

# **Primus Epic<sup>®</sup> Communications Management Function (CMF)**

**Gulfstream G350/G450/G500/G550  
(Cert Charlie)**

## **Global Data Center Services Reference Guide**

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# **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<sup>SM</sup> 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 from Jeppesen, 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, 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.

## **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, aviation professionals able to provide all GDC services.

### **Personal Computer Access**

With AFISCOM Express software installed on a personal computer, connect to the GDC computer system via the Internet or dial-up modem in order to directly access GDC services. The latest version of AFISCOM Express, as well as other GDC publications, are available for download at [www.mygdc.com](http://www.mygdc.com).

### **Web Access**

Please visit the GDC's website at [www.mygdc.com](http://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.

### **Datalink Access**

Request GDC services via datalink through Honeywell's Primus Epic<sup>®</sup> 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<sup>®</sup> Communications Management Function (CMF) datalink platform. This reference guide applies to Gulfstream G350/G450/G500/G550 aircraft with the Cert Charlie software load, which includes GDC Aircraft Modifiable Information (AMI) table part number GS-CF14121-0316.

## **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 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 Aéreo (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 L-band satellite-based 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 Aircraft 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 Charlie software load, which includes GDC AMI table part number GS-CF14121-0316. 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 the GDC as part of the AMI table, which allows the GDC 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 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*

There are no functions currently available through the ATS displays.

#### *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 callsigns, must be registered through the GDC with the FAA. Use of PDCs at participating airports is expected by ATC 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 to request a PDC.

If ATC has forwarded the PDC to the GDC, 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 change to the filed route and/or altitude or if the clearance needs to be negotiated. A PDC is valid for two hours beyond the filed time of departure.

## **Oceanic Clearance Delivery (OCD)**

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

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

Gander OACC sends the clearance to the GDC 10 to 60 minutes prior to aircraft entry into oceanic airspace. For aircraft in flight, Gander OACC generally sends the clearance by 70° West longitude. For aircraft departing Gander (CYQX), Goose Bay (CYJR), and St. John's (CYYT) airports, Gander OACC sends the oceanic clearance to the GDC at the same time it sends the departure clearance to the tower. Readback of the oceanic clearance is given to the tower, after which the tower issues the departure clearance.

With automatic position reports enabled, the GDC automatically sends the clearance to the aircraft as a datalink message as soon as it is received from Gander OACC. If automatic position reports are disabled, the flight crew must request the clearance. Please refer to the Oceanic Clearance Delivery procedure for detailed instructions to request an oceanic clearance for an eastbound transatlantic flight. Begin requesting the clearance approaching 70° West longitude, but if the clearance is not received by 25 minutes prior to entry into oceanic airspace, contact Gander OACC on the appropriate voice frequency.

If the GDC has received the oceanic clearance from Gander OACC, the clearance is sent to the aircraft as a datalink message. If the GDC has not received the oceanic clearance from Gander OACC, a datalink message is sent to the aircraft indicating that the oceanic clearance has not been received from Gander OACC and that the oceanic clearance may be requested again in 10 minutes. Multiple oceanic clearance requests may be sent until 25 minutes prior to entry into oceanic airspace. Oceanic clearances are valid for 30 minutes beyond the issue time and voice readback of oceanic clearances is required.

## **Oceanic Route Clearance Authorisation (ORCA)**

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. This service is known as Oceanic Route Clearance Authorisation (ORCA) and requires that the aircraft be registered with the GDC for the service.

The flight crew should request the clearance via datalink between 30 and 90 minutes prior to entry into the Shanwick OCA. Please refer to the Oceanic Route Clearance Authorisation procedure for detailed instructions. Shanwick normally responds to the clearance request with a message indicating that the clearance should be received within the next 15 minutes. Shanwick 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. The flight crew must promptly acknowledge the clearance via datalink by line selecting

ACKNOWLEDGE on the message page containing the clearance. Failure to promptly acknowledge the clearance results in cancellation of the clearance transaction and requires that Shanwick be contacted by voice. Upon receipt of the clearance acknowledgement, Shanwick sends a message to the aircraft confirming the clearance. 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.

Please note that 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 also 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.

## **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, such as an eastbound transatlantic oceanic clearance, 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.

Second, automatic position reports, as well as reports for all other downlinks, are accessible through AFISCOM Express software in both text and graphic form. These flight following reports allow users to track aircraft progress and review previous flights from the ground. Please refer to the AFISCOM Express User's Guide for instructions to obtain and display flight following reports. Please also refer to the Automatic Reports procedure for detailed instructions 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	<p>Press the NAV function key to access the NAV INDEX 1/2 display.</p> <div data-bbox="327 297 753 719" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;">NAV INDEX      1/2</p> <p>&lt;FPL LIST                      ATC&gt;</p> <p>&lt;WPT LIST                      DATALINK&gt;</p> <p>&lt;NAV IDENT                      FLT SUM&gt;</p> <p>&lt;POS SENSORS</p> <p>&lt;CROSS PTS                      PATTERNS&gt;</p> <p>&lt;DEPARTURE                      ARRIVAL&gt;</p> </div>
1.2	<p>Line select DATALINK to access the DATALINK INDEX 1/1 display.</p> <div data-bbox="327 841 753 1230" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;">DATALINK INDEX      1/1</p> <p>&lt;FLT PLAN                      WINDS REQ&gt;</p> <p>&lt;REPORTS                      WINDS REV&gt;</p>   <p>&lt;CMF MENU</p> </div>

1.3	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> DATALINK FLT PLAN  1/1 REQUEST FPL BY FPL NUM           OR FPL INFO&gt; FLIGHT PLAN NUMBER D1234  &lt;DATALINK           SEND REQST&gt; </pre> </div>
1.4	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> DATALINK FLT PLAN  1/1 REQUEST FPL BY FPL INFO           OR FPL NUM&gt; DATE               ETD 24MAY04           1600 ORIGIN            DEST KSEA              KPHX  &lt;DATALINK           SEND REQST&gt; </pre> </div>

*Note – If no datalink communication is available, LINK UNAVAIL will display instead of SEND REQST and will have no action if line selected.*



<p>1.5</p>	<p>When the flight plan is received, the FPL REVIEW prompt displays and FLT PLAN RECEIVED displays in the scratchpad.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%;"> <pre>           DATALINK FLT PLAN   1/1         REQUEST FPL BY         FPL NUM           OR FPL INFO&gt;         FLIGHT PLAN NUMBER         D1234                                  PRINT&gt;                                  FPL REVIEW&gt;  &lt;DATALINK           SEND REQST&gt; FLT PLAN RECEIVED           </pre> </div>
<p>1.6</p>	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%;"> <pre>           DATALINK FPL REVIEW   1/4           ORIGIN           FPL ID         RW16R KSEA           KSEA-KPHX           SID ELMAA6. CVO         *ALT (161°)           0830A           SID ELMAA6. CVO         *LL01                 3000A           SID ELMAA6. CVO         *INT (227°)           SID ELMAA6. CVO           ELMAA  &lt;DATALINK           ACTIVATE&gt;           </pre> </div>
<p><i>Note – The Epic FMS is limited to 100 flight plan waypoints, including the departure and arrival airports.</i></p>	

## 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.*

*Note – Requesting and accepting winds and temperatures aloft forecasts for the active flight plan waypoints fulfills the same function as updating an active AFIS<sup>®</sup> flight plan.*

2.1 Press the NAV function key to access the NAV INDEX 1/2 display.

NAV INDEX		1/2
<FPL LIST		ATC>
<WPT LIST		DATALINK>
<NAV IDENT		FLT SUM>
<POS SENSORS		
<CROSS PTS		PATTERNS>
<DEPARTURE		ARRIVAL>

2.2 Line select DATALINK to access the DATALINK INDEX 1/1 display.

DATALINK INDEX		1/1
<FLT PLAN		WINDS REQ>
<REPORTS		WINDS REV>

<p>2.3</p>	<p>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 not include the active flight plan waypoints in the request, line select NO to change the value of INCLUDE FPL WPTS to NO.</p> <div data-bbox="327 354 755 763" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;">DATALINK WINDS REQ 1/1 INCLUDE FPL WPTS</p> <p>YES OR NO&gt;</p> <p>-----</p> <p style="text-align: center;">&lt;DATALINK SEND REQST&gt;</p> </div>
<p>2.4</p>	<p>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.</p> <div data-bbox="327 961 755 1383" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;">DATALINK WINDS REQ 1/1 INCLUDE FPL WPTS</p> <p>NO OR YES&gt;</p> <p><b>YQY</b></p> <p><b>CYQX</b></p> <p><b>5140N</b></p> <p>-----</p> <p style="text-align: center;">&lt;DATALINK SEND REQST&gt;</p> </div>

*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.

```
          DATALINK WINDS REV   1/1  
  
  <FPL WPTS                    PRINT>  
  
  <YQY  
  
  <CYQX  
  
  <5140N  
  
  <DATALINK                    ACCEPT>  
  NEW WINDS AVAIL
```

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.

WINDS ALOFT		1/1
IDENT	DAY/TIME	
CVO	24/1200Z	PRINT>
ALT	WIND	TEMP
FL390	240/ 41	-53° C
FL430	240/ 40	-54° C
FL470	240/ 40	-54° C
FL510	250/ 36	-58° C
<DATALINK		DLK WINDS>

*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.

```
AOC          MAIN MENU

<NEW MESSAGES          WEATHER>

<SEND MESSAGE          ATS>

<MESSAGE LOG          REPORTS>

<TIMES/FUELS          SYSTEM>

<STATUS                ATC LOGON>

<FPL/WINDS
D-ATIS UPLINK
```

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.

```
1702Z  NEW MESSAGES  1/1
1701Z                NEW
  KTEB D-ATIS        >
1654Z                NEW
  MESSAGE            >
1646Z                NEW
  KPBI TERM WX      >

<RETURN                DELETE LOG>
```

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.

```
AOC      KTEB D-ATIS      1/3

TEB DEPARTURE AND
ARRIVAL DIGITAL ATIS
REPORT
TEB ATIS INFO G 1851Z.
15007KT 10SM CLR 27/16
A3020 (THREE ZERO TWO
ZERO). VOR/DME A APCH IN
USE. ARR 19, DEP 24.
FIXED WING VFR DEPARTURE

                                READY
<RETURN                          PRINT*
```

*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.

```
AOC      MAIN MENU

<NEW MESSAGES      WEATHER>

<SEND MESSAGE      ATC>

<MESSAGE LOG      REPORTS>

<TIMES/FUELS      SYSTEM>

<STATUS      ATC LOGON>

<FPL/WINDS
```

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.

```
AOC      SEND MESSAGE  1/3
FROM
N12345
TO
OPS
ADDRESS
425 885 8100
TEXT
NEW ETA 1845Z

GRD VHF
DATALINK
<RETURN      SEND*
```

*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.*

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

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.

AOC      SEND MESSAGE      2/3

TEXT

PLEASE UPDATE CUSTOMS

AND LIMO

THANKS

-----

GRD VHF  
DATALINK

<RETURN                      SEND\*

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.

AOC      SEND MESSAGE      3/3  
TEXT  
-----  
-----  
-----  
-----  
GRD VHF  
DATALINK  
SEND\*  
<RETURN

## 5 AOC – Message Log

<p>5.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          MAIN MENU  &lt;NEW MESSAGES      WEATHER&gt;  &lt;SEND MESSAGE      ATS&gt;  &lt;MESSAGE LOG       REPORTS&gt;  &lt;TIMES/FUELS      SYSTEM&gt;  &lt;STATUS           ATC LOGON&gt;  &lt;FPL/WINDS                     </pre> </div>
<p>5.2</p>	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          MESSAGE LOG    1/1 1801Z              DISPLAYED   MESSAGE              &gt; 1757Z              SENT   SEND MESSAGE        &gt;  &lt;MAIN MENU          DELETE LOG&gt;                     </pre> </div>

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.

```
AOC          MESSAGE

FROM: OPS
TO: N12345
RCVD YOUR MSG RE PULL
CAR UP TO AIRCRAFT
WILL DO

                                READY
<RETURN                        PRINT*
```

## 6 AOC – Times/Fuels

<p>6.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          MAIN MENU  &lt;NEW MESSAGES      WEATHER&gt;  &lt;SEND MESSAGE      ATS&gt;  &lt;MESSAGE LOG       REPORTS&gt;  &lt;TIMES/FUELS      SYSTEM&gt;  &lt;STATUS            ATC LOGON&gt;  &lt;FPL/WINDS                     </pre> </div>
<p>6.2</p>	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          TIMES/FUELS      1/2           CURRENT FLIGHT           N12345  KMSY-KLAS           1551Z  26 FEB 04  OUT        BLOCK            IN 1217Z      03+24            1541Z 15. 5      10. 2            5. 3 OFF        FLIGHT          ON 1224Z      03+13            1537Z 15. 4      10. 0            5. 4                                  READY &lt;MAIN MENU                                PRINT*                     </pre> </div>
<p><i>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.</i></p>	

*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

<p>7.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%;"> <pre> AOC          MAIN MENU  &lt;NEW MESSAGES      WEATHER&gt;  &lt;SEND MESSAGE      ATS&gt;  &lt;MESSAGE LOG       REPORTS&gt;  &lt;TIMES/FUELS      SYSTEM&gt;  &lt;STATUS            ATC LOGON&gt;  &lt;FPL/WINDS                     </pre> </div>
<p>7.2</p>	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%;"> <pre> AOC          STATUS      1/3 REGISTRATION      DATE N12345            12 MAR 04 PROVIDER          TIME GDC               1403Z DEP APT           ARR APT TXKF              KILM ATD              ETE      ETA 1314Z            01+19    1523Z DATALINK SAT UHF           TEST&gt;  &lt;MAIN MENU      TEST LOG&gt;                     </pre> </div>

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.

AOC	STATUS	2/3
0001		LATITUDE
OFF		N40° 23. 4'
AIR/GROUND		LONGITUDE
AIR		W085° 02. 9'
MAIN DOOR		ALTITUDE
CLOSED		41024
PARKING BRAKE		TAS/MACH
RELEASED		. 0/0. 027
ACTIVE CMF		FUEL
CMF 1		17. 6
<MAIN MENU		

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 Aircraft 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.

AOC	STATUS	3/3
S/W		TYPE
CMFBUILD_050117		GLF5
HGI		ADDRESS
DB7030972-03000		00000048
AMI		AIRLINE
GS-CF14132-0216		GDC
FIDB		
PVG5-XXXXX		
<MAIN MENU		AMI DEBUG>



## 8 AOC – Test

<p>8.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          MAIN MENU  &lt;NEW MESSAGES      WEATHER&gt;  &lt;SEND MESSAGE      ATS&gt;  &lt;MESSAGE LOG       REPORTS&gt;  &lt;TIMES/FUELS      SYSTEM&gt;  &lt;STATUS           ATC LOGON&gt;  &lt;FPL/WINDS                     </pre> </div>
<p>8.2</p>	<p>Line select STATUS to access the STATUS 1/2 display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          STATUS      1/3 REGISTRATION      DATE N12345           12 MAR 04 PROVIDER          TIME GDC              1403Z DEP APT          ARR APT TXKF             KILM ATD             ETE      ETA 1314Z           01+19   1523Z DATALINK SAT UHF          TEST&gt; &lt;MAIN MENU      TEST LOG&gt;                     </pre> </div>
<p>8.3</p>	<p>Line select TEST to access the TEST display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          TEST  GRD VHF DATALINK &lt;RETURN      SEND*                     </pre> </div>

8.4	<p>Line select SEND to send a test downlink.</p> <div data-bbox="277 172 706 553" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC TEST</p> <p style="text-align: right;">GRD VHF 1818Z SENT SEND</p> <p>&lt;RETURN TEST UPLINK</p> </div>
8.5	<p>When the test uplink is received in response, a TEST UPLINK scratchpad advisory displays. Access the message through the NEW MESSAGES display.</p> <div data-bbox="277 688 706 1122" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC TEST</p> <p>TEST MESSAGE RECEIVED BY GDC AT 1819Z</p> <p style="text-align: right;">READY PRINT*</p> <p>&lt;RETURN</p> </div>
<p><i>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.</i></p>	

## 9 AOC – Test Log

<p>9.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          MAIN MENU  &lt;NEW MESSAGES          WEATHER&gt;  &lt;SEND MESSAGE          ATS&gt;  &lt;MESSAGE LOG          REPORTS&gt;  &lt;TIMES/FUELS          SYSTEM&gt;  &lt;STATUS          ATC LOGON&gt;  &lt;FPL/WINDS                     </pre> </div>
<p>9.2</p>	<p>Line select STATUS to access the STATUS 1/3 display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          STATUS          1/3 REGISTRATION          DATE N12345          12 MAR 04 PROVIDER          TIME GDC          1403Z DEP APT          ARR APT TXKF          KILM ATD          ETE          ETA 1314Z          01+19          1523Z DATALINK SAT UHF          TEST&gt;  &lt;MAIN MENU          TEST LOG&gt;                     </pre> </div>

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.

```
AOC      TEST LOG      1/1
1819Z                                DISPLAYED
TEST                                           >
1818Z                                SENT
TEST                                           >

<STATUS                                DELETE LOG>
```

9.4

With a test message displayed, line select PRINT to print the test message.

```
AOC  TEST

TEST MESSAGE RECEIVED
BY GDC AT 1819Z

                                READY
<RETURN                            PRINT*
```

## 10 AOC – Terminal Weather

10.1

Access the MAIN MENU display.

```

AOC          MAIN MENU

<NEW MESSAGES          WEATHER>

<SEND MESSAGE          ATS>

<MESSAGE LOG          REPORTS>

<TIMES/FUELS          SYSTEM>

<STATUS          ATC LOGON>

<FPL/WINDS
    
```

10.2

Line select WEATHER to access the WEATHER MENU display.

```

AOC          WEATHER MENU

<TERMINAL WX          METRO WX>

<D-ATIS

<TWIP

<WINDS ALOFT

<SIGMETS

<MAIN MENU          WEATHER LOG>
    
```

10.3	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC      TERMINAL WX AIRPORT KBFI AIRPORT KBUR AIRPORT ---- AIRPORT  AIRPORT  GRD VHF DATALINK SEND* &lt;RETURN </pre> </div>
------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

*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	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC      TERMINAL WX AIRPORT KBFI AIRPORT KBUR AIRPORT **** AIRPORT  AIRPORT  GRD VHF 0124Z SENT SEND &lt;RETURN TERMINAL WX UPLINK </pre> </div>
------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

*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

<p>11.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            MAIN MENU</p> <p>&lt;NEW MESSAGES            WEATHER&gt;</p> <p>&lt;SEND MESSAGE            ATS&gt;</p> <p>&lt;MESSAGE LOG            REPORTS&gt;</p> <p>&lt;TIMES/FUELS            SYSTEM&gt;</p> <p>&lt;STATUS            ATC LOGON&gt;</p> <p>&lt;FPL/WINDS</p> </div>
<p>11.2</p>	<p>Line select WEATHER to access the WEATHER MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            WEATHER MENU</p> <p>&lt;TERMINAL WX            METRO WX&gt;</p> <p>&lt;D-ATIS</p> <p>&lt;TWIP</p> <p>&lt;WINDS ALOFT</p> <p>&lt;SIGMETS</p> <p>&lt;MAIN MENU            WEATHER LOG&gt;</p> </div>
<p><i>Note – D-ATIS reports may also be requested from the ATS MENU display.</i></p>	

11.3	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          D-ATIS AIRPORT KIAD AIRPORT KIND AIRPORT ---- AIRPORT  AIRPORT  GRD VHF DATALINK SEND* &lt;RETURN </pre> </div>
------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

*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	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          D-ATIS AIRPORT KIAD AIRPORT KIND AIRPORT **** AIRPORT  AIRPORT  GRD VHF 1546Z SENT SEND &lt;RETURN D-ATIS UPLINK </pre> </div>
------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

*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

<p>12.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            MAIN MENU</p> <p>&lt;NEW MESSAGES            WEATHER&gt;</p> <p>&lt;SEND MESSAGE            ATS&gt;</p> <p>&lt;MESSAGE LOG            REPORTS&gt;</p> <p>&lt;TIMES/FUELS            SYSTEM&gt;</p> <p>&lt;STATUS            ATC LOGON&gt;</p> <p>&lt;FPL/WINDS</p> </div>
<p>12.2</p>	<p>Line select WEATHER to access the WEATHER MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            WEATHER MENU</p> <p>&lt;TERMINAL WX            METRO WX&gt;</p> <p>&lt;D-ATIS</p> <p>&lt;TWIP</p> <p>&lt;WINDS ALOFT</p> <p>&lt;SIGMETS</p> <p>&lt;MAIN MENU            WEATHER LOG&gt;</p> </div>
<p><i>Note – TWIP reports may also be requested from the ATS MENU display.</i></p>	

12.3	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          TWIP AIRPORT KCLT AIRPORT ----- AIRPORT  GRD VHF DATALINK SEND*  &lt;RETURN</pre> </div>
------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

*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	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          TWIP AIRPORT KCLT AIRPORT **** AIRPORT  GRD VHF 1414Z SENT SEND  &lt;RETURN TWIP UPLINK</pre> </div>
------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

*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

<p>13.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            MAIN MENU</p> <p>&lt;NEW MESSAGES            WEATHER&gt;</p> <p>&lt;SEND MESSAGE            ATS&gt;</p> <p>&lt;MESSAGE LOG            REPORTS&gt;</p> <p>&lt;TIMES/FUELS            SYSTEM&gt;</p> <p>&lt;STATUS            ATC LOGON&gt;</p> <p>&lt;FPL/WINDS</p> </div>
<p>13.2</p>	<p>Line select WEATHER to access the WEATHER MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            WEATHER MENU</p> <p>&lt;TERMINAL WX            METRO WX&gt;</p> <p>&lt;D-ATIS</p> <p>&lt;TWIP</p> <p>&lt;WINDS ALOFT</p> <p>&lt;SIGMETS</p> <p>&lt;MAIN MENU            WEATHER LOG&gt;</p> </div>

13.3	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          WINDS ALOFT   LOCATION   YQY   LOCATION   CYQX   LOCATION   5140N   LOCATION   -----   LOCATION                                  GRD VHF                                 DATALINK &lt;RETURN                                SEND*</pre> </div>
------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

*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	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC          WINDS ALOFT   LOCATION   YQY   LOCATION   CYQX   LOCATION   5140N   LOCATION   *****   LOCATION                                  GRD VHF                                 0129Z SENT &lt;RETURN                                SEND WINDS ALOFT UPLINK</pre> </div>
------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

*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

<p>14.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            MAIN MENU</p> <p>&lt;NEW MESSAGES            WEATHER&gt;</p> <p>&lt;SEND MESSAGE            ATS&gt;</p> <p>&lt;MESSAGE LOG            REPORTS&gt;</p> <p>&lt;TIMES/FUELS            SYSTEM&gt;</p> <p>&lt;STATUS            ATC LOGON&gt;</p> <p>&lt;FPL/WINDS</p> </div>
<p>14.2</p>	<p>Line select WEATHER to access the WEATHER MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            WEATHER MENU</p> <p>&lt;TERMINAL WX            METRO WX&gt;</p> <p>&lt;D-ATIS</p> <p>&lt;TWIP</p> <p>&lt;WINDS ALOFT</p> <p>&lt;SIGMETs</p> <p>&lt;MAIN MENU            WEATHER LOG&gt;</p> </div>

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.

```
AOC          SIGMETS

FROM          TO
KPHX         K MSP

GRD VHF
DATALINK
SEND*

<RETURN
```

*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.

```
AOC          SIGMETS

FROM          TO
KPHX         K MSP

GRD VHF
0129Z SENT
SEND

<RETURN
SIGMETS UPLINK
```

*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

<p>15.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            MAIN MENU</p> <p>&lt;NEW MESSAGES            WEATHER&gt;</p> <p>&lt;SEND MESSAGE            ATS&gt;</p> <p>&lt;MESSAGE LOG            REPORTS&gt;</p> <p>&lt;TIMES/FUELS            SYSTEM&gt;</p> <p>&lt;STATUS            ATC LOGON&gt;</p> <p>&lt;FPL/WINDS</p> </div>
<p>15.2</p>	<p>Line select WEATHER to access the WEATHER MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            WEATHER MENU</p> <p>&lt;TERMINAL WX            METRO WX&gt;</p> <p>&lt;D-ATIS</p> <p>&lt;TWIP</p> <p>&lt;WINDS ALOFT</p> <p>&lt;SIGMETS</p> <p>&lt;MAIN MENU            WEATHER LOG&gt;</p> </div>

15.3	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC      METRO WX AIRPORT KBED AIRPORT ----- AIRPORT  GRD VHF DATALINK SEND*  &lt;RETURN</pre> </div>
------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

*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	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC      METRO WX AIRPORT KBED AIRPORT **** AIRPORT  GRD VHF 1117Z SENT SEND  &lt;RETURN METRO WX UPLINK</pre> </div>
------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

*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

<p>16.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            MAIN MENU</p> <p>&lt;NEW MESSAGES            WEATHER&gt;</p> <p>&lt;SEND MESSAGE            ATS&gt;</p> <p>&lt;MESSAGE LOG            REPORTS&gt;</p> <p>&lt;TIMES/FUELS            SYSTEM&gt;</p> <p>&lt;STATUS            ATC LOGON&gt;</p> <p>&lt;FPL/WINDS</p> </div>
<p>16.2</p>	<p>Line select WEATHER to access the WEATHER MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            WEATHER MENU</p> <p>&lt;TERMINAL WX            METRO WX&gt;</p> <p>&lt;D-ATIS</p> <p>&lt;TWIP</p> <p>&lt;WINDS ALOFT</p> <p>&lt;SIGMETS</p> <p>&lt;MAIN MENU            WEATHER LOG&gt;</p> </div>
<p><i>Note – D-ATIS and TWIP reports may also be accessed from the ATS LOG display.</i></p>	

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.

```
AOC      WEATHER LOG      1/1
1836Z                    DISPLAYED
  KBF1 TERM WX          >
1836Z                    DISPLAYED
  KBUR TERM WX          >
1834Z                    SENT
  TERMINAL WX           >

<WEATHER MENU      DEL LOG>
```

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.

```
AOC      KBUR TERM WX      1/3

METAR: 031753Z 26005KT
10SM FEW021 SCT026
SCT050 13/09 A2993=
TAF:    031720Z 031818
22008KT P6SM VCSH SCT025
BKN035 TEMPO 1821 -SHRA
BKN025 FM2100 25012KT
P6SM VCSH BKN035 BKN060
TEMPO 2123 -SHRA FM0100

                                READY
<RETURN                          PRINT*
```

## 17 AOC – Pre-Departure Clearances

<p>17.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            MAIN MENU</p> <p>&lt;NEW MESSAGES            WEATHER&gt;</p> <p>&lt;SEND MESSAGE            ATS&gt;</p> <p>&lt;MESSAGE LOG            REPORTS&gt;</p> <p>&lt;TIMES/FUELS            SYSTEM&gt;</p> <p>&lt;STATUS            ATC LOGON&gt;</p> <p>&lt;FPL/WINDS</p> </div>
<p>17.2</p>	<p>Line select ATS to access the ATS MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            ATS MENU</p> <p>&lt;D-ATIS            OCEANIC CLX&gt;</p> <p>&lt;PDC            NAT TRACKS&gt;</p> <p>&lt;TWIP</p> <p>&lt;MAIN MENU            ATS LOG&gt;</p> </div>

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.

```
AOC          PDC

DEPARTURE
AIRPORT      CALLSIGN
KSDF         -----

GRD VHF
DATALINK
SEND*

<RETURN
```

*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.

```
AOC          PDC

DEPARTURE
AIRPORT      CALLSIGN
KSDF         *****

GRD VHF
1054Z SENT
SEND

<RETURN
PDC UPLINK
```

*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 Clearance Delivery

*Note – With automatic position reports enabled and when not operating under a variable callsign, the GDC automatically uplinks an eastbound oceanic clearance to the aircraft as soon as it is received from Gander OACC. If automatic position reports are disabled, begin requesting the clearance approaching 70° West longitude, but if the clearance is not received by 25 minutes prior to entry into oceanic airspace, contact Gander ACC on the appropriate voice frequency.*

18.1 Access the MAIN MENU display.

```

AOC          MAIN MENU

<NEW MESSAGES          WEATHER>

<SEND MESSAGE          ATS>

<MESSAGE LOG          REPORTS>

<TIMES/FUELS          SYSTEM>

<STATUS          ATC LOGON>

<FPL/WINDS
  
```

18.2 Line select ATS to access the ATS MENU display.

```

AOC          ATS MENU

<D-ATIS          OCEANIC CLX>

<PDC          NAT TRACKS>

<TWIP

<MAIN MENU          ATS LOG>
  
```

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, the aircraft registration number or callsign (previously registered with the GDC for eastbound oceanic clearances) 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.

```

AOC      OCEANIC CLX
ENTRY POINT      REQ MACH
URTA      0.80
ENTRY TIME      REQ FL
0000z          FL450
CALLSIGN
GDC333
REMARKS
MAX F450

                                DATALINK
<RETURN      REQUEST*
```

18.4 When REQUEST is line selected, the display is 'frozen' for later review from the ATS LOG display. When the requested oceanic clearance is received, an OCEANIC CLX UPLINK scratchpad advisory displays.

```

AOC      OCEANIC CLX
ENTRY POINT      REQ MACH
URTA      0.80
ENTRY TIME      REQ FL
0000z          FL450
CALLSIGN
GDC333
REMARKS
MAX F450

                                2300Z SENT
<RETURN      REQUEST
OCEANIC CLX UPLINK
```

*Note – An oceanic clearance 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.*

## 19 AOC – Oceanic Clearance Route Authorisation

*Note – Request the clearance between 30 and 90 minutes prior to entry into the Shanwick OCA.*

*Note – Aircraft must not enter the Shanwick OCA without a clearance.*

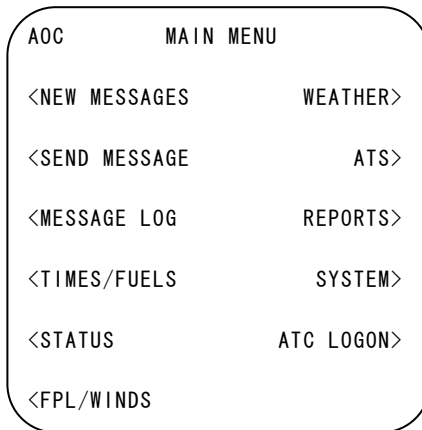
*Note – If at any time the flight crew is in doubt regarding the oceanic clearance transaction, Shanwick must be contacted by voice using the phrase "(AIRCRAFT REGISTRATION) ORCA CONTACT".*

*Note – 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".*

*Note – 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.*

*Note – All clearances and reclearances must be acknowledged.*

19.1 Access the MAIN MENU display.



19.2

Line select ATS to access the ATS MENU display.

```
AOC          ATS MENU

<D-ATIS          OCEANIC CLX>

<PDC              NAT TRACKS>

<TWIP

<MAIN MENU          ATS LOG>
```

19.3

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, GDC000 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.

```
AOC          OCEANIC CLX

ENTRY POINT          REQ MACH
MALOT                0.80
ENTRY TIME          REQ FL
0000z                FL450
CALLSIGN
GDC333
REMARKS
MAX F450

DATALINK
<RETURN            REQUEST*
```

*Note – Valid Shanwick OCA entry points are (north to south): ATSIX, BALIX, ERAKA, GOMUP, MIMKU, NIBOG, MASIT, KORIB, DOGAL, MALOT, LIMRI, DINIM, SOMAX, BEDRA, OMOKO, LASNO, ETIKI, SEPAL, SIVIR, BEGAS, DIXIS, BERUX, PITAX, and PASAS.*



*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).*

19.4 When REQUEST is line selected, the display is ‘frozen’ for later review from the ATS LOG display.

```

AOC      OCEANIC CLX
ENTRY POINT      REQ MACH
MALOT              0.80
ENTRY TIME        REQ FL
0000z             FL450
CALLSIGN
GDC333
REMARKS
MAX F450

                2300Z SENT
<RETURN        REQUEST
    
```

19.5 Shanwick 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.

```

AOC      ATC STAT MSG

FSM 2300 030815 EGGX
GDC333 RCL RECEIVED
IF NO CLEARANCE WITHIN
15 MINUTES - CONTACT
SHANWICK BY VOICE
END OF MESSAGE

                READY
<RETURN        PRINT*
ATC STATUS MESSAGE
    
```

*Note – Other possible responses from Shanwick to the clearance request include the following:*

*Pending clearance request response: "REQUEST BEING PROCESSED – AWAIT TRANSACTION COMPLETION".*

*Invalid clearance request response: "INVALID <entry point, Mach number, etc.> – RESUBMIT REQUEST".*

*Negotiate clearance response: "NEGOTIATION REQUIRED – CONTACT SHANWICK BY VOICE".*

*Flight plan not on file response: "FLIGHT PLAN NOT HELD – CONTACT SHANWICK BY VOICE".*

*Clearance request too early response: "RCL SENT TOO EARLY – REQUEST AGAIN LATER".*

*Clearance request too late response: "RCL RECEIVED TOO LATE – REVERT TO VOICE PROCEDURES".*

*Invalid registration response: "INVALID REGISTRATION – REVERT TO VOICE PROCEDURES".*

*Error in clearance request response: "ERROR IN MESSAGE – REVERT TO VOICE PROCEDURES".*

*Network congestion response: "NETWORK CONGESTION – REVERT TO VOICE PROCEDURES".*

*Service not available response: "ORCA SERVICE CURRENTLY NOT AVAILABLE – REVERT TO VOICE PROCEDURES".*

*Ground system error response: "GROUND SYSTEM ERROR – REVERT TO VOICE PROCEDURES".*

*No response: 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, Shanwick must be contacted by voice.*

19.6	<p>Shanwick 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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC      EGGX CLRNCE      1/2  CLX 2302 030815 EGGX CLRNCE 736 GDC333 CLRD TO KHPN VIA MALOT RANDOM ROUTE 54N020W 55N030W 54N040W 51N050W CYMON FM MALOT/1419 MNTN F450                                 DATALINK                                 ACKNOWLEDGE*                                 READY &lt;RETURN                                PRINT* OCEANIC CLEARANCE UPLINK </pre> </div>
<p><i>Note – The flight crew must check that the aircraft registration or callsign in the clearance is correct.</i></p>	
<p><i>Note – Random route clearances contain the full route coordinates and NAT Track route clearances contain the track identifier (e.g., ALPHA, BRAVO, etc.). Flight crews must check that the NAT Track route coordinates in the clearance match the coordinates in the current published NAT Track Message.</i></p>	
<p><i>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").</i></p>	
<p><i>Note – 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.</i></p>	
<p><i>Note – 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.</i></p>	

19.7

Promptly acknowledge the clearance via datalink by line selecting ACKNOWLEDGE.

AOC EGGX CLRNCE 1/2

CLX 2302 030815 EGGX

CLRNCE 736

GDC333 CLRD TO KHPN VIA

MALOT

RANDOM ROUTE

54N020W 55N030W

54N040W 51N050W CYMON

FM MALOT/1419 MNTN F450

SENT 1308Z

ACKNOWLEDGE

READY

PRINT\*

<RETURN

*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.*

19.8

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

```

AOC          ATC STAT MSG

FSM 2304 030815 EGGX
GDC333 CLA RECEIVED
CLEARANCE CONFIRMED
END OF MESSAGE

                                READY
<RETURN                                PRINT*
ATC STATUS MESSAGE

```

*Note – 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.*

*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 "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.*

## 20 AOC – NAT Tracks

20.1	<p>Access the MAIN MENU display.</p> <div data-bbox="276 191 707 625" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"><p>AOC            MAIN MENU</p><p>&lt;NEW MESSAGES            WEATHER&gt;</p><p>&lt;SEND MESSAGE            ATS&gt;</p><p>&lt;MESSAGE LOG            REPORTS&gt;</p><p>&lt;TIMES/FUELS            SYSTEM&gt;</p><p>&lt;STATUS            ATC LOGON&gt;</p><p>&lt;FPL/WINDS</p></div>
20.2	<p>Line select ATS to access the ATS MENU display.</p> <div data-bbox="276 706 707 1112" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"><p>AOC            ATS MENU</p><p>&lt;D-ATIS            OCEANIC CLX&gt;</p><p>&lt;PDC            NAT TRACKS&gt;</p><p>&lt;TWIP</p><p>&lt;MAIN MENU            ATS LOG&gt;</p></div>

<p>20.3</p>	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%;"> <pre> AOC          NAT TRACKS  TRACKS ↓WESTBOUND  GRD VHF DATALINK SEND*  &lt;RETURN                     </pre> </div>
<p>20.4</p>	<p>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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%;"> <pre> AOC          NAT TRACKS  TRACKS WESTBOUND  GRD VHF 0906Z SENT SEND  &lt;RETURN NAT TRACKS UPLINK                     </pre> </div>
<p><i>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.</i></p>	

## 21 AOC – ATS Log

21.1	Access the MAIN MENU display. <div data-bbox="277 191 706 623" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"><p>AOC            MAIN MENU</p><p>&lt;NEW MESSAGES            WEATHER&gt;</p><p>&lt;SEND MESSAGE                       ATS&gt;</p><p>&lt;MESSAGE LOG                       REPORTS&gt;</p><p>&lt;TIMES/FUELS                       SYSTEM&gt;</p><p>&lt;STATUS                       ATC LOGON&gt;</p><p>&lt;FPL/WINDS</p></div>
21.2	Line select ATS to access the ATS MENU display. <div data-bbox="277 708 706 1101" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"><p>AOC            ATS MENU</p><p>&lt;D-ATIS                       OCEANIC CLX&gt;</p><p>&lt;PDC                       NAT TRACKS&gt;</p><p>&lt;TWIP</p><p>&lt;MAIN MENU                       ATS LOG&gt;</p></div>
<p><i>Note – D-ATIS and TWIP reports may also be accessed from the WEATHER LOG display.</i></p>	



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.

```
AOC          MAIN MENU

<NEW MESSAGES          WEATHER>

<SEND MESSAGE          ATS>

<MESSAGE LOG          REPORTS>

<TIMES/FUELS          SYSTEM>

<STATUS          ATC LOGON>

<FPL/WINDS
```

22.2

Line select REPORTS to access the REPORTS display.

```
AOC          REPORTS

<FLIGHT RPT          FMS RPTS>

AUTO OFF/ON RPTS
↓ENABLED

          AUTO POSITION RPTS
GRD VHF          SAT UHF
↓15 MIN          DISABLED↓

<MAIN MENU          REPORTS LOG>
```

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.

AOC	FLIGHT REPORT	1/2
REGISTRATION	TIME	
N12345		1242Z
DEP APT	ARR APT	
KMSY		KLAS
ATD		ETA
1224Z		1533Z
ADDRESS	FUEL	
OPS		13. 7
	GRD VHF	
	DATALINK	
<RETURN		SEND*

*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	<i>e-mail code (example)</i>
N12345	<i>aircraft subscribing to GDC services</i>
425-885-8788	<i>telephone number</i>
F4258858930	<i>facsimile number ("F" prefix)</i>
AHDQGLXH	<i>ACARS network address ("A" prefix)</i>
NKSNAXGSX	<i>AFTN address ("N" prefix)</i>
JEPP	<i>Jeppesen</i>
UVAIR	<i>Universal Weather &amp; Aviation</i>
ARI	<i>Air Routing International</i>
BASEOPS	<i>Base Ops International</i>

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.

```
AOC      FLIGHT REPORT    2/2
CREW                                PAX
3                                             5
REMARKS
PLEASE BRING CAR TO

AIRCRAFT

-----

                                GRD VHF
                                DATALINK
<RETURN                            SEND*
```

## 23 AOC – Automatic Reports

<p>23.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            MAIN MENU</p> <p>&lt;NEW MESSAGES            WEATHER&gt;</p> <p>&lt;SEND MESSAGE            ATS&gt;</p> <p>&lt;MESSAGE LOG            REPORTS&gt;</p> <p>&lt;TIMES/FUELS            SYSTEM&gt;</p> <p>&lt;STATUS            ATC LOGON&gt;</p> <p>&lt;FPL/WINDS</p> </div>
<p>23.2</p>	<p>Line select REPORTS to access the REPORTS display. Line select AUTO OFF/ON 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.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            REPORTS</p> <p>&lt;FLIGHT RPT            FMS RPTS&gt;</p> <p> </p> <p>AUTO OFF/ON RPTS</p> <p>↓ENABLED</p> <p> </p> <p>AUTO POSITION RPTS</p> <p>GRD VHF            SAT UHF</p> <p>↓15 MIN            DISABLED↓</p> <p>&lt;MAIN MENU            REPORTS LOG&gt;</p> </div>

*Note – The GDC recommends selecting 15 MIN for automatic position reports to ensure positive communications with the GDC.*

*Note – The AUTO OFF/ON 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

<p>24.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            MAIN MENU</p> <p>&lt;NEW MESSAGES            WEATHER&gt;</p> <p>&lt;SEND MESSAGE            ATS&gt;</p> <p>&lt;MESSAGE LOG            REPORTS&gt;</p> <p>&lt;TIMES/FUELS            SYSTEM&gt;</p> <p>&lt;STATUS            ATC LOGON&gt;</p> <p>&lt;FPL/WINDS</p> </div>
<p>24.2</p>	<p>Line select REPORTS to access the REPORTS display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            REPORTS</p> <p>&lt;FLIGHT RPT            FMS RPTS&gt;</p> <p> </p> <p>AUTO OFF/ON RPTS ↓ENABLED</p> <p> </p> <p>AUTO POSITION RPTS GRD VHF            SAT UHF ↓15 MIN            DISABLED↓</p> <p>&lt;MAIN MENU            REPORTS LOG&gt;</p> </div>

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.

```
AOC      REPORTS LOG      1/1
1910Z                               SENT
  FLIGHT REPORT              >
1903Z                               SENT
  POSITION REPORT             >
1848Z                               SENT
  POSITION REPORT             >
1841Z                               SENT
  OFF REPORT                 >

<REPORTS              DELETE LOG>
```

24.4

With a report displayed, line select PRINT to print the report.

```
AOC      OFF REPORT
DEP APT          ARR APT
PHNL            KFTY
OFF TIME        ETA
1611Z           2359Z
OFF FUEL
28.8

                READY
<RETURN        PRINT*
```



## 25 System – Datalink Manager

<p>25.1</p>	<p>Access the MAIN MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            MAIN MENU</p> <p>&lt;NEW MESSAGES            WEATHER&gt;</p> <p>&lt;SEND MESSAGE            ATS&gt;</p> <p>&lt;MESSAGE LOG            REPORTS&gt;</p> <p>&lt;TIMES/FUELS            SYSTEM&gt;</p> <p>&lt;STATUS            ATC LOGON&gt;</p> <p>&lt;FPL/WINDS</p> </div>
<p>25.2</p>	<p>Line select SYSTEM to access the SYSTEM MENU display.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <p>AOC            SYSTEM MENU</p> <p>&lt;DATALINK MGR            NEW MSGS&gt;</p> <p>&lt;TIME/DATE            ATS LOG&gt;</p> <p>                                 MAINTENANCE&gt;</p> <p>&lt;MAIN MENU            ATS MENU&gt;</p> </div>

<p>25.3</p>	<p>Line select DATALINK MANAGER to access the DATALINK MANAGER display. The VHF RADIO MODE should normally be DATA. Line select VHF TEST and/or SATCOM TEST to independently test each transmission mode. Line select MSG RESET and then CONFIRM to clear all display logs and reset all data to default values.</p> <div data-bbox="277 326 706 743" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC   DATALINK MANAGER       VHF RADIO MODE       DATA        VHF FREQ SEL&gt;  AVAILABLE *VHF TEST           MSG RESET* AVAILABLE *SATCOM TEST  &lt;SYS MENU           DATA REGIONS&gt; </pre> </div>
<p>25.4</p>	<p>Line select VHF FREQ SEL to access the VHF FREQ SEL 1/1 display. The selected VHF frequency is shown with &lt;SEL&gt; symbology. Line select RETURN to access the DATALINK MANAGER display.</p> <div data-bbox="277 932 706 1325" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> CMU   VHF FREQ SEL  1/1       S AMERICA *131.72&lt;SEL&gt;  *131.55  &lt;RETURN           DATA REGIONS&gt; </pre> </div>

<p>25.5</p>	<p>Line select DATA REGIONS to access the DATA REGIONS 1/2 display. The selected data region is shown with &lt;*&gt; symbology. The N AM VHF, S AM VHF, EU/AF VHF, and AS/AU VHF data regions may be manually selected to restrict the CMF to transmissions over the ground-based VHF network only within the corresponding region. The WORLD SAT data region may be manually selected to restrict the CMF to transmissions over the satellite-based UHF network only.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC      DATA REGIONS    1/2  *N AMERICA      N AM VHF*  *S AMERICA&lt;*&gt;   S AM VHF*  *EUR/AFR        EU/AF VHF*  *ASIA/AUS       AS/AU VHF*  *WORLD SAT  &lt;RETURN                     </pre> </div>
<p>25.6</p>	<p>Press the NEXT function key to access the DATA REGIONS 2/2 display. The NO COMM data region may be manually selected to disable all datalink transmissions.</p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: fit-content;"> <pre> AOC      DATA REGIONS    2/2  *NO COMM&lt;*&gt;  *OTHER  *DEFAULT                                  RETURN TO                                 AUTO*  &lt;RETURN                     </pre> </div>

*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

- 26.1 Worldwide graphical weather can be displayed by using the Uplink Wx interface. 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*

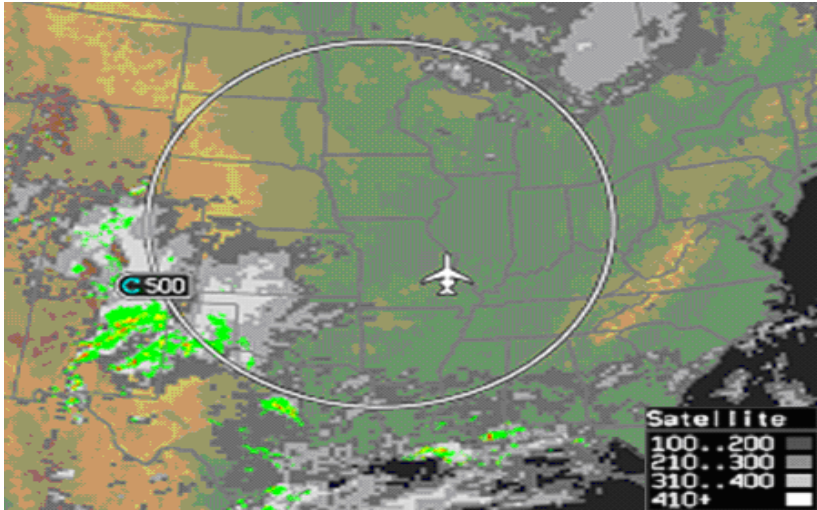
*FL340 - FL380*

*FL390 - FL440*

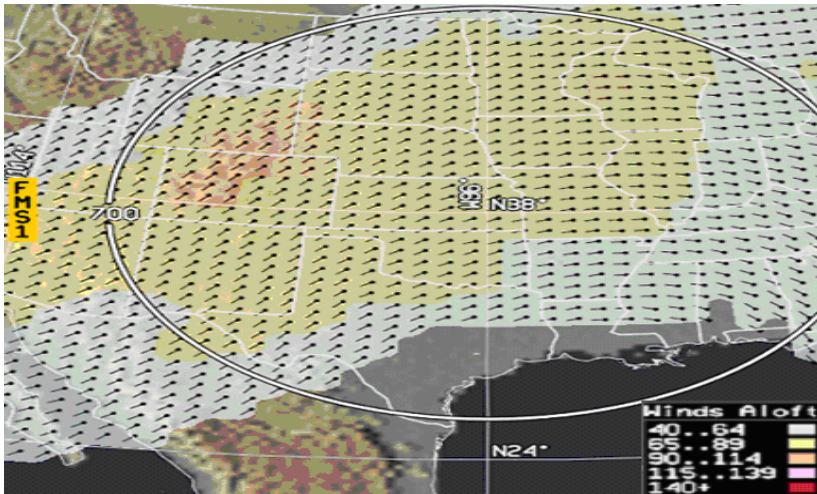
*FL470 - FL500*

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



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# Appendix A – Air Traffic Services Airports

## United States

<b>AIRPORT</b>	<b>CITY, STATE</b>	<b>PDC</b>	<b>D-ATIS</b>	<b>TWIP</b>
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			✓
KIAD	Washington (Dulles), DC	✓	✓	✓
KIAH	Houston (Intercont'l), TX	✓	✓	✓
KICT	Wichita, KS			✓
KIND	Indianapolis, IN	✓	✓	✓
KJFK	New York (JFK), 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	✓	✓	✓
KMIA	Miami, FL	✓	✓	✓
KMKE	Milwaukee, WI	✓	✓	✓



## United States

<b>AIRPORT</b>	<b>CITY, STATE</b>	<b>PDC</b>	<b>D-ATIS</b>	<b>TWIP</b>
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	√	√	√
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

<b>AIRPORT</b>	<b>CITY</b>	<b>PDC</b>	<b>D-ATIS</b>	<b>TWIP</b>
CYEG	Edmonton		√	
CYHM	Hamilton		√	
CYHZ	Halifax		√	
CYLW	Kelowna		√	
CYMX	Mirabel		√	
CYOW	Ottawa		√	
CYQB	Quebec City		√	
CYOM	Moncton		√	
CYQR	Regina		√	
CYQT	Thunder Bay		√	
CYQX	Gander		√	

## Canada

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

## Europe

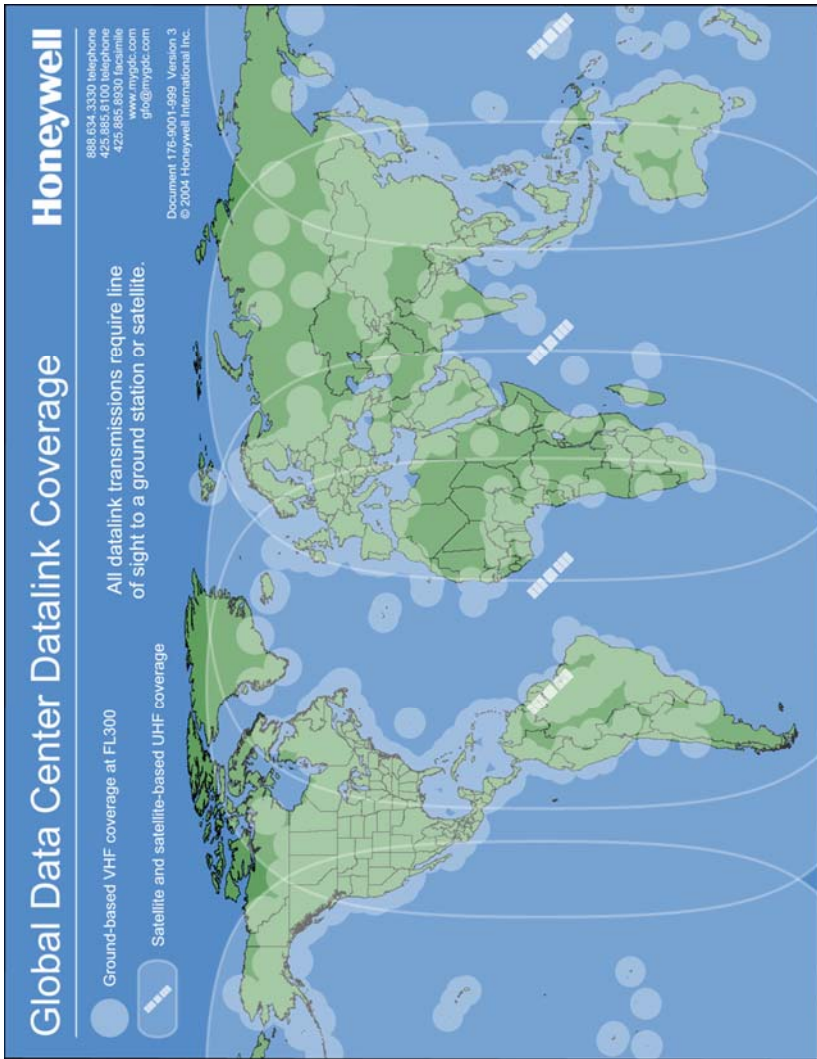
AIRPORT	CITY	PDC	D-ATIS	TWIP
<b>GERMANY</b>				
EDDB	Berlin – Schonefeld		√	
EDDF	Frankfurt		√	
EDDG	Munster		√	
EDDH	Hamburg		√	
EDDI	Berlin – Tempelhof		√	
EDDK	Cologne		√	
EDDL	Dusseldorf		√	
EDDM	Munich		√	
EDDN	Nuremberg		√	
EDDP	Leipzig		√	
EDDS	Stuttgart		√	
EDDT	Berlin – Tegel		√	
EDDV	Hannover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

## Asia / Pacific

AIRPORT	CITY	PDC	D-ATIS	TWIP
<b>CHINA</b>				
VHHH	Hong Kong		√	
<b>NEW ZEALAND</b>				
NZAA	Auckland		√	
NZCH	Christchurch		√	
NZWN	Wellington		√	
<b>SINGAPORE</b>				
WSSS	Singapore		√	
<b>THAILAND</b>				
VTBD	Bangkok		√	
VTCC	Chiang Mai		√	
VTSS	Hat Yai		√	
VTSP	Phuket		√	

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# Appendix B – Datalink Coverage Map



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