

# OCEANIC Safety Forum



New York Air Route Traffic Control Center



Federal Aviation  
Administration

**ZNY QC Department  
New York ARTCC  
Ronkonkoma, NY**

# ZNY QUALITY CONTROL OFFICE

- WEATHER DEVIATIONS
  - ICAO 4444 PROCEDURES
  - BACK ON ROUTE
  - RE-ESTIMATING
- CONDITIONAL CLEARANCES
  - PILOT MISUNDERSTANDING
  - FAILURE TO READ ENTIRE CLEARANCE
- ROUTING ISSUES
  - MULTIPLE FILINGS
  - FLYING ORIGINAL FP ROUTE RATHER THAN CLEARED

## WEATHER DEVIATION PROCEDURES

### 15.2.3.1 GENERAL

Note.— The following procedures are intended for deviations around adverse meteorological conditions.

15.2.3.1.1 When the pilot initiates communications with ATC, a rapid response may be obtained by stating “WEATHER DEVIATION REQUIRED” to indicate that priority is desired on the frequency and for ATC response. When necessary, the pilot should initiate the communications using the urgency call “PAN PAN” (preferably spoken three times).

15.2.3.1.2 The pilot shall inform ATC when weather deviation is no longer required, or when a weather deviation has been completed and the aircraft has returned to its cleared route.

## 15.2.3.2 ACTIONS TO BE TAKEN WHEN CONTROLLER-PILOT COMMUNICATIONS ARE ESTABLISHED

15.2.3.2.1 The pilot should notify ATC and request clearance to deviate from track, advising, when possible, the extent of the deviation expected.

15.2.3.2.2 ATC should take one of the following actions:

- a) when appropriate separation can be applied, issue clearance to deviate from track; or
- b) if there is conflicting traffic and ATC is unable to establish appropriate separation, ATC shall:
  - 1) advise the pilot of inability to issue clearance for the requested deviation;
  - 2) advise the pilot of conflicting traffic; and
  - 3) request the pilot's intentions.

15.2.3.2.3 The pilot should take the following actions:

a) comply with the ATC clearance issued; or

b) advise ATC of intentions and execute the procedures detailed in 15.2.3.3.

## ICAO 4444 SECTION 15.2.3.3 (NAT DOC 007 13.4)

### ACTIONS TO BE TAKEN IF A REVISED ATC CLEARANCE CANNOT BE OBTAINED

**Note.**— The provisions of this section apply to situations where a pilot needs to exercise the authority of a pilot-in-command under the provisions of Annex 2, 2.3.1.

If the aircraft is required to deviate from track to avoid adverse meteorological conditions and prior clearance cannot be obtained, an ATC clearance shall be obtained at the earliest possible time. Until an ATC clearance is received, the pilot shall take the following actions:

- a) if possible, deviate away from an organized track or route system;

b) establish communications with and alert nearby aircraft by broadcasting, at suitable intervals: aircraft identification, flight level, position (including ATS route designator or the track code) and intentions, on the frequency in use and on 121.5 MHz (or, as a backup, on the inter-pilot air-to-air frequency 123.45 MHz);

c) watch for conflicting traffic both visually and by reference to ACAS (if equipped);

**Note.**— If, as a result of actions taken under the provisions of 15.2.3.3.1 b) and c), the pilot determines that there is another aircraft at or near the same flight level with which a conflict may occur, then the pilot is expected to adjust the path of the aircraft, as necessary, to avoid conflict.

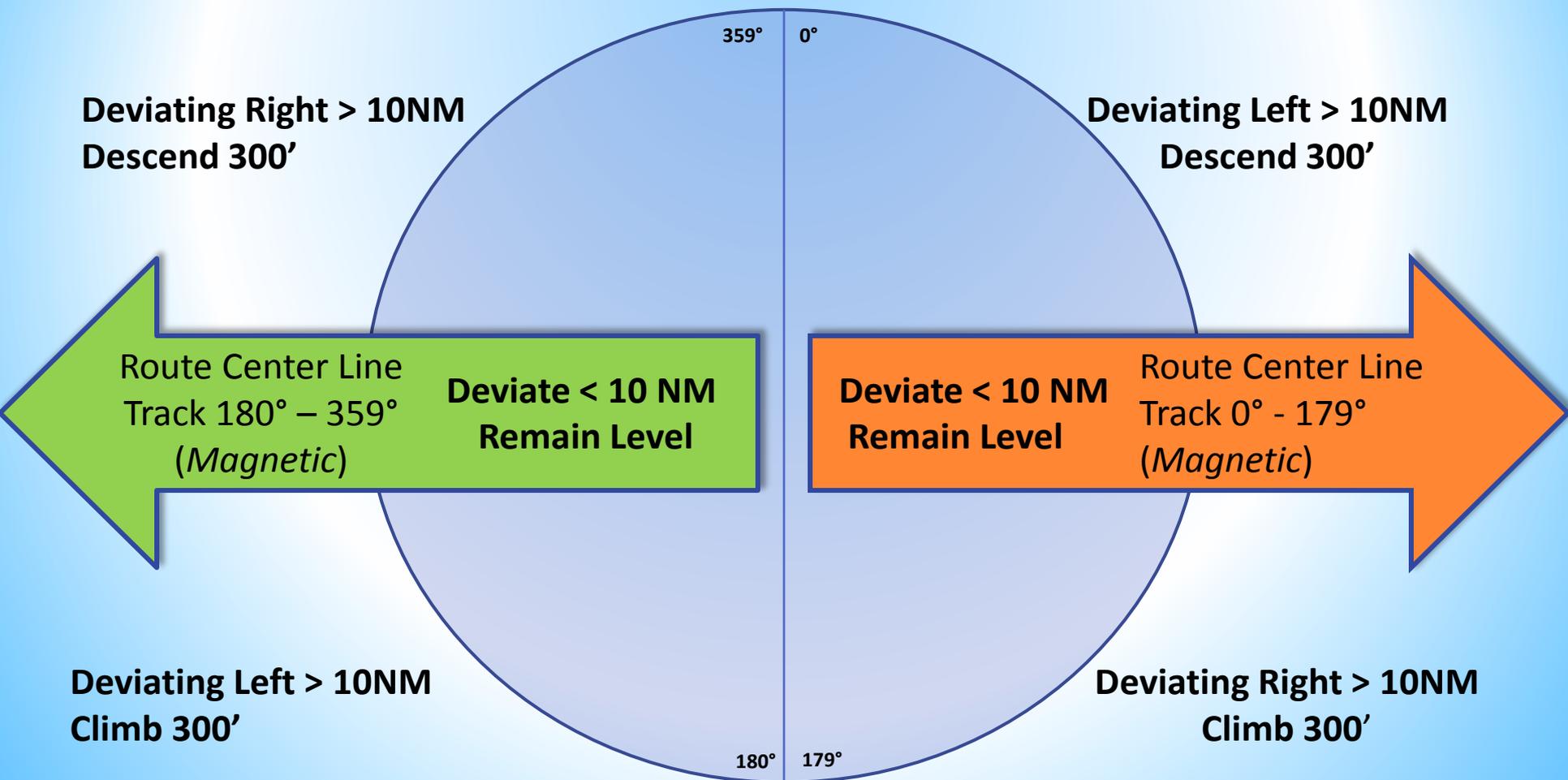
d) turn on all aircraft exterior lights (commensurate with appropriate operating limitations);

- e) for deviations of less than 19 km (10 NM) remain at a level assigned by ATC;
- f) for deviations greater than 19 km (10 NM), when the aircraft is approximately 19 km (10 NM) from track, initiate a level change in accordance with Table 15-1;
- g) when returning to track, be at its assigned flight level when the aircraft is within approximately 19 km (10 NM) of the centre line; and
- h) if contact was not established prior to deviating, continue to attempt to contact ATC to obtain a clearance. If contact was established, continue to keep ATC advised of intentions and obtain essential traffic information.

Route centre line track	Deviations > 19 km (10 NM)	Level change
EAST 000° - 179° magnetic	LEFT  RIGHT	DESCEND 90 m (300 ft)  CLIMB 90 m (300 ft)
WEST 180° - 359° magnetic	LEFT  RIGHT	CLIMB 90 m (300 ft)  DESCEND 90 m (300 ft)

# WEATHER DEVIATION CONTINGENCY PROCEDURE

## NO ATC CLEARANCE



## WHAT ACTION DOES ATC TAKE?

WHEN A DEVIATION REQUEST IS RECEIVED ATC WILL “PROBE” THE REQUEST AND IF NO CONFLICT IS SHOWN THE REQUEST SHOULD BE APPROVED.

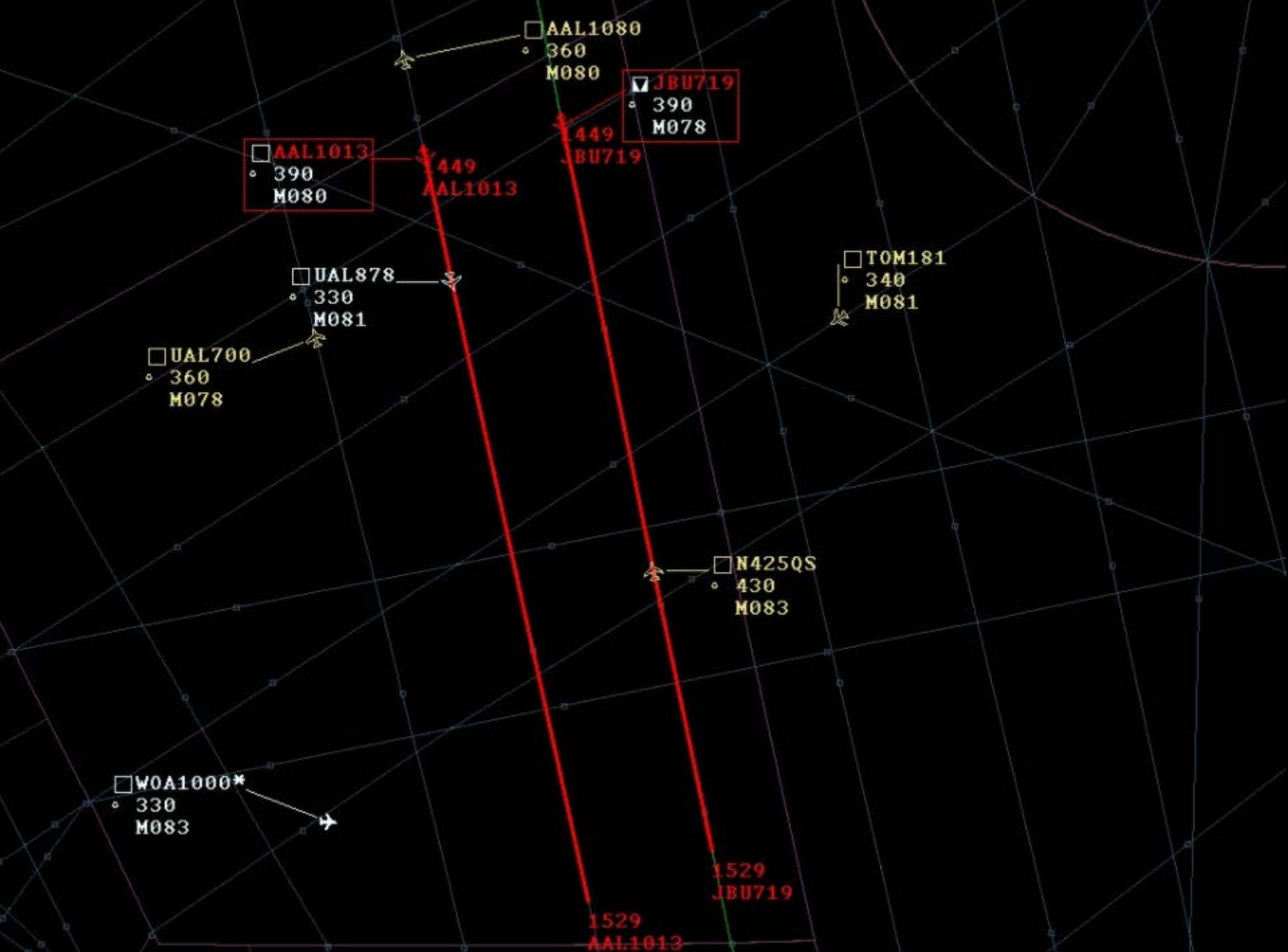
IF ATC “PROBES” THE REQUEST AND A CONFLICT IS DETECTED THERE MAY BE OPTIONS AND AN ALTERNATE CLEARANCE MAY BE GIVEN SUCH AS:

- DIFFERENT DIRECTION FOR THE DEVIATION
- DIFFERENT LATERAL DIMENSION FOR THE DEVIATION
- DIFFERENT ALTITUDE FOR THE DEVIATION

# ALTERNATE **DIRECTION** FOR DEVIATION

SECTOR QUEUE			
EM	TXT	JBU719	14:21:43
NM	REQ	UAL700	14:12:22
NM	REQ	N342QS	14:13:35
<b>NM</b>	<b>REQ</b>	<b>JBU719</b>	<b>14:16:22</b>
NM	SYS	IBE6413	14:18:14
NM	REQ	N425QS	14:21:35

REQ DEV 30 WEST OF COURSE DUE WX



### CONFLICT REPORT

same direction

REQUIRED 10 minutes ( 80 nm) 1000 ft

1.1 degrees LOS

**NOW**

ACTUAL

1 min 07 sec ( 53 nm) 0 ft

#### PASSING POINT

#### CONFLICT SEGM

R320					2818N	2515N
*JBU719	F390				06948W	06909W
H078					1424	1448
B763					2758N	25N
AAL1013	F390				07045W	07003W
H080					1424	1448

Draw

Close

# ALTERNATE **DIRECTION** FOR DEVIATION

CLEARANCE

**JBU719**    ROLLE 0439/ ATUGI 0453/ GRAMN 0534/ LUCTI 0616/ ELMUC 0650

Urgent	Rpt	Negot	Rspn	Misc	Vert	Route	Speed	X-ing	Conn	Pre-Fnt							
OAC		Climb 	 Time	 Fix	 Time	 Fix	DSCND 	 Time	 Fix	 Time	 Fix	EO	RTE	SPD	POS	OTA	HOLD

(0) UNABLE INS

(166) DUE TO TRAFFIC DEL

(169) (free text)

I

PRB	CAN	TPRB	SND	UNREL	VHF	SAVE	EALT	DVRD	COORD	RCPT	REJ	HLP	CLS
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PILOT ADVISES THEY INTEND TO DEVIATE AS REQUESTED. ATC WOULD ISSUE TRAFFIC ADVISORIES.

The image shows a software window titled "SECTOR QUEUE". At the top, there is a header bar with the following text: "NM", "TXT", "JBU719", and "04:44:03". Below this header is a large, empty rectangular area. At the bottom of the window, there is a section titled "ARINC R0 TEI(s) Requiring Manual Processing:" followed by the text: "FREE TEXT: WE ARE UNABLE TO DEVIATE EAST OF COURSE. WE WILL DEVIATE 25NM WEST UNDER AUTHORITY OF PILOT IN COMMAND AND WILL FOLLOW ICAO DEVIATION PROCEDURES". At the very bottom of the window, there are five buttons: "Process", "Route", "Print", "Delete", and "Close".

NM	TXT	JBU719	04:44:03
ARINC R0 TEI(s) Requiring Manual Processing:			
FREE TEXT: WE ARE UNABLE TO DEVIATE EAST OF COURSE. WE WILL DEVIATE 25NM WEST UNDER AUTHORITY OF PILOT IN COMMAND AND WILL FOLLOW ICAO DEVIATION PROCEDURES			

Process      Route      Print      Delete      Close

# ALTERNATE LATERAL **DISTANCE** FOR DEVIATION - HF FLIGHT

Flight requested 35NM right, maximum ATC can approve is 20NM. ATC procedure allows the UNABLE and the alternate clearance to be issued together for HF aircraft.

**CLEARANCE**

**SMG223** LENNT 1017/ KINCH 1020/ TASNI 1135/ SAVIK 1230

Urgent	Rpt	Negot	Rspn	Misc	Vert	Route	Speed	X-ing	Conn	Pre-Fnt							
DAC		Climb	Time	Fix	Time	Fix	DSCND	Time	Fix	Time	Fix	EO	RTE	SPD	POS	OTA	HOLD

(169) (free text) atca unable requested deviation INS

(82) CLEARED TO DEVIATE UP TO (dir)  (dist)  OF ROUTE DEL

(69) REJOIN ROUTE BY (time)

(127) REPORT BACK ON ROUTE

Probing : ATCA UNABLE REQUESTED DEVIATION, CLEARED TO DEVIATE UP TO R 20 NM OF ROUTE, REJOIN ROUTE BY 1240, REPORT BACK ON ROUTE  
[SMG223]: No procedural conflict found for flight plan

PRB CAN TPRB SND UNABL VHF SAVE EALT OVRD COORD RCPT REJ HLP CLS

# ALTERNATE LATERAL **DISTANCE** FOR DEVIATION - CPDLC FLIGHT

ATC procedure does not allow the UNABLE and alternate clearance to be issued in the same message for CPDLC aircraft. The UNABLE must be uplinked first thus closing the downlink and the alternate clearance sent in a separate second uplink.

CLEARANCE

**DLH463** LOUIZ 0953/ SUMRS 0957/ BEXUM 1054/ LUNKR 1121/ SOORY 1206/ 44N050W 1319/ 47N040W 1419

Urgent	Rpt	Negot	Rspn	Misc	Vert	Route	Speed	X-ing	Conn	Pre-Fnt							
DAC		Climb	@Time	@Fix	↳Time	↳Fix	DSCND	@Time	@Fix	↳Time	↳Fix	EO	RTE	SPD	POS	OTA	HOLD
82 CLEARED TO DEVIATE UP TO (dir) <input type="text" value="L"/> (dist) <input type="text" value="N45"/> OF ROUTE <input type="text" value="EOS"/>																	
127 REPORT BACK ON ROUTE <input type="text" value="EOS"/>																	
(0) UNABLE																	<input type="button" value="INS"/>
(166) DUE TO TRAFFIC																	<input type="button" value="DEL"/>

FPCL-S-CANCEL\_SUCCESS : Cancel Probe was successful.



COCKPIT RECEIPT OF AN “**UNABLE**” COMBINED WITH A REQUEST TO SAY WHEN ABLE HIGHER ALTITUDE IS AN INDICATION THAT ATC WILL ATTEMPT TO SEPARATE TRAFFIC VERTICALLY AND THEN APPROVE THE DEVIATION REQUEST.

PROMPT PILOT RESPONSE TO THIS TYPE OF INQUIRY WILL RESULT IN A QUICKER ISSUANCE OF THE DEVIATION CLEARANCE.

# CLEARANCE FOR ALTERNATE ALTITUDE AND DEVIATION

– same for HF and CPDLC

CLEARANCE

**JBU1765** ZZTOP 1105/ GALVN 1136/ LNHOM 1218/ JORGG 1231

Urgent	Rpt	Negot	Rspn	Misc	Vert	Route	Speed	X-ing	Conn	Pre-Fnt							
OAC		climb	time	fix	time	fix	DSCMD	time	fix	time	fix	E	RTE	SPD	POS	DTA	HOLD

(20) CLIMB TO AND MAINTAIN (alt)  INS

(169) (free text)  DEL

(82) CLEARED TO DEVIATE UP TO (dir)  (dist)  OF ROUTE

(69) REJOIN ROUTE BY (time)

(127) REPORT BACK ON ROUTE

Probing : CLIMB TO AND MAINTAIN F400, UPON REACHING F400, CLEARED TO DEVIATE UP TO L 15 NM OF ROUTE,  
REJOIN ROUTE BY 1159, REPORT BACK ON ROUTE  
[JBU1765]: Conflict with 1 aircraft, 0 airspace. IMMINENT

PRB CAN TPRB SND UNROL VHF SAVE EALT OVRD COORD RCPT REJ HLP CLS

**IF AN ALTERNATE CLEARANCE IS NOT AVAILABLE (NO OPTIONS) THEN ATC WILL RESPOND WITH THE FOLLOWING MESSAGE, AS ATC CANNOT ISSUE A CLEARANCE THAT DOES NOT PROVIDE IFR SEPARATION.**

**“UNABLE DUE TO TRAFFIC”**

**ISSUE TRAFFIC ADVISORIES**

**ASK FOR PILOT’S INTENTIONS**

**THIS DOES NOT PRECLUDE THE PILOT FROM EXERCISING PILOT-IN-COMMAND AUTHORITY AND FOLLOWING THE PROPER WEATHER DEVIATION PROCEDURES.**

# UNABLE TO ISSUE CLEARANCE; NO OPTIONS AVAILABLE

AIRCRAFT MESSAGES				
NM	COR	JBU655	04:45:16	KEYBD
NM	CTA	JBU655	04:45:16	KEYBD
NM	FP	JBU655	04:45:16	
NM	AGM	JBU655	04:45:16	
<b>NM</b>	<b>AGM</b>	<b>JBU655</b>	<b>04:45:16</b>	
NM	TXT	JBU655	04:45:16	
NM	CLE	JBU655	04:45:16	

Origin.....: <NOT APPLICABLE>  
Destination: <NOT APPLICABLE>

AGM  
FI JBU655  
MA 0010  
DT ZNY 200445  
- ZNY16 ATCA JBU655 UNABLE, DUE TO TRAFFIC, TRAFFIC IS JBU631  
APPROXIMATE POSITION 2710N06822W F350, SOUTHBOUND L455, ADVISE  
INTENTIONS 04:45:16

Acid :       Message Type :

Date from :       Date to :

Time from :       Time to :

# PILOT ADVISES THEY INTEND TO DEVIATE AS REQUESTED

SECTOR QUEUE			
NM	TXT	JBU655	04:45:16

ARINC RO TEI(s) Requiring Manual Processing:

FREE TEXT: WE ARE DEVIATING 35NM WEST UNDER AUTHORITY OF PILOT IN COMMAND AND WILL FOLLOW ICAO DEVIATION PROCEDURES

Process      Route      Print      Delete      Close

# WHAT DOES BACK ON ROUTE MEAN?

ATC - WHEN THE AIRCRAFT IS ACTUALLY ESTABLISHED ON A SEGMENT OF ITS CLEARED ROUTE.

IT DOES NOT MEAN THAT THE AIRCRAFT IS “HEADING” BACK TO ITS CLEARED ROUTE OR THE AIRCRAFT IS ABEAM A FIX ON ITS CLEARED ROUTE.

THIS IS IMPORTANT BECAUSE WHEN A PILOT REPORTS BACK ON ROUTE ANY PROBING FOR CONFLICTIONS WILL BE BASED ON A PROFILE INDICATING THE AIRCRAFT BEING **ON** ITS CLEARED ROUTE.

# **FIX REPORTING DURING DEVIATIONS**

- **WHEN DEVIATING IT IS IMPORTANT TO REMEMBER IT IS THE PILOT'S RESPONSIBILITY TO CONTINUE TO PROVIDE POSITION REPORTS, ABEAM ESTIMATES AND RE-ESTIMATES FOR PREVIOUSLY REPORTED FIXES, SO THAT THE AIRCRAFT'S PROFILE CAN BE KEPT AS ACCURATE AS POSSIBLE.**
- **IF THIS IS NOT DONE IT IS POSSIBLE THAT THE AIRCRAFT'S PROTECTED PROFILE AND ITS CURRENT PROFILE WILL BE DIFFERENT. REAL TIME CONFLICTS WILL NOT BE RECOGNIZED UNTIL THE AIRCRAFT'S PROFILE IS UPDATED. THE LONGER THIS TAKES THE LESS TIME ATC HAS TO EVALUATE THE SITUATION AND ISSUE CLEARANCES TO MAINTAIN SEPARATION.**

# CONDITIONAL CLEARANCES

An ATC clearance that involves a change in altitude associated with a restriction, such as:

a time or position for starting the climb or descent to the new altitude;

a time or position for when the new altitude is to be reached

Ref	Conditional clearance message element
	<b>Message element with “AT” restriction</b>
UM21	<b>AT [time] CLIMB TO [level]</b> or <i>AT [time] CLIMB TO AND MAINTAIN [altitude]</i>
UM22	<b>AT [position] CLIMB TO [level]</b> or <i>AT [position] CLIMB TO AND MAINTAIN [altitude]</i>
UM24	<b>AT [time] DESCEND TO [level]</b> or <i>AT [time] DESCEND TO AND MAINTAIN [altitude]</i>
UM25	<b>AT [position] DESCEND TO [level]</b> or <i>AT [position] DESCEND TO AND MAINTAIN [altitude]</i>
	<b>Message element with “BY” restriction</b>
UM26	<b>CLIMB TO REACH [level] BY [time]</b>
UM27	<b>CLIMB TO REACH [level] BY [position]</b>
UM28	<b>DESCEND TO REACH [level] BY [time]</b>
UM29	<b>DESCEND TO REACH [level] BY [position]</b>

Note.— Message elements shown in **bold text** indicate the preferred choice, per Doc 4444, and should be used for new implementations. The second choice is shown in *italic text* and indicates legacy implementations (e.g. most FANS 1/A aircraft) that are considered acceptable (GOLD, Appendix A).

# ZNY SAMPLE CONDITIONAL CLEARANCES

- IN AN EFFORT TO REDUCE PILOT MISUNDERSTANDING AND INCORRECT CLEARANCE ADHERENCE ZNY PREFIXES ALL ALTITUDE CHANGE CLEARANCES THAT TAKE AFFECT IN THE FUTURE WITH “**MAINTAIN (CURRENT ALTITUDE)**”.

CLEARANCE

**AAL467** LINND 0957/ JOBOC 1026/ 40N060W 1108/ 41N050W 1208/ 42N040W 1307/ 44N030W 1406

Urgent	Rpt	Negot	Rspn	Misc	Vert	Route	Speed	X-ing	Conn	Pre-Fnt							
DAC		climb	@Time	@Fix	↳Time	↳Fix	DSCND	@Time	@Fix	↳Time	↳Fix	EO	RTE	SPD	POS	OTA	HOLD
(19)	MAINTAIN (alt)	F340															INS
(21)	AT (time)	1150	CLIMB TO AND MAINTAIN (alt)	350													DEL
(26)	CLIMB TO REACH (alt)	350	BY (time)	1200													

Probing : MAINTAIN F340, AT 1150 CLIMB TO AND MAINTAIN F350, CLIMB TO REACH F350 BY 1200  
[AAL467]: No procedural conflict found for flight plan

RB CAN TPRD SND UNABL VHF SAVE EALT DVRD COORD RCPT REJ HLP CLS

# ROUTING ISSUES

THESE ARE ISSUES INVOLVING AIRCRAFT FLYING A ROUTE OTHER THAN WHAT ATC IS SHOWING.

ATC AND AIRLINE CAUSATIVE FACTORS:

- COMPANY HAS ISSUED A FLIGHT PLAN TO THE PILOT BUT HAS NOT FILED SUCH WITH ATC
- COMPANY HAS FILED MULTIPLE FLIGHT PLANS AND WRONG ONE BEING FLOWN
- MULTIPLE FLIGHT PLANS ON FILE AND WRONG ONE ACTIVATED/ CORRECT ONE DELETED
- AMENDMENT TO ROUTING HAS OCCURRED BUT PILOT ISSUED A “CLEARED AS FILED”
- PILOT ISSUED ROUTING BUT NOT FLYING SUCH
- PILOT FLYING PREVIOUS DAY’S FLIGHT PLAN
- READBACK/HEARBACK ERROR DURING VERBAL COORDINATION WITHIN ATC

# DETECTION METHODS

- ATC RECEIVES OUT OF CONFORMANCE REPORTS GENERATED BY ADS OR HF POSITION REPORT
- AIRCRAFT OBSERVED DEVIATING IN A RADAR ENVIRONMENT
- NOTIFICATION BY OTHER FACILITIES
- ATC ISSUES “DIRECT” TO A FIX TO WHICH THE PILOT RESPONDS FIX NOT ON ROUTE
- A PILOT REQUESTS TO GO DIRECT TO A FIX THAT ATC DOESN'T SHOW ON THEIR ROUTE OF FLIGHT

ATC OUT OF CONFORMANCE MESSAGE FOR  
ENSUING (THIRD) WAYPOINT DUE TO RECEIPT  
OF POSITION REPORT.



WHEN THE CONTROLLER PROCESSES THE MESSAGE A POSITION REPORT WINDOW OPENS WHERE THE DETAILS OF THE POSITION REPORT CAN BE ANALYZED. OUT OF CONFORMANCE DATA IS HIGHLIGHTED IN YELLOW FOR CONTROLLER ATTENTION.

**POSITION REPORT**

Help

**JBU423**      Source **HF**

ATC		PILOT	
REP	SKPPR 1143	SKPPR	1140
FL	F330 B 11080	F330 B	
EST	TASNI 1221	TASNI	1221
NXT	KINCH	MEGGG	

**OTHER INFO**

FPPR-E-POSR\_NXTPOS\_BAD : Third fix is not on the route.

Enter      Draw      Clear      Close

# ATC THEN ASKS FOR CONFIRMATION

NOTE: THIS IS NOT THE *NEXT POINT* BUT THE *ENSUING WAYPOINT*. AIRCRAFT HAS NOT YET FLOWN INCORRECT ROUTING. THIS IS WHAT ATC REFERS TO AS AN INTERVENTION. THE ERROR WAS CAUGHT BEFORE IT WAS FLOWN. THIS WILL STILL BE REPORTED IN ORDER TO DETERMINE HOW THE ROUTE DISCREPANCY WAS CAUSED.

CLEARANCE

**JBU423** RESQU 1128/ SKPPR 1143/ TASNI 1221/ MCOOP 1313/ KINCH 1334/ LENNT 1337

Urgent	Rpt	Negot	Rspn	Misc	Vert	Route	Speed	X-ing	Conn	Pre-Fnt							
DAC		Climb	@Time	@Fix	@Time	@Fix	DSCND	@Time	@Fix	@Time	@Fix	EO	RTE	SPD	POS	OTA	HOLD

(142) CONFIRM ENSUING WAY-POINT INS

(169) (free text) atc shows kinch DEL

PRBCANTPRBSNDUNDELVHFSAVEEALTDVRDCOORDRCPTREJHLPCLS