Twenty First Meeting of the
Informal South Pacific ATS Co-ordinating Group (ISPACG/21)

Auckland, New Zealand, 6-8 March 2007

Agenda Item xx:

IMPLEMENTING DARP – A GUIDE FOR PILOTS, AIRCRAFT OPERATING COMPANIES AND AIR TRAFFIC SERVICES UNITS

Presented by Airways New Zealand

SUMMARY

This paper describes the process to follow when an airborne aircraft requests DARP or diversion. It is guidance material and its adoption will allow pilots, AOCs and ATSUs to follow a set procedure using correct message sets.

1. INTRODUCTION

1.1 A guide for pilots, Aircraft Operating Companies and ATSUs wishing to implement DARP and airborne diversion procedures.

2. DISCUSSION

2.1 The availability of new weather forecasts on long haul routes may require airlines to request revised routing for airborne aircraft which will result in significant time and fuel savings.

2.2 The automated ATSU systems can transmit the revised route data to each other electronically without requiring flight plan change notification from the AOCs.

2.3 Uniform application of recommended practices is by pilots, AOCs and ATSUs is desirable.

3. ACTION BY THE MEETING

3.1 The meeting is invited to review, adopt and promulgate the procedures.

DARP PROCEDURES

Purpose

To reroute an airborne aircraft after receipt of a new weather forecast, where the revised routing will result in significant time and fuel savings for the airline.

Objective

- This guidance is intended to assist pilots and Aircraft Operating Companies when implementing DARP procedures.
- These procedures shall be used between FIRs that are AIDC capable i.e. ground ATSUs can transmit the revised route data to each other electronically.
- Presently, the following ATSUs are AIDC capable;
  Auckland, Brisbane, Nadi and Oakland.
- The following operational requirements apply for airborne rerouting:

  1. The re-route request must be made at least 20min before the divergence point, to allow processing time.
  2. The re-route request must not be made within 60min of the common FIR boundary to allow AIDC messaging to take place between the affected ATSUs.
  3. The re-route request may be made to the new Data Authority, immediately after crossing the common FIR boundary.
  4. Operational CPDLC is required for aircraft requesting airborne re-routes.

DARP PROCEDURES *(Continued)*

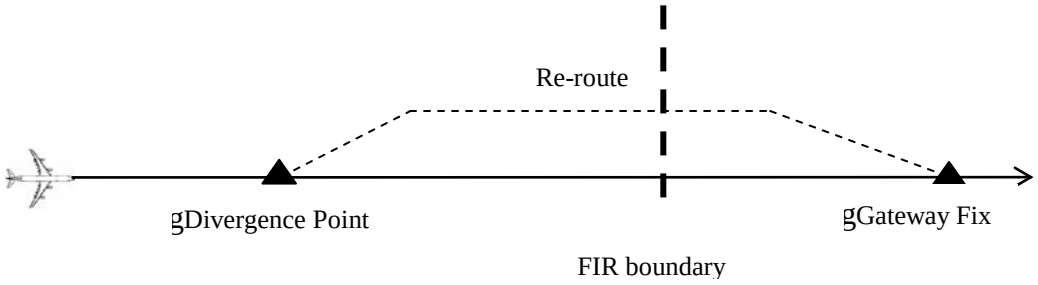
STEP 1

Aircraft Operating Company (AOC)

✈ AOC generates re-route that includes waypoints at the FIR boundary and joins the original route at the gateway fix.

✈ The re-route shall begin from a waypoint on the current route ahead of the aircraft and ending at the destination.
When selecting the waypoint from which the reroute would begin, consideration should be given to:
- *The time it takes AOC to uplink the reroute to the pilot,*
- *The pilot to load it into FMC and make a request to ATSU.*
- *ATSU to process the request and uplink the clearance.*
- *The pilot to load the clearance into the flight management computer.*

Waypoints selected immediately ahead of the aircraft may result in aircraft crossing the waypoint prior to receiving a reroute clearance.



✈ Uplink the **Inactive** route (re-route) to the aircraft.

NOTE: AOCs shall not send CHG message to ATSUs.

STEP 2

Flight Crew

✈ Load the re-route into the "Inactive Route" of the FMC.

✈ Downlink the unedited route request to the ATSU that has jurisdiction of the flight using the CPDLC downlink re-route request message #24:

REQUEST [departure airport: xxx destination airport: xxxx (fix1)(fix2)(fix3)…..]
Where (fix1) is the waypoint ahead of the aircraft on the current route.

NOTE: Pilots may delete the waypoints on the revised route that may have been crossed.

DARP PROCEDURES *(Continued)*

STEP 3

ATSU

- ✈ Check for conflicts and coordinate with adjacent ATSUs as required.
- ✈ Where there is no conflict:
  - Uplink route clearance #83 with the departure airport deleted:

    AT [fix 1] CLEARED [destination airport: xxxx (fix1)(fix2)(fix3)….]
    Where (fix1) is the waypoint ahead of the aircraft on the current route.

  - Transmit the aircraft's new cleared route data to the next ATSU via AIDC.
    NOTE: AIDC Letters of Agreement between ATSUs must permit the processing and transmission of route information and any subsequent changes to the route.
- ✈ Where there is conflict at the current flight level:
  - Uplink "UNABLE. DUE TO TRAFFIC"

STEP 4

Flight Crew

- ✈ Activate the amended route clearance into the flight management computer.
- ✈ Send a downlink notifying AOC of the above action.

DIVERSION PROCEDURES – EMERGENCY

Objective

These diversion procedures are intended to provide guidance when an aircraft in an emergency has turned towards a new destination and advises intention to ATSU subsequent to the event.

The procedures are applicable to both data link and HF aircraft.

Flight Crew

- ✈ If unable to obtain a revised ATC clearance, the aircraft should use the in-flight contingency procedures to turn towards an aerodrome of suitable landing.
- ✈ Advise ATSU of the flight level, aircraft position and intention as soon as practicable.
- ✈ Obtain an ATC clearance at the earliest possible time.

ATSU

- ✈ Provide essential traffic information where required.
- ✈ Issue revised clearance to the aircraft.
- ✈ Coordinate with applicable ATSU as required.

DIVERSION PROCEDURES – NON EMERGENCY

Objective

These diversion procedures are intended to provide guidance when an aircraft requires diversion to a new destination.

Where possible, the re-route request must be made at least 20min before the divergence point, to allow processing time.

The re-route request must not be made within 60min of the common FIR boundary to allow AIDC messaging to take place between the affected ATSUs.

Flight Crew

DATA LINK AIRCRAFT

The pilot should downlink the reroute request to the ATSU that has jurisdiction of the flight using the following messages;

- Reroute request from a **waypoint** on the current route;

  ✈ Use CPDLC downlink re-route request message #24:

  REQUEST [departure airport: xxx destination airport: xxxx (fix1)(fix2)(fix3)…..]
  Where (fix1) is the waypoint ahead of the aircraft on the current route.

- Reroute request at the earliest possible **time**;

  ✈ Use CPDLC downlink re-route request message #24:

  REQUEST [departure airport: xxx destination airport: xxxx (fixes on the new route)]

  NOTE: ATSU reroute clearance up linked to the aircraft may specify a time to execute the diversion.

- Reroute request **direct** to a new destination.

  ✈ Use CPDLC downlink re-route request message #24:

  REQUEST [departure airport: xxx destination airport: xxxx (destination fix)]
  A free text "Direct" may be added to emphasise that the request is for direct routing.

DIVERSION PROCEDURES – NON EMERGENCY *(Continued)*

Flight Crew

HF AIRCRAFT

The pilot should make a request to the ATSU that has jurisdiction of the flight using the following messages;

- Reroute request from a **waypoint** on the current route;

  AT (fix1) REQUEST DIVERT TO [destination airport]
  via (fix1)(fix2)(fix3)….]
  Where (fix1) is the waypoint ahead of the aircraft on the current route.

- Reroute request at the earliest possible **time**;

  REQUEST DIVERT TO [destination airport] VIA
  (fixes on the new route)]

  NOTE: ATSU reroute clearance to the aircraft may specify a time to execute the diversion.

- Reroute request **direct** to a new destination.

  REQUEST DIVERT TO [destination airport] DIRECT.

Offset

- ✈ Requests for offset shall not be made by the pilots.
  Where offset is required, pilots shall make either a re-route or deviation request.
  Note: Most Offset requests down linked to ATSU are due to pilots not selecting the reason "due to weather". ATSU will deny this request and issue a weather deviation clearance to the same limit.

- ✈ Procedures for pilots who apply strategic lateral offset to reduce the perceived increase in risk of collision are located in state AIPs.

- ✈ ATSU may request an aircraft to offset to facilitate an aircraft's climb or descent. Aircraft will be cleared back on original route when the required separation is achieved.
