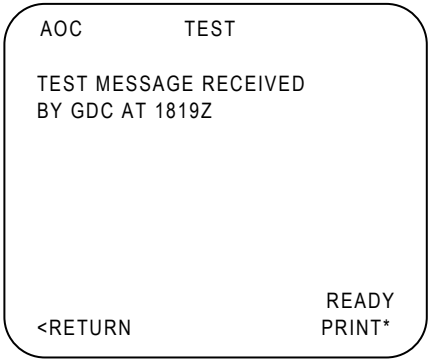
8 AOC – Test

8.1	Access the MAIN MENU display. 
8.2	Line select STATUS to access the STATUS 1/2 display. 
8.3	Line select TEST to access the TEST display. 

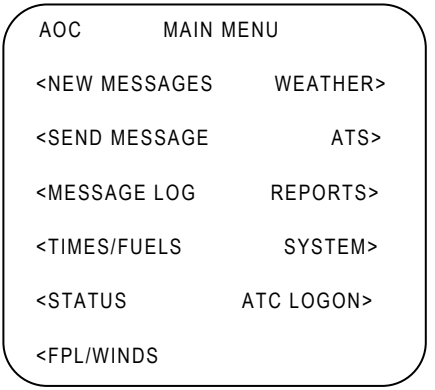
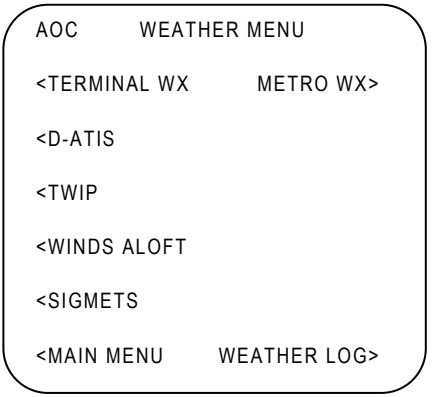
8.4	Line select SEND to send a test downlink. 
8.5	When the test uplink is received in response, a TEST UPLINK scratchpad advisory displays. Access the message through the NEW MESSAGES display. 
Note – A new test uplink is viewed as a new message on the NEW MESSAGES display. Please refer to the New Messages procedure for detailed instructions to view new messages.	

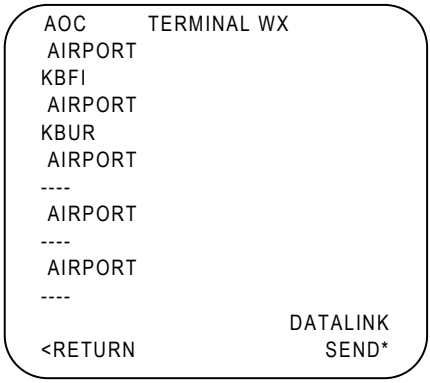
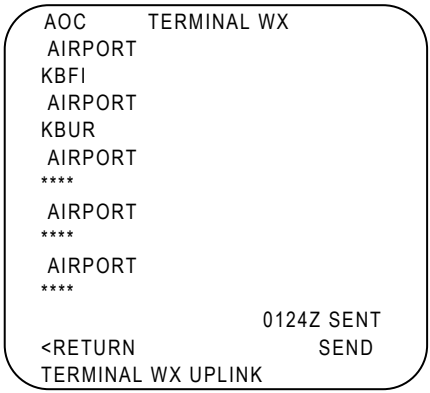
9 AOC – Test Log

9.1	Access the MAIN MENU display. 
9.2	Line select STATUS to access the STATUS 1/3 display. 

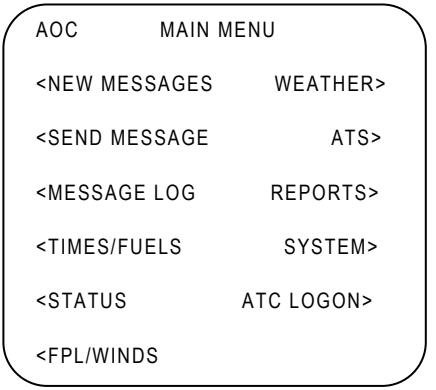
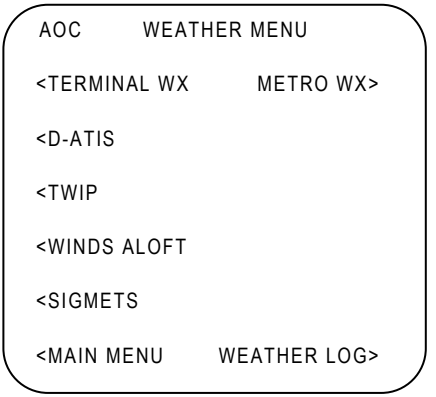
9.3	Line select TEST LOG to access the TEST LOG display. The TEST LOG display contains all sent test downlinks with a SENT label and all received test uplinks previously viewed with a DISPLAYED label. To display a test message, press the corresponding right line select key. To delete a single test message, press the DEL function key to display the DELETE message in the scratchpad and then press the corresponding left line select key. Line select DELETE LOG and then CONFIRM to delete all test messages. Press the NEXT and PREV function keys to move through the TEST LOG pages. 
9.4	With a test message displayed, line select PRINT to print the test message. 

10 AOC – Terminal Weather

10.1	Access the MAIN MENU display. 
10.2	Line select WEATHER to access the WEATHER MENU display. 

10.3	Line select TERMINAL WX to access the TERMINAL WX display. Enter up to five airport identifiers in the AIRPORT fields and then line select SEND to send the request. 
Note – The first AIRPORT field defaults to the FMS arrival airport but may be overwritten.	
Note – The SEND prompt is not available unless at least one valid airport identifier is entered.	
10.4	When SEND is line selected, the display is 'frozen' for later review from the WEATHER LOG display. When the requested TERMINAL WX is received, a TERMINAL WX UPLINK scratchpad advisory displays. 
Note – A new terminal weather uplink is viewed as a new message on the NEW MESSAGES display. Please refer to the New Messages procedure for detailed instructions to view new messages.	

11 AOC – D-ATIS

11.1	Access the MAIN MENU display. 
11.2	Line select WEATHER to access the WEATHER MENU display. 
Note – D-ATIS reports may also be requested from the ATS MENU display.	

11.3	Line select D-ATIS to access the D-ATIS display. Enter up to five airport identifiers in the AIRPORT fields and then line select SEND to send the request.

```
AOC          D-ATIS
 AIRPORT
KIAD
 AIRPORT
KIND
 AIRPORT
----
 AIRPORT
----
 AIRPORT
----
                          DATALINK
<RETURN                     SEND*
```

Note – The first AIRPORT field defaults to the FMS departure airport but may be overwritten.

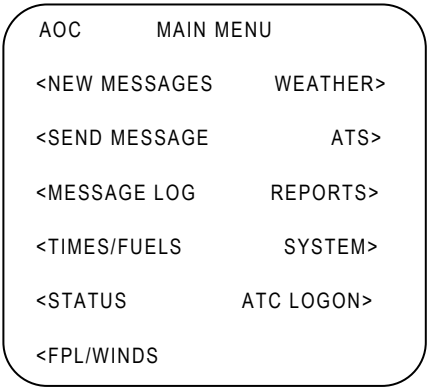
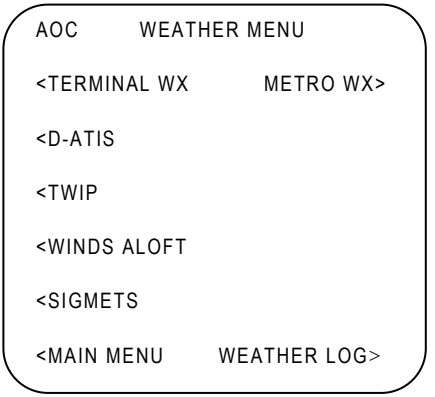
Note – The SEND prompt is not available unless at least one valid airport identifier is entered.

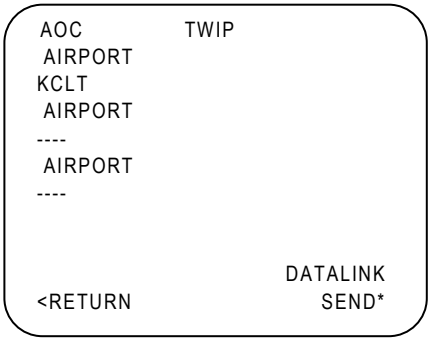
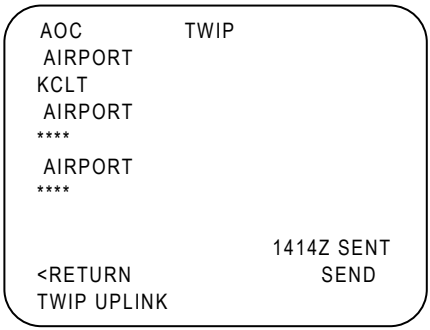
11.4	When SEND is line selected, the display is 'frozen' for later review from the WEATHER LOG display. When the requested D-ATIS is received, a D-ATIS UPLINK scratchpad advisory displays.

```
AOC          D-ATIS
 AIRPORT
KIAD
 AIRPORT
KIND
 AIRPORT
****
 AIRPORT
****
 AIRPORT
****
                        1546Z SENT
<RETURN                    SEND
D-ATIS UPLINK
```

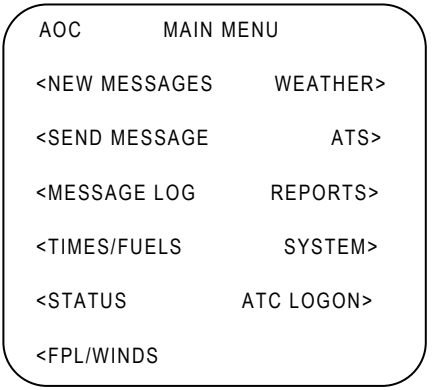
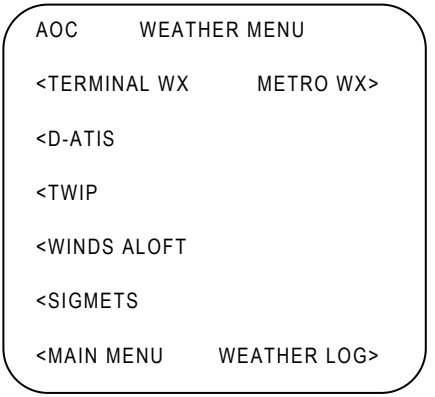
Note – A new D-ATIS uplink is viewed as a new message on the NEW MESSAGES display. Please refer to the New Messages procedure for detailed instructions to view new messages.

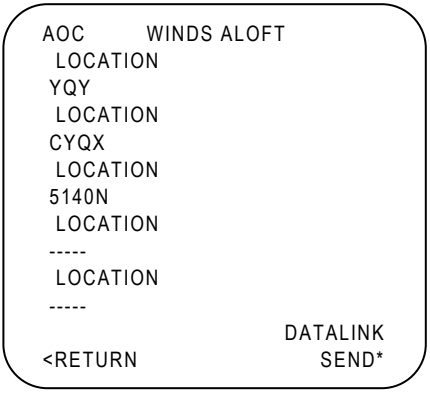
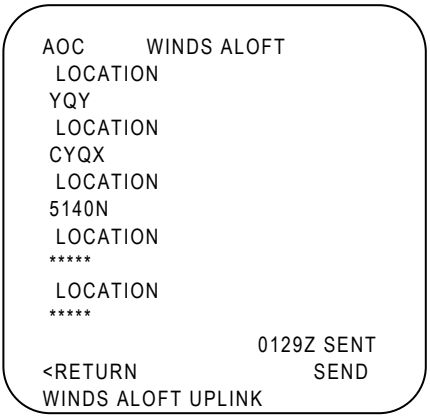
12 AOC – TWIP

12.1	Access the MAIN MENU display. 
12.2	Line select WEATHER to access the WEATHER MENU display. 
Note – TWIP reports may also be requested from the ATS MENU display.	

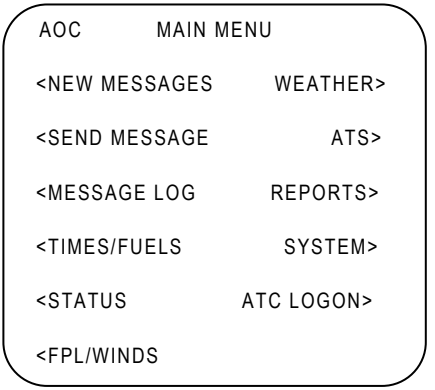
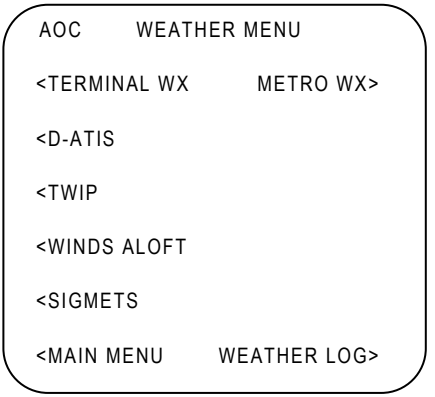
12.3	Line select TWIP to access the TWIP display. Enter up to three airport identifiers in the AIRPORT fields and then line select SEND to send the request. 
Note – The first AIRPORT field defaults to the FMS arrival airport but may be overwritten.	
Note – The SEND prompt is not available unless at least one valid airport identifier is entered.	
12.4	When SEND is line selected, the display is 'frozen' for later review from the WEATHER LOG display. When the requested TWIP is received, a TWIP UPLINK scratchpad advisory displays. 
Note – A new TWIP uplink is viewed as a new message on the NEW MESSAGES display. Please refer to the New Messages procedure for detailed instructions to view new messages.	

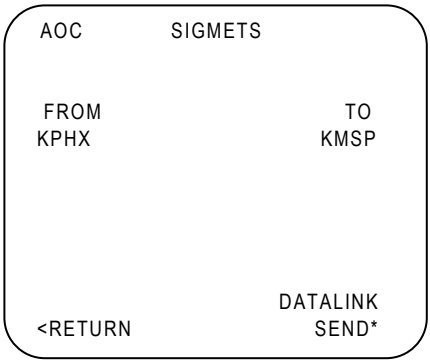
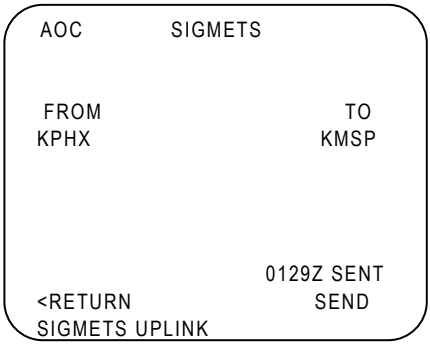
13 AOC – Winds and Temperatures Aloft

13.1	Access the MAIN MENU display. 
13.2	Line select WEATHER to access the WEATHER MENU display. 

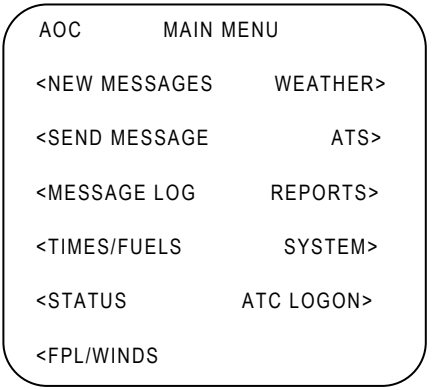
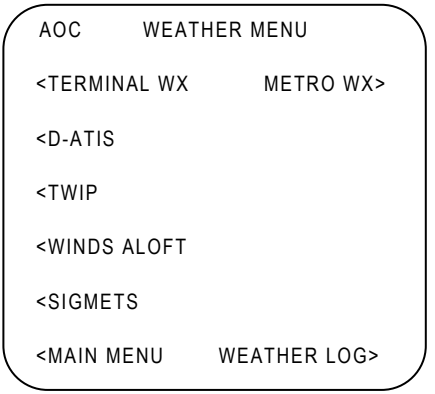
13.3	Line select WINDS ALOFT to access the WINDS ALOFT display. Enter up to five locations in the LOCATION fields and then line select SEND to send the request. 
Note – Valid locations for winds and temperatures aloft forecasts are navaids, airports, and charted waypoints. For NDB locations, add an 'NB' suffix.	
Note – The SEND prompt is not available unless at least one valid location is entered.	
13.4	When SEND is line selected, the display is 'frozen' for later review from the WEATHER LOG display. When the requested WINDS ALOFT are received, a WINDS ALOFT UPLINK scratchpad advisory displays. 
Note – A new winds aloft uplink is viewed as a new message on the NEW MESSAGES display. Please refer to the New Messages procedure for detailed instructions to view new messages.	

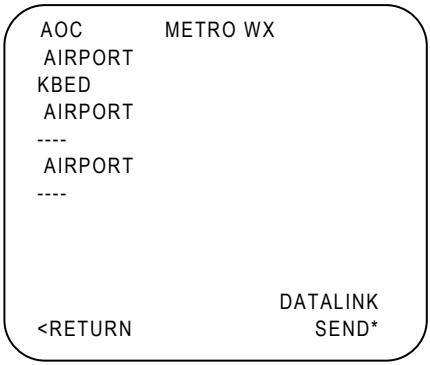
14 AOC – SIGMETs

14.1	Access the MAIN MENU display. 
14.2	Line select WEATHER to access the WEATHER MENU display. 

14.3	Line select SIGMETS to access the SIGMETS display. The FROM and TO fields default to the FMS departure and arrival airports respectively. The FROM field may be overwritten with a navaid, airport, or charted waypoint identifier. For NDB locations, add an 'NB' suffix. The TO field may be overwritten with an airport identifier. Line select SEND to send the request. 
Note – The SEND prompt is not available unless valid location identifiers are entered in the FROM and TO fields.	
14.4	When SEND is line selected, the display is 'frozen' for later review from the WEATHER LOG display. When the requested SIGMETs are received, a SIGMETS UPLINK scratchpad advisory displays. 
Note – A new SIGMET uplink is viewed as a new message on the NEW MESSAGES display. Please refer to the New Messages procedure for detailed instructions to view new messages.	

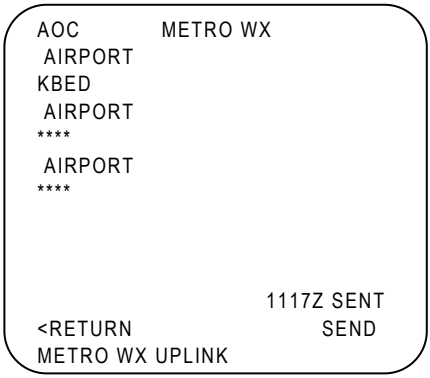
15 AOC – Metro Weather

15.1	Access the MAIN MENU display. 
15.2	Line select WEATHER to access the WEATHER MENU display. 

15.3	Line select METRO WX to access the METRO WX display. Enter up to three airport identifiers in the AIRPORT fields and then line select SEND to send the request. 

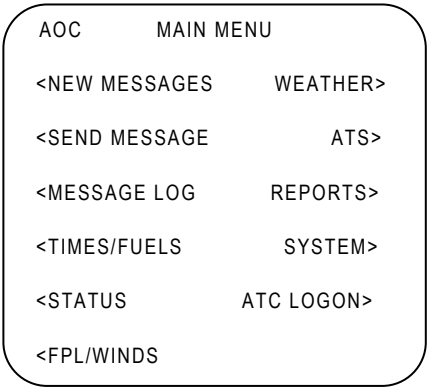
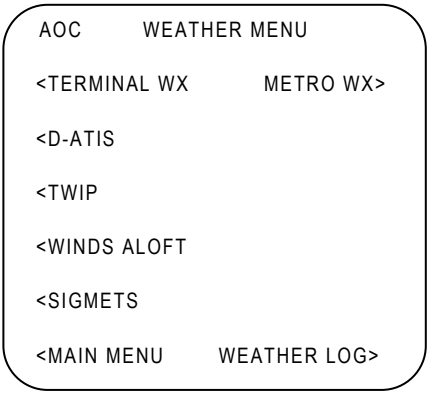
Note – The first AIRPORT field defaults to the FMS arrival airport but may be overwritten.

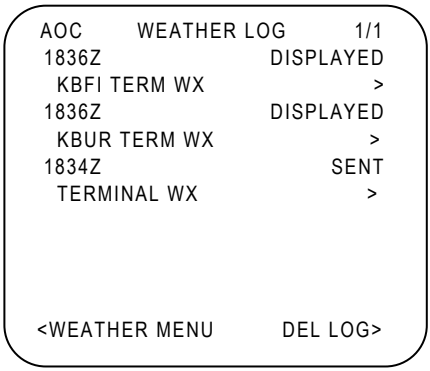
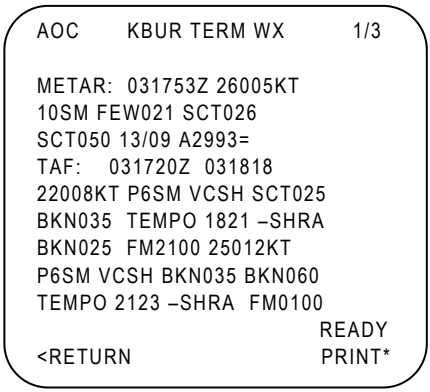
Note – The SEND prompt is not available unless at least one valid airport identifier is entered.

15.4	When SEND is line selected, the display is 'frozen' for later review from the WEATHER LOG display. When the requested METRO WX is received, a METRO WX UPLINK scratchpad advisory displays. 

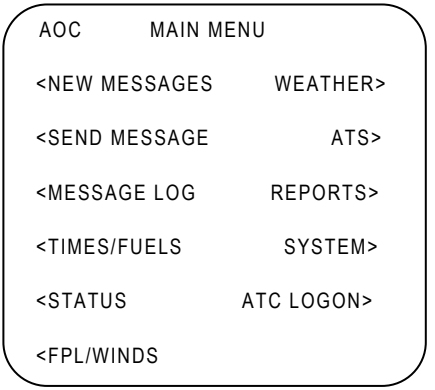
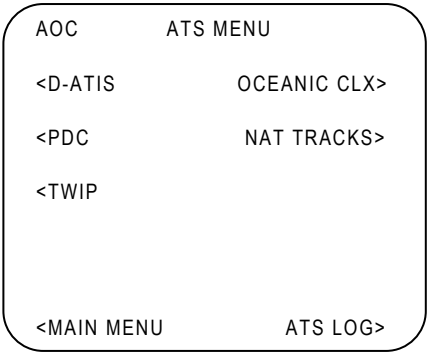
Note – A new metro weather uplink is viewed as a new message on the NEW MESSAGES display. Please refer to the New Messages procedure for detailed instructions to view new messages.

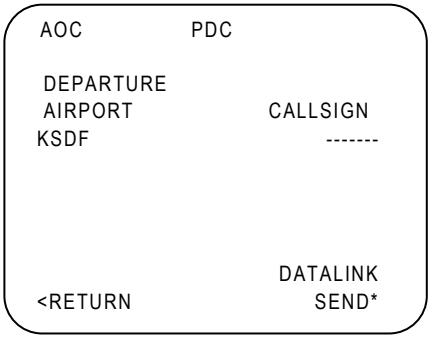
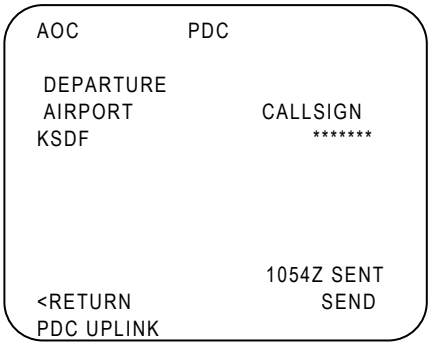
16 AOC – Weather Log

16.1	Access the MAIN MENU display. 
16.2	Line select WEATHER to access the WEATHER MENU display. 
Note – D-ATIS and TWIP reports may also be accessed from the ATS LOG display.	

16.3	Line select WEATHER LOG to access the WEATHER LOG display. The WEATHER LOG display contains all sent weather requests with a SENT label and all received weather responses previously viewed with a DISPLAYED label. To display a request or response, press the corresponding right line select key. To delete a single request or response, press the DEL function key to display the DELETE message in the scratchpad and then press the corresponding left line select key. Line select DELETE LOG and then CONFIRM to delete all requests and responses. Press the NEXT and PREV function keys to move through the WEATHER LOG pages. 
16.4	With a weather report and/or forecast displayed, line select PRINT to print the report and/or forecast. Press the NEXT and PREV function keys to move through the pages of the report and/or forecast. 

17 AOC – Pre-Departure Clearances

17.1	Access the MAIN MENU display. 
17.2	Line select ATS to access the ATS MENU display. 

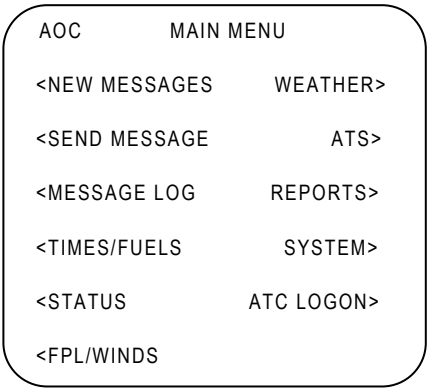
17.3	Line select PDC to access the PDC display. The DEPARTURE AIRPORT field defaults to the FMS departure airport but may be overwritten. A callsign previously registered with the GDC for PDCs may optionally be entered in the CALLSIGN field. Line select SEND to send the request. 
Note – The SEND prompt is not available unless a valid airport identifier is entered in the DEPARTURE AIRPORT field.	
17.4	When SEND is line selected, the display is 'frozen' for later review from the ATS LOG display. When the requested PDC is received, a PDC UPLINK scratchpad advisory displays. 
Note – A PDC uplink is viewed as a new message on the NEW MESSAGES display. Please refer to the New Messages procedure for detailed instructions to view new messages.	

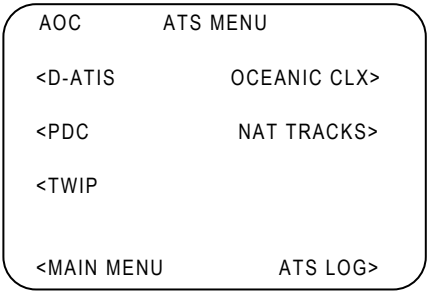
18 AOC – Oceanic Clearances

Note – Aircraft must be registered for oceanic clearance delivery through the GDC. Aircraft must not enter the Oceanic Control Area (OCA) without a clearance. Request the clearance between 30 and 90 minutes (60 minutes recommended) prior to the Oceanic Entry Point (OEP). If at any time the flight crew is in doubt regarding the oceanic clearance transaction, the Oceanic Area Control Centre (OACC) must be contacted by voice. If any clearance or reclearance is not terminated by the phrase "END OF MESSAGE", the OACC must be contacted by voice. If the clearance is not received by 15 minutes prior to entry into oceanic airspace, contact the OACC on the appropriate voice frequency. All clearances and reclearances must be acknowledged.

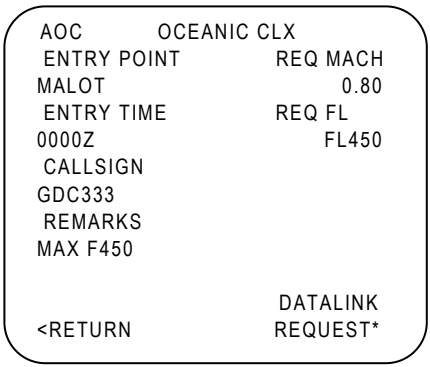
Note – Westbound Oceanic Clearance via datalink is now available through Santa Maria OACC.

18.1	Access the MAIN MENU display.
18.2	Line select ATS to access the ATS MENU display.





18.3	Line select OCEANIC CLX to access the OCEANIC CLX display. Enter the entry waypoint into oceanic airspace in the ENTRY POINT field, the requested entry time in the ENTRY TIME field, GDC333 or the callsign in the CALLSIGN field, the requested Mach speed (with the leading decimal point) in the REQ MACH field, the requested flight level in the REQ FL field, and any pertinent remarks in the REMARKS field. Some fields may already contain correct information. Line select REQUEST to send the request.

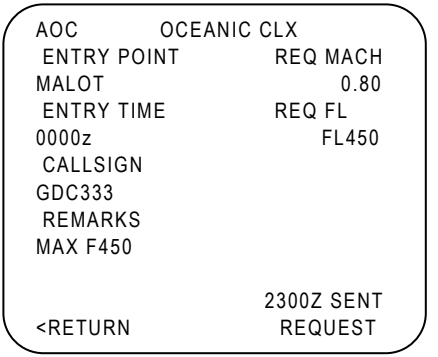
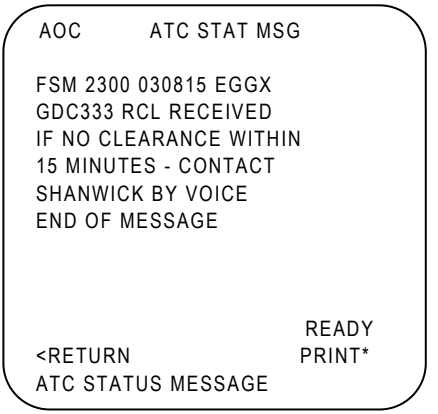


Note – Valid Gander OCA Oceanic Entry Points (OEPs) are (north to south) KENKI, RUDGA, NALDI, MUSVA, KAGLY, BERUS, IKMAN, TANTI, GRIBS, VIMLA, MIBNO, TAPLU, PEPKI, KENRI, VIBDI, LAKES, MOATT, PRAWN, PORGY, LOACH, SCROD, OYSTR, CARPE, HECKK, CRONO, DENDU, KOBEV, LOGSU, NOVEP, RONPO, URTAK, VODOR, and BOBTU.

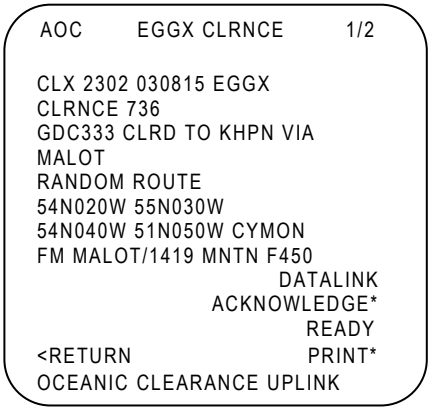
Note – Valid Shanwick OCA Oceanic Entry Points (OEPs) are AGORI, ATSIX, BALIX, BEDRA, BEGAS, BERUX, BILTO, DINIM, DIXIS, DOGAL, ERAKA, ETARI, ETIKI, GOMUP, LASNO, LIMRI, MALOT, OMOKO, PASAS, PIKIL, PITAX, RESNO, SEPAL, SIVIR, SOMAX, SUNOT, and VENER.

Note – Valid Santa Maria OCA Oceanic Entry Point (OEPs) are (north to south) HIDRA, KOPAS, MUDOS, RETEN, ARMED, BANAL, DETOX, ERPES, GUNTI, KOMUT, LUTAK, MANOX, NAVIX, IRKID, ABALO, NENUX, and ULTEM.

Note – Valid remarks include the preferred alternative route (e.g., 2ND NAT C), preferred alternative altitude (e.g., 2ND F430), maximum acceptable flight level at the entry point (e.g., MAX F430), or requested entry point different than contained in the filed flight plan (e.g., NEW ENTRY POINT).

18.4	When REQUEST is line selected, the display is 'frozen' for later review from the ATS LOG display. 
18.5	The OACC normally responds to the clearance request with a message indicating that the clearance should be received within the next 15 minutes. When the ATC STATUS MESSAGE scratchpad advisory displays, access the message through the NEW MESSAGES display. 
Note – If no response is received within 5 minutes, one additional oceanic clearance request may be sent. If no response to the second request is received, the OACC must be contacted by voice.	

18.6	The OACC then sends the clearance to the aircraft, which contains the aircraft registration or callsign, entry point, ETA at the entry point, Mach number, flight level, route, and destination. When the OCEANIC CLEARANCE UPLINK scratchpad advisory displays, access the clearance through the NEW MESSAGES display.



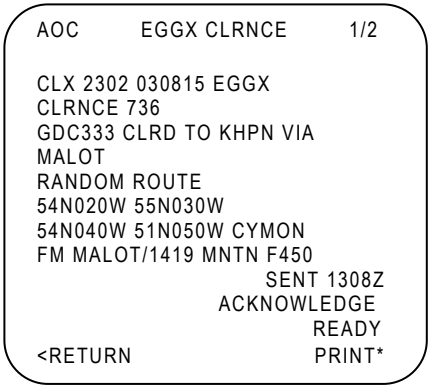
Note – The flight crew must check that the aircraft registration or callsign in the clearance is correct.

Note – Random route clearances contain the full route coordinates and NAT Track route clearances contain the track identifier (e.g., A, B, C etc.). Flight crews must check that the NAT Track route coordinates in the clearance match the coordinates in the current published NAT Track Message.

Note – The clearance may contain additional information prefixed with the text "ATC/". This information may be advisory information (e.g., "LEVEL CHANGE" or "ENTRY POINT CHANGE") or additional ATC instructions (e.g., "NOT BEFORE 1125 AT GOMUP").

Note – If the ETA at the entry point changes by 3 minutes or more, the OACC must be advised by voice or by requesting a new clearance with the revised ETA.

Note – If the clearance contains a different entry point than requested, the OACC will include a new calculated ETA in the clearance. If the new ETA differs from the ETA calculated by the flight crew by 3 minutes or more, the OACC must be advised by voice or by requesting a new clearance with the revised ETA.

18.7	Promptly acknowledge the clearance via datalink by line selecting ACKNOWLEDGE. 

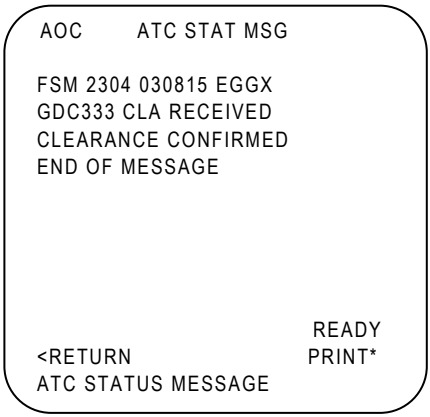
Note – A formatting error in the clearance acknowledgement (CLA) received by the Gander OCD system will result in a "CLA REJECTED MESSAGE REVERT TO VOICE PROCEDURES END OF MESSAGE" message sent to the aircraft. The datalink oceanic clearance must be verified via voice.

Note – If the CLA received by the Gander OCD system did not match the data link oceanic clearance, a "CLA REJECTED CLEARANCE CANCELLED REVERT TO VOICE PROCEDURES END OF MESSAGE" message is sent to the aircraft. The datalink oceanic clearance must be verified via voice.

Note – If Shanwick does not promptly receive the clearance acknowledgement, a "SHANWICK CLEARANCE NOT ACKNOWLEDGED – SEND DATALINK ACKNOWLEDGEMENT NOW" message is sent to the aircraft.

Note – Failure to acknowledge the clearance results in cancellation of the clearance transaction and a "TRANSACTION TIMEOUT – REVERT TO VOICE PROCEDURES" message sent to the aircraft.

Note – If the clearance acknowledgement is invalid, a "CLEARANCE CANCELLED – REVERT TO VOICE PROCEDURES" message is sent to the aircraft.

18.8	Upon receipt of the clearance acknowledgement, the OACC sends a message to the aircraft confirming the clearance. If this message is not received, the OACC must be contacted by voice. When the ATC STATUS MESSAGE scratchpad advisory displays, access the message through the NEW MESSAGES display. 

Note – If the flight crew requests a new clearance of if Shanwick requires a change to an existing clearance, once or more reclearances may be received by the flight crew. These reclearances will be annotated "RECLEARANCE 1", "RECLEARANCE 2", etc., although may not necessarily be numbered consecutively.

If a reclearance is received before a previous clearance or reclearance has been acknowledged, the reclearance with the highest clearance number should be acknowledged.

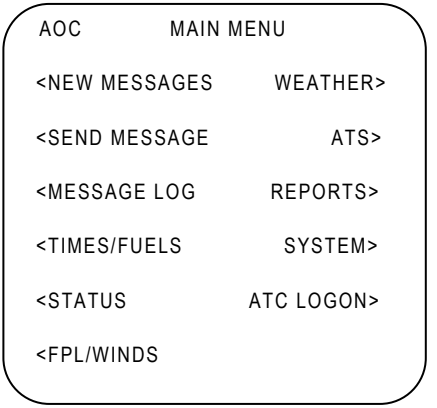
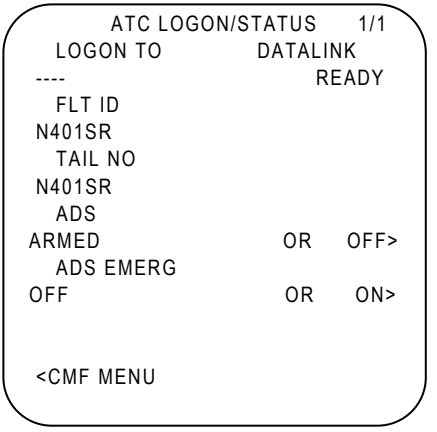
If Shanwick is unable to approve a request for a new clearance, the flight crew will receive a reclearance which is a copy of the original with the phrase "UNABLE TO APPROVE REQUEST".

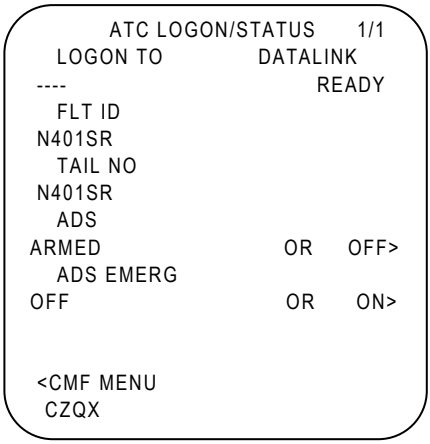
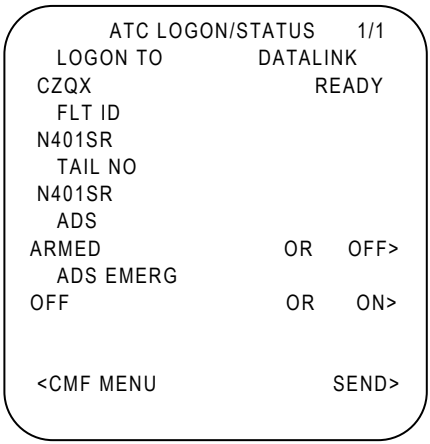
A reclearance for a new ETA at the entry point may be a copy of the original with the new ETA or may contain changes to any clearance parameter as a result of the new ETA.

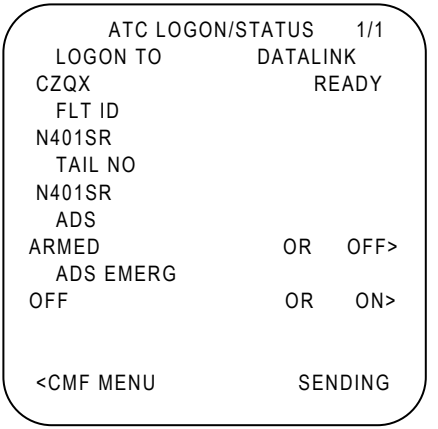
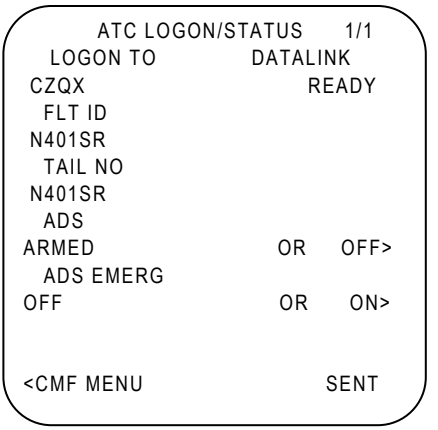
19 AOC – ATC LOGON

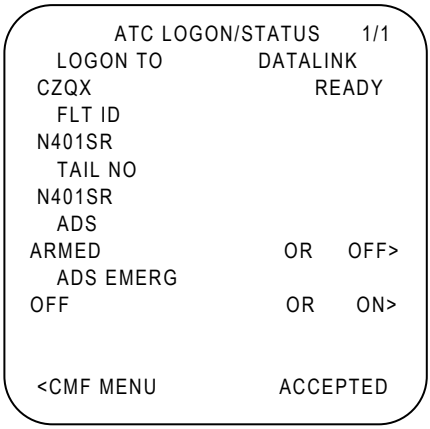
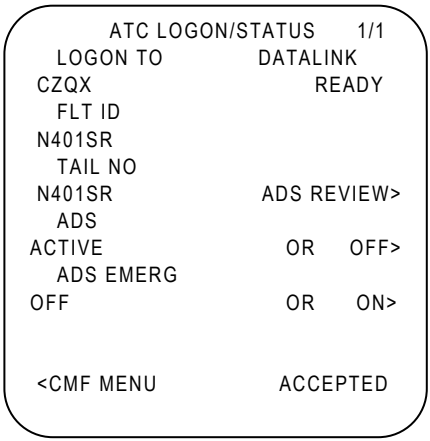
Note – Before an Automatic Dependent Surveillance (ADS) contract can be established, the pilot must logon to an ATC center.

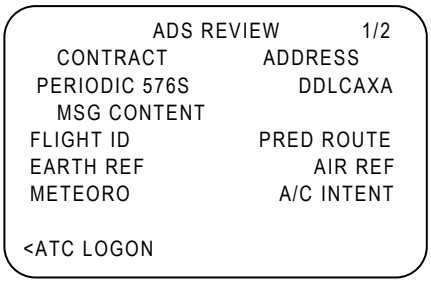
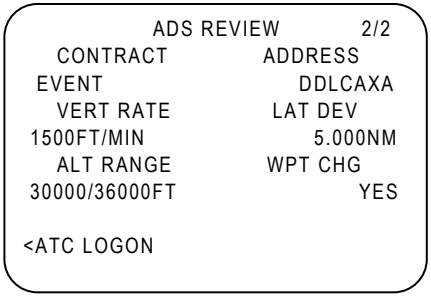
Note – ADS refers to Automatic Dependent Surveillance - Addressed (ADS-A) and/or Automatic Dependent Surveillance - Contract (ADS-C), which are synonymous. Automatic Dependent Surveillance - Broadcast (ADS-B) is provided in a later certification.

19.1	Access the MAIN MENU display. 
19.2	Line select ATC LOGON to access the ATC LOGON / STATUS display. 

19.3	Enter the four character ICAO identifier for the Oceanic Control Area (OCA) in the scratchpad. 
Note – The LOGON TO identifiers for the North Atlantic (NAT) are: *Gander* *CZQX* *Shanwick* *EGGX* *Reykjavik* *BIRD* *Santa Maria* *LPPO* *New York* *KZWY* *Bode* *ENOB*	
19.4	Line select identifier to LOGON TO field. The SEND prompt is displayed after all valid data are entered. Line select SEND to initiate logon to the ATC center. 

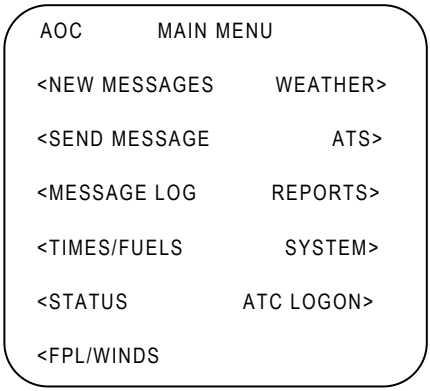
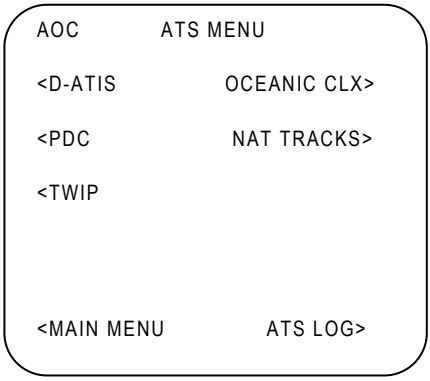
19.5	The SEND prompt changes to SENDING as the logon is being sent. 
19.6	The prompt changes to SENT, after confirmation that messages has been received by VHF ground or satellite network. 

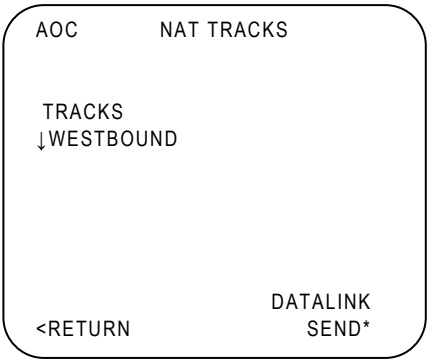
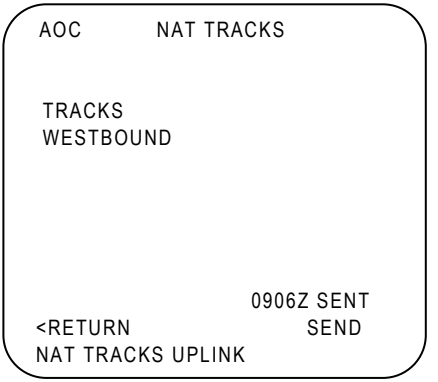
19.7	The prompt changes to ACCEPTED after the logon is accepted by ATC center. 
Note – If an ATC LOGON is not accepted by the ATC center within 10 minutes, the RE-LOG ON TO ATC CENTER message is displayed and the pilot should attempt the logon again. Not all ATC centers have been updated to accept the ADS only (i.e., no CPDLC) capability included in this certification. If the logon is not accepted by the ATC facility after the second logon attempt, the pilot should revert to voice communications.	
19.8	When ATC transmits at ADS contract(s), the ADS status changes to ACTIVE. When ADS is ACTIVE, the ADS REVIEW prompt is displayed. Line select ADS REVIEW to review the ADS contract(s). 

19.9	The ADS REVIEW pages are used to review ADS contracts (periodic and event) requested by an ATC center(s). If a periodic contract is requested by ATC, a report will be sent at the interval shown (every 576 seconds in this example). MSG CONTENT displays the type of ADS report data to be sent. Possible reports are: Flight ID, Predicted Route, Earth Reference, Air Reference, Meteorological Data, and Aircraft Intent. One ADS REVIEW page is displayed for each active contract. Page 1 is the most recent contract. The seven-character address of the ATC center requesting the ADS contract is also displayed. 
19.10	If an EVENT CONTRACT is requested by ATC, a report will be sent when the requested event occurs. Possible events are: vertical rate, lateral deviation (offset), altitude range, and waypoint change (sequence). When a VERT RATE, LAT DEV, or ALT RANGE event is triggered, it is removed from the display. 

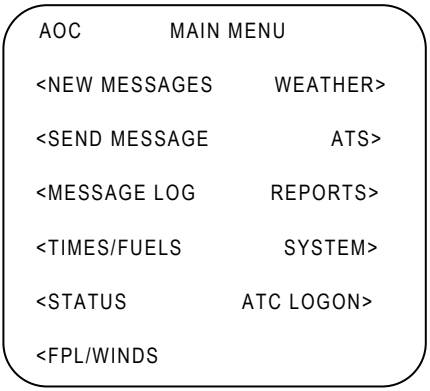
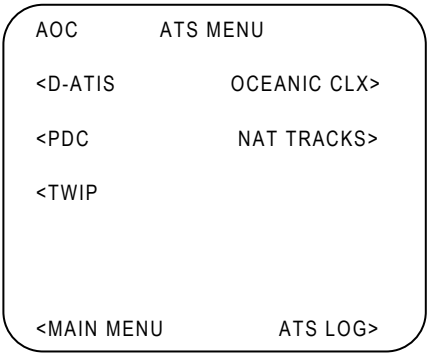
Note – The typical event contract in the NAT is for a WPT CHG only. This provides position reporting at each waypoint. As the flight progresses, the ATC centers requesting ADS contracts change. This results in different ADS REVIEW page. For example, in the NAT, the Central ADS (CADS) will automatically notify the next center as the aircraft approaches the OCA boundary. The next center will then request ADS waypoint change reports.

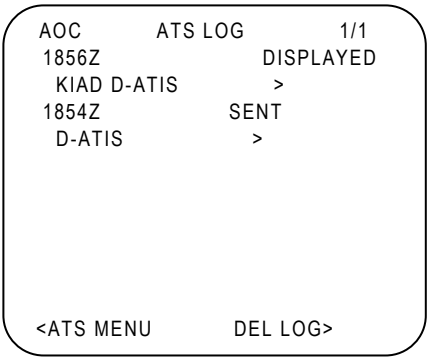
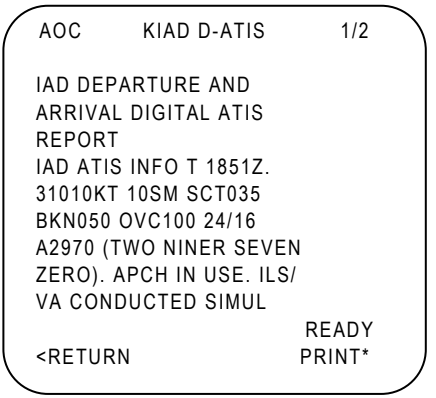
20 AOC – NAT Tracks

20.1	Access the MAIN MENU display. 
20.2	Line select ATS to access the ATS MENU display. 

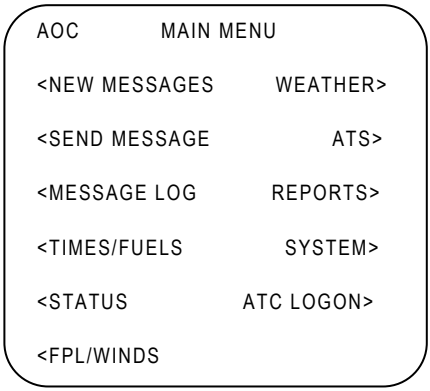
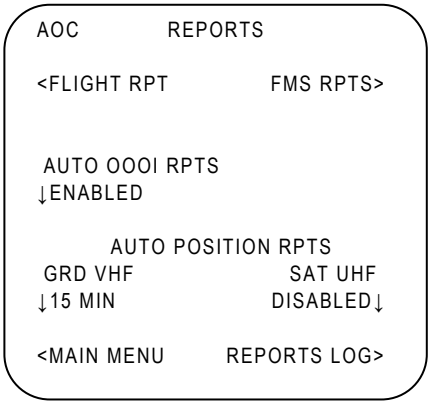
20.3	Line select NAT TRACKS to access the NAT TRACKS display. The TRACKS field defaults to ALL. Line select TRACKS to cycle through ALL, EASTBOUND, and WESTBOUND values for the NAT Track Message. With the desired value selected, line select SEND to send the request. 
20.4	When SEND is line selected, the display is 'frozen' for later review from the ATS LOG display. When the requested NAT Track Message is received, a NAT TRACKS UPLINK scratchpad advisory displays. 
Note – A NAT Track Message uplink is viewed as a new message on the NEW MESSAGES display. Please refer to the New Messages procedure for detailed instructions to view new messages.	

21 AOC – ATS Log

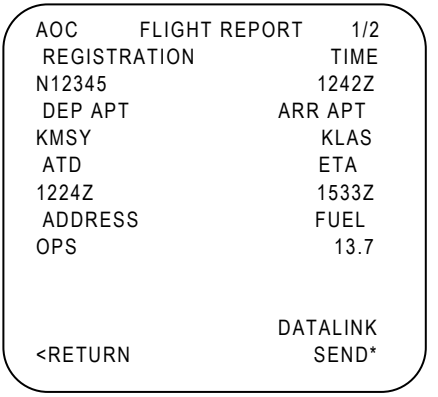
21.1	Access the MAIN MENU display. 
21.2	Line select ATS to access the ATS MENU display. 
Note – D-ATIS and TWIP reports may also be accessed from the WEATHER LOG display.	

21.3	Line select ATS LOG to access the ATS LOG display. The ATS LOG display contains all sent requests with a SENT label and all received responses previously viewed with a DISPLAYED label. To display a request or response, press the corresponding right line select key. To delete a single request or response, press the DEL function key to display the DELETE message in the scratchpad and then press the corresponding left line select key. Line select DELETE LOG and then CONFIRM to delete all requests and responses. Press the NEXT and PREV function keys to move through the ATS LOG pages.  AOC ATS LOG 1/1 1856Z DISPLAYED KIAD D-ATIS >>> 1854Z SENT D-ATIS >>> <ATS MENU DEL LOG>
21.4	With a request or response displayed, line select PRINT to print the request or response. Press the NEXT and PREV function keys to move through the pages of the request or response.  AOC KIAD D-ATIS 1/2 IAD DEPARTURE AND ARRIVAL DIGITAL ATIS REPORT IAD ATIS INFO T 1851Z. 31010KT 10SM SCT035 BKN050 OVC100 24/16 A2970 (TWO NINER SEVEN ZERO). APCH IN USE. ILS/ VA CONDUCTED SIMUL READY <RETURN PRINT*

22 AOC – Flight Report

22.1	Access the MAIN MENU display. 
22.2	Line select REPORTS to access the REPORTS display. 

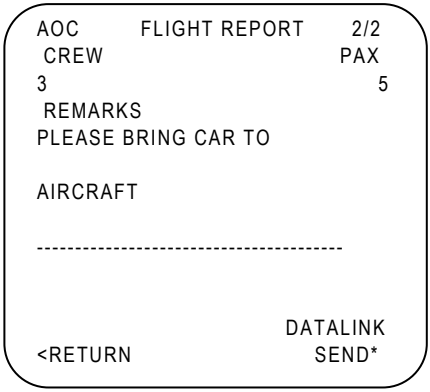
22.3	Line select FLIGHT RPT to access the FLIGHT REPORT 1/2 display. Enter the desired address for the report in the ADDRESS field. The address is maintained through power cycles and may be overwritten. Line select SEND to send the report or press the NEXT function key to access the FLIGHT REPORT 2/2 display in order to indicate the number of crew and passengers and also add free-text remarks to the report.



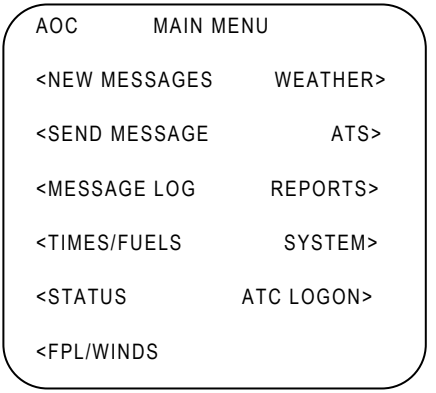
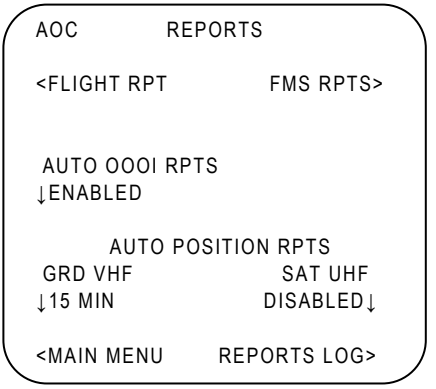
Note – The SEND prompt is not available unless at least one character is entered in the address field.

Note – Flight reports may be sent to several different types of recipients as indicated below. For example, to address a flight report to an e-mail recipient, please contact the GDC to set up a code that is entered in the ADDRESS field and then automatically converted to the desired e-mail address(es) when received at the GDC. To address a flight report to a fax machine, enter the fax number with an "F" prefix, but with no dashes or spaces, in the ADDRESS field.

OPS	*e-mail code (example)*
N12345	*aircraft subscribing to GDC services*
425-885-8100	*telephone number*
F4258858930	*facsimile number (“F” prefix)*
AHDQGLXH	*ACARS network address (“A” prefix)*
NKSNAXGSX	*AFTN address (“N” prefix)*
JEPP	*Jeppesen*
UVAIR	*Universal Weather & Aviation*
ARI	*Air Routing International*
BASEOPS	*Base Ops International*

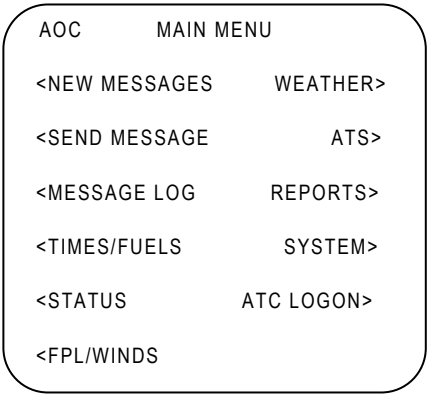
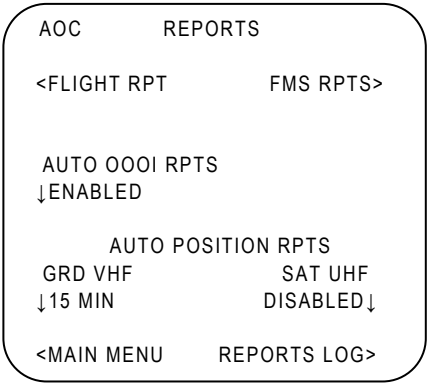
22.4	Optionally, enter the number of crew in the CREW field, the number of passengers in the PAX field, and any desired free-text remarks in the REMARKS fields. Line select SEND to send the report. 

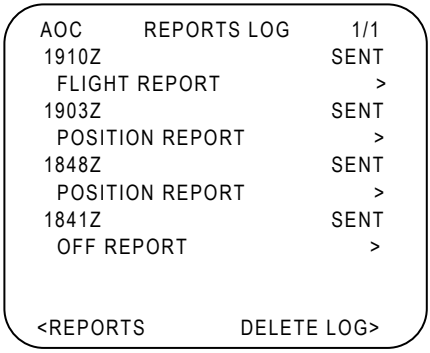
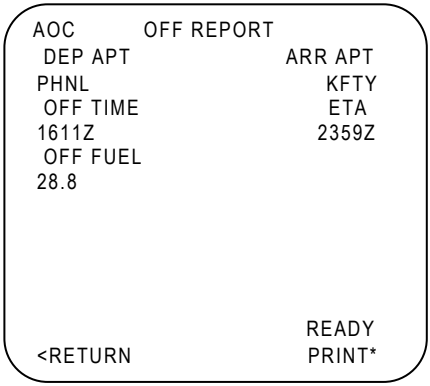
23 AOC – Automatic Reports

23.1	Access the MAIN MENU display. 
23.2	Line select REPORTS to access the REPORTS display. Line select AUTO OOOI RPTS to cycle through ENABLED and DISABLED values for automatic transmission of takeoff and landing reports. Line select GRD VHF and SAT UHF under AUTO POSITION RPTS to cycle through 15 MIN, 30 MIN, 60 MIN, and DISABLED values for automatic transmission of position reports over the ground-based VHF and satellite-based UHF networks respectively. 

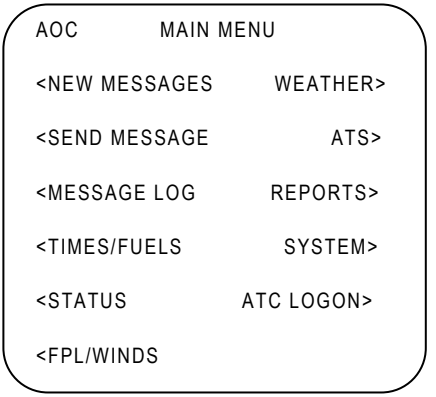
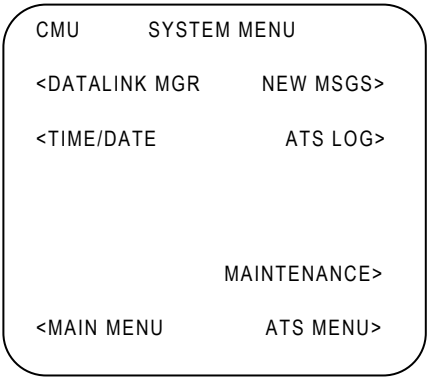
Note – The GDC recommends selecting 15 MIN for automatic position reports to ensure positive communications with the GDC.
Note – The AUTO OOOI REPORTS and AUTO POSITION REPORTS settings are maintained through power cycles.
Note – Takeoff and landing reports may be sent to an e-mail address or fax number previously arranged with the GDC.

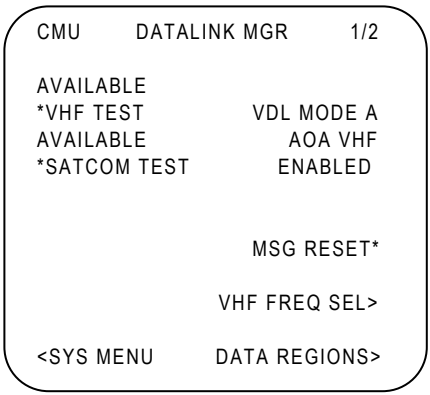
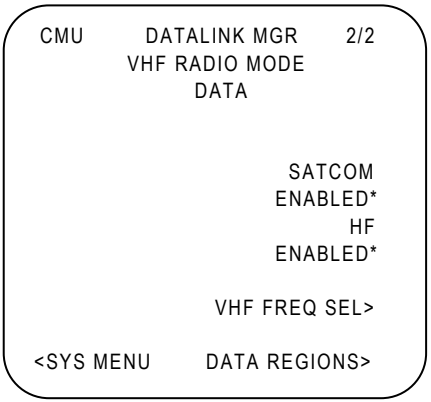
24 AOC – Reports Log

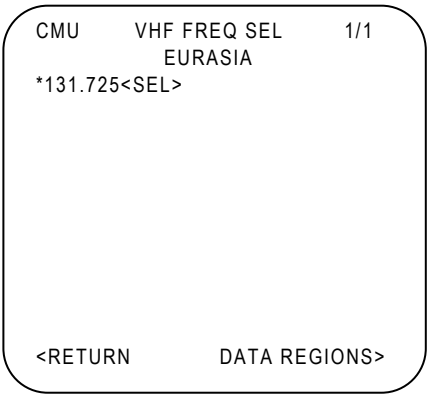
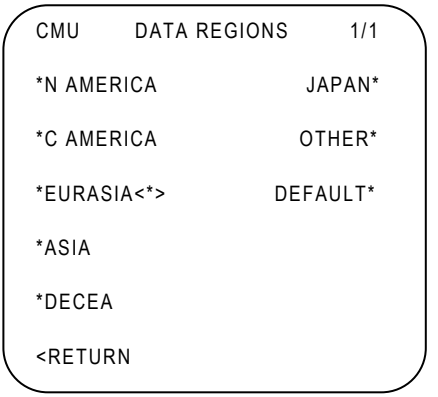
24.1	Access the MAIN MENU display. 
24.2	Line select REPORTS to access the REPORTS display. 

24.3	Line select REPORTS LOG to access the REPORTS LOG display. The REPORTS LOG display contains all sent flight, takeoff, landing, and position reports with a SENT label. To view a report, press the corresponding right line select key. To delete a single report, press the DEL function key to display the DELETE message in the scratchpad and then press the corresponding left line select key. Line select DELETE LOG and then CONFIRM to delete all reports. Press the NEXT and PREV function keys to move through the REPORTS LOG pages. 
24.4	With a report displayed, line select PRINT to print the report. 

25 System – Datalink Manager

25.1	Access the MAIN MENU display. 
25.2	Line select SYSTEM to access the SYSTEM MENU display. 

25.3	Line select DATALINK MGR to access the DATALINK MGR display. Line select VHF TEST and/or SATCOM TEST to independently test each transmission mode. The VDR modes are selected from LSK 1R. The VDL mode options are: Mode A, Mode X, and Mode 2, depending on the software option loaded in the aircraft. Mode A, indicates that CMF and VDR have negotiated Mode A and completed a successful link test. Mode X, indicates that CMF and VDR are negotiating mode for communications. Mode 2 indicating that CMF and VDR have negotiated Mode 2 and completed a successful link test. Line select MSG RESET and then CONFIRM to clear all display logs and reset all data to default values. 
25.4	Press the NEXT function key to access the DATALINK MGR 2/2 display. The VHF RADIO MODE should normally be DATA. 

25.5	Line select VHF FREQ SEL to access the VHF FREQ SEL 1/1 display. The selected VHF frequency is shown with <SEL> symbology. 
25.6	Line select DATA REGIONS to access the DATA REGIONS 1/1 display. The selected data region is shown with <*> symbology. 
Note – Manually selected data regions are maintained through power cycles. If a data region is manually selected, an additional RETURN TO AUTO prompt is displayed. Line select RETURN TO AUTO to allow the CMF to resume automatic data region selection.	

26 Weather Graphics

Note – When selecting region(s) or area, GDC recommends selecting one tile at a time per request.	
26.1	Worldwide graphical weather can be displayed by using the Uplink Wx (Up Wx) interface. Select UP WX. Select REQUEST. The area and product must be selected and then requested in the REQUEST tab. Progress of the uplink can be monitored in the STATUS tab. Uplinked data is stored in the system, and can then be displayed by using the RECEIVED DATA tab.

Note – Depending on the selected region, weather graphics available from the GDC include the following.

RADAR weather graphics are available for the continental United States. The RADAR composite is continuously updated on the ground from approximately 143 U.S. NEXRAD sites, and created (snapshot in time) approximately every 5 minutes. Similar to the onboard weather radar, radar reflectivity is color-coded by high, medium, and low intensity:

From 15 to 30 dBZ: Green (Low)
More than 30 to 40 dBZ: Yellow (Medium)
More than 40 dBZ: Red (High)

SATELLITE weather graphics are available worldwide. Satellite cloud-height product can be displayed in four shades of gray. This product provides nearly worldwide coverage, showing satellite-derived cloud-heights for levels:

11,000 ft – FL200
FL210 – FL300
FL310 – FL400
FL410 and higher

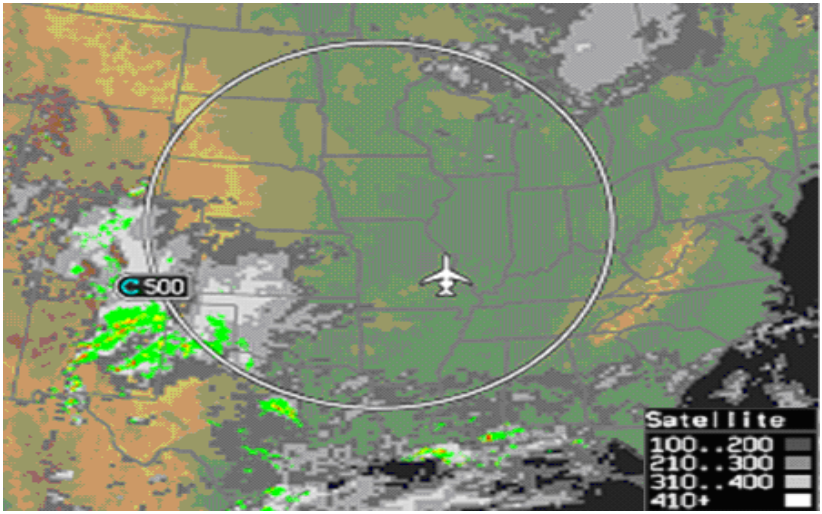
Satellite-derived cloud-heights south of 70°S are not currently available. Low-level clouds and fog are not displayed for altitudes below 11,000 ft. The cloud-height product is also time-stamped, based on the time of creation of the mosaic. This worldwide composite is continuously updated on the ground from approximately 9 different satellites, and created (snapshot in time) approximately every 15 minutes

WINDS (winds aloft forecasts) weather graphics are available worldwide. The winds layer is drawn by streamlines with five colors for magnitudes. This provides global winds forecast data at the next of eight 3-hour intervals (00Z, 03Z, 06Z, 09Z, 12Z, 15Z, 18Z, 21Z). The data is represented as magnitudes (in knots) along streamlines for tiers: 40 – 64 knots, 65 – 89 knots, 90 – 114 knots, 115 – 139 knots, 140 knots and higher. Flight level winds are available for each of the following flight level ranges:

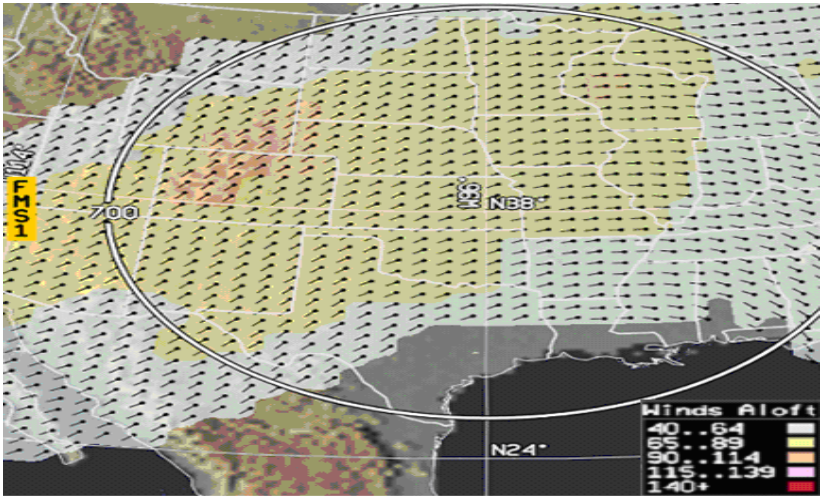
FL190 – FL200
FL210 – FL230
FL240 – FL260
FL270 – FL290
FL300 – FL330
FL340 – FL380
FL390 – FL440
FL470 – FL500

Note – Sample weather graphics available from the GDC include the following.

1) RADAR (green/yellow/red) and Satellite Cloud Height (grayscale in thousands of feet)::



2) Wind Graphics, with legend shown (in knots):



Appendix A – Air Traffic Services Airports

United States

AIRPORT	CITY, STATE	PDC	D-ATIS	TWIP
KABQ	Albuquerque, NM	√	√	√
KALB	Albany, NY	√	√	
KATL	Atlanta, GA	√	√	√
KAUS	Austin, TX	√	√	
KBDL	Bradley, CT	√	√	
KBNA	Nashville, TN	√	√	√
KBOI	Boise, ID	√	√	
KBOS	Boston, MA	√	√	√
KBUF	Buffalo, NY	√	√	
KBUR	Burbank, CA	√	√	
KBWI	Baltimore, MD	√	√	√
KCLE	Cleveland, OH	√	√	√
KCLT	Charlotte, NC	√	√	√
KCMH	Columbus, OH	√	√	√
KCVG	Cincinnati, OH	√	√	√
KDAL	Dallas (Love), TX	√	√	√
KDAY	Dayton, OH			√
KDCA	Washington (Nat'l), DC	√	√	√
KDEN	Denver, CO	√	√	√
KDFW	Dallas-Fort Worth, TX	√	√	√
KDTW	Detroit, MI	√	√	√
KELP	El Paso, TX	√	√	
KEWR	Newark, NJ	√	√	
KFLL	Fort Lauderdale, FL	√	√	√
KGSO	Greensboro, NC	√	√	
KHOU	Houston (Hobby), TX	√	√	√
KHPN	White Plains, NY	√	√	
KIAD	Washington (Dulles), DC	√	√	√
KIAH	Houston (Intercont'l), TX	√	√	√
KICT	Wichita, KS			√
KIND	Indianapolis, IN	√	√	√
KJAX	Jacksonville, FL	√	√	
KJFK	New York (Kennedy), NY	√	√	√
KLAS	Las Vegas, NV	√	√	
KLAX	Los Angeles, CA	√	√	
KLGA	New York (LaGuardia), NY	√	√	√
KLIT	Little Rock, AR	√	√	
KMCI	Kansas City, MO	√	√	√
KMCO	Orlando (Int'l), FL	√	√	√
KMDW	Chicago (Midway), IL	√	√	√
KMEM	Memphis, TN	√	√	√

United States

AIRPORT	CITY, STATE	PDC	D-ATIS	TWIP
KMIA	Miami, FL	√	√	√
KMKE	Milwaukee, WI	√	√	√
KMSP	Minneapolis-St. Paul, MN	√	√	√
KMSY	New Orleans, LA	√	√	√
KOAK	Oakland, CA	√	√	
KOKC	Oklahoma City, OK	√	√	√
KOMA	Omaha, NE	√	√	
KONT	Ontario, CA	√	√	
KORD	Chicago (O'Hare), IL	√	√	√
KPBI	West Palm Beach, FL	√	√	√
KPDX	Portland, OR	√	√	
KPHL	Philadelphia, PA	√	√	√
KPHX	Phoenix, AZ	√	√	
KPIT	Pittsburgh, PA	√	√	√
KPVD	Providence, RI	√	√	√
KRDU	Raleigh-Durham, NC	√	√	√
KRNO	Reno, NV	√	√	
KSAN	San Diego, CA	√	√	
KSAT	San Antonio, TX	√	√	
KSDF	Louisville, KY	√	√	√
KSEA	Seattle-Tacoma, WA	√	√	
KSFO	San Francisco, CA	√	√	
KSJC	San Jose, CA	√	√	
KSLC	Salt Lake City, UT	√	√	√
KSMF	Sacramento, CA	√	√	
KSNA	Orange County, CA	√	√	
KSTL	St. Louis, MO	√	√	√
KTEB	Teterboro, NJ	√	√	
KTPA	Tampa, FL	√	√	√
KTUL	Tulsa, OK	√	√	√
PANC	Anchorage, AK	√	√	
PHNL	Honolulu, HI	√	√	
TJSJ	San Juan, PR	√	√	

Canada

AIRPORT	CITY	PDC	D-ATIS	TWIP
CYEG	Edmonton		√	
CYHM	Hamilton		√	
CYHZ	Halifax		√	
CYLW	Kelowna		√	
CYMX	Mirabel		√	
CYOW	Ottawa		√	
CYQB	Quebec City		√	
CYQM	Moncton		√	

Canada

AIRPORT	CITY	PDC	D-ATIS	TWIP
CYQR	Regina		√	
CYQT	Thunder Bay		√	
CYQX	Gander		√	
CYUL	Montreal		√	
CYVR	Vancouver		√	
CYWG	Winnipeg		√	
CYXE	Saskatoon		√	
CYYC	Calgary		√	
CYYJ	Victoria		√	
CYYT	St. John's		√	
CYYZ	Toronto		√	

Europe

AIRPORT	CITY	PDC	D-ATIS	TWIP
	GERMANY			
EDDB	Berlin – Schonefeld		√	
EDDF	Frankfurt		√	
EDDG	Munster		√	
EDDH	Hamburg		√	
EDDI	Berlin – Tempelhof		√	
EDDK	Cologne		√	
EDDL	Dusseldorf		√	
EDDM	Munich		√	
EDDN	Nuremberg		√	
EDDP	Leipzig		√	
EDDS	Stuttgart		√	
EDDT	Berlin – Tegel		√	
EDDV	Hannover		√	
EDDW	Bremen		√	
	NORWAY			
ENGM	Oslo		√	

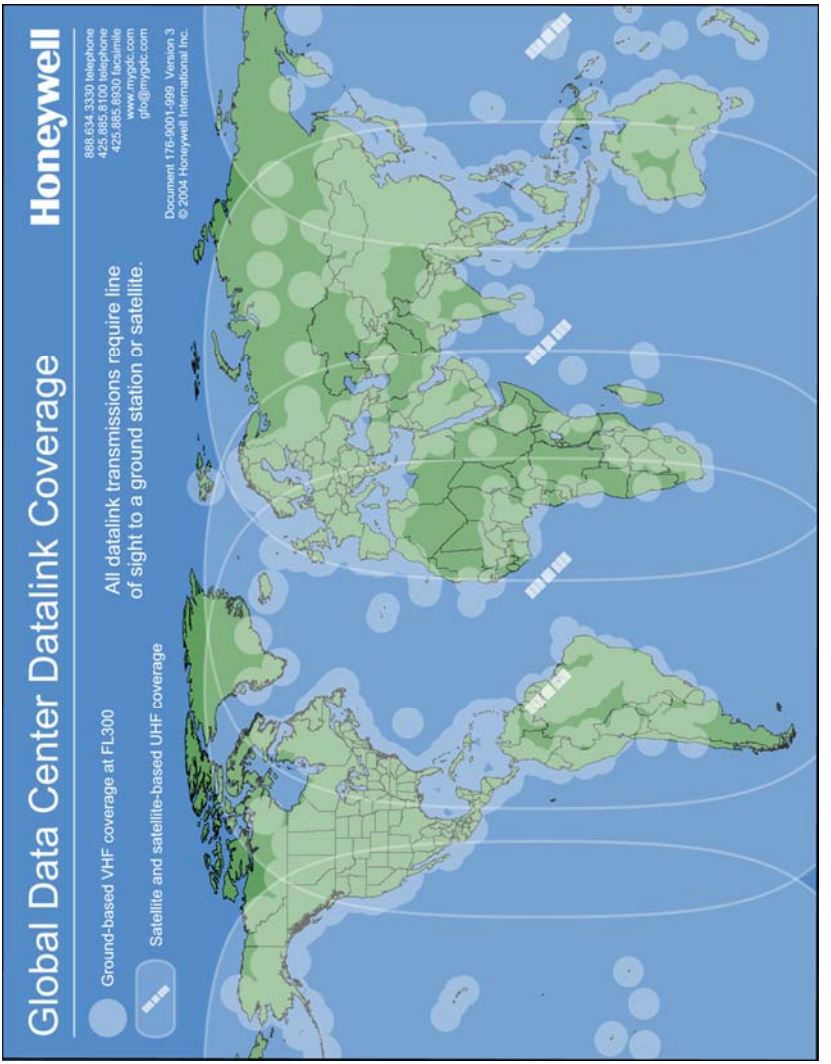
Asia / Pacific

AIRPORT	CITY	PDC	D-ATIS	TWIP
	CHINA			
VHHH	Hong Kong		√	
	NEW ZEALAND			
NZAA	Auckland		√	
NZCH	Christchurch		√	
NZWN	Wellington		√	
	SINGAPORE			
WSSS	Singapore		√	

Asia / Pacific

AIRPORT	CITY	PDC	D-ATIS	TWIP
THAILAND				
VTBD	Bangkok		√	
VTCC	Chiang Mai		√	
VTSS	Hat Yai		√	
VTSP	Phuket		√	

Appendix B – Datalink Coverage Map



THIS PAGE INTENTIONALLY
LEFT BLANK

Honeywell International Inc.
Global Data Center
15001 NE 36th Street
Redmond, WA 98052 USA
888.634.3330 telephone
425.885.8100 telephone
425.885.8930 facsimile
www.mygdc.com
gfo@mygdc.com

Document 176-9001-983 Version 3