



**THE THIRTY-FIRST MEETING OF THE
INFORMAL PACIFIC ATC CO-ORDINATING GROUP PROVIDERS
MEETING
(IPACG PM/31)**

December, 2024

Agenda Item 3i: ATM issues

Start of trial of Offset Climb and Descent Procedure

(Presented by JCAB)

SUMMARY

This paper provides information about implementation and current results of offset climb/descent procedure and 12NM lateral separation minimum applicable while one aircraft climbs/descends through the level of another aircraft within Fukuoka FIR.

1. Introduction

1.1. Japan Civil Aviation Bureau (JCAB) has introduced various reduced separation minima. Currently, 30 NM longitudinal separation in cruising level, 15 NM longitudinal separation during climb or descent, and 23 NM lateral separation are available as minimum separation standards.

1.2. Even though the separation minima were reduced, some cases where the aircraft cannot take their optimum altitude due to blocking aircraft are still observed.

1.3. As a solution for the aircraft to fly at the optimum altitude, JCAB has introduced the offset climb/descent procedure in Fukuoka FIR oceanic airspace. Additionally, in order to minimize offset distance, JCAB started a trial operation of the 12 NM lateral separation minimum using ATS data link services on June 13, 2024.

1.4. Offset climb/descent procedure.

The offset climb/descent procedure allows aircraft to access to the requesting altitude by offsetting from original cleared route. The instruction to offset from the original cleared route and to rejoin the cleared route will be issued by controllers.

The pilots can request offset climb/descent, for example, when the altitude change request of 2000ft or more was rejected by controllers. And, controllers may suggest offset climb/descent to the pilot.

The offset climb/descent procedure in Fukuoka FIR is executed by the following procedure. This procedure is applicable not only to CPDLC but also to HF voice communication.

The controller instructs the aircraft to offset from the original cleared route in order to establish lateral separation from blocking aircraft. The offset distance varies depending on the required lateral separation. Although the FANS 1/A CPDLC support the clearance message to offset, there is no downlink message

set to indicate that the aircraft has established on offset route. Therefore, the request for reporting establishment on offset route will be composed by free text in case of clearance by CPDLC.

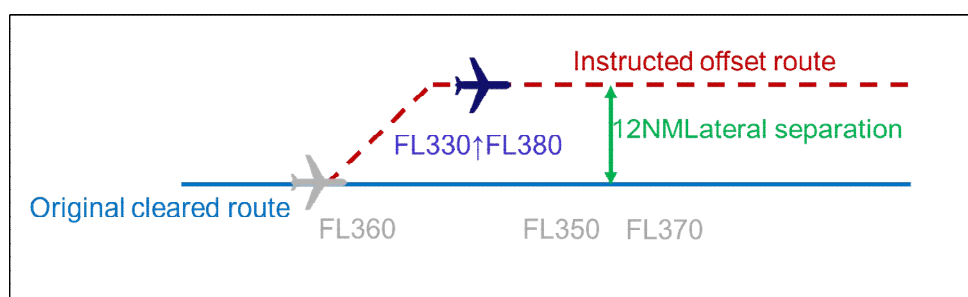
After the controllers confirmed that the aircraft established on offset route, they will issue the clearance to climb or descend. The pilot should keep on offset route, unless the controller issues the instruction to be back on route.

Once the controller confirmed the aircraft reached assigned altitude and established vertical separation from blocking aircraft, the instruction to be back on route is issued. In order to confirm that the aircraft established on original cleared route, “REPORT BACK ON ROUTE” message is concatenated with the instruction.

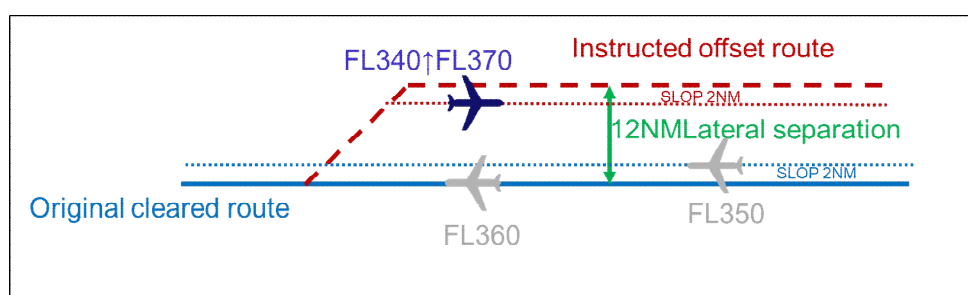
When the aircraft established on original cleared route, the pilot shall send “BACK ON ROUTE” message.

1.5. 12 NM lateral separation minimum

The offset distance in offset climb/descent procedure varies depending on the required lateral separation minimum. In order to minimize offset distance, JCAB has introduced and is in trial 12 NM lateral separation minimum applicable while one aircraft climbs/descends through the level of another aircraft.



The 12 NM lateral separation minimum had been incorporated into PANS-ATM in 2020. The separation minimum is applicable in the airspace where Strategic Lateral Offset Procedure (SLOP) up to 2 NM is authorized. The separation is applicable when one aircraft climbs/descends through the level of another aircraft, and both aircraft are required RNP 4, RCP 240 and RSP 180 approved.



2. Discussion

2.1. The number of times a minimum 12NM lateral separation was implemented using the ATS data link service is shown in Table 1. The number of times conducted varies from day to day due to changes in

conditions caused by weather, traffic volume, etc., but altitude changes by applying 12NM lateral separation were conducted 133 times during 141 days. This includes not only suggestions from ATC, but also the offset climb and descent requests from the aircraft.

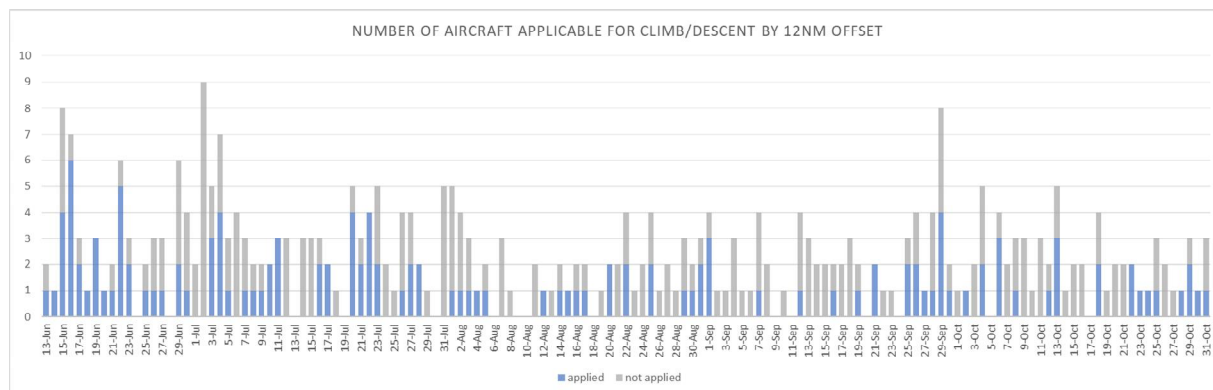


Table1

2.2. Of the 12 NM offset climb/descent applied, 84% is for climb and 16% is for descent (Table2). The altitude range in which altitude changes were made is shown in Table 3. More than half of all cases change altitude by 2000 ft, which is the minimum altitude change range by offset procedure, with a maximum of 8000ft of climb and 10,000ft of descent in some cases

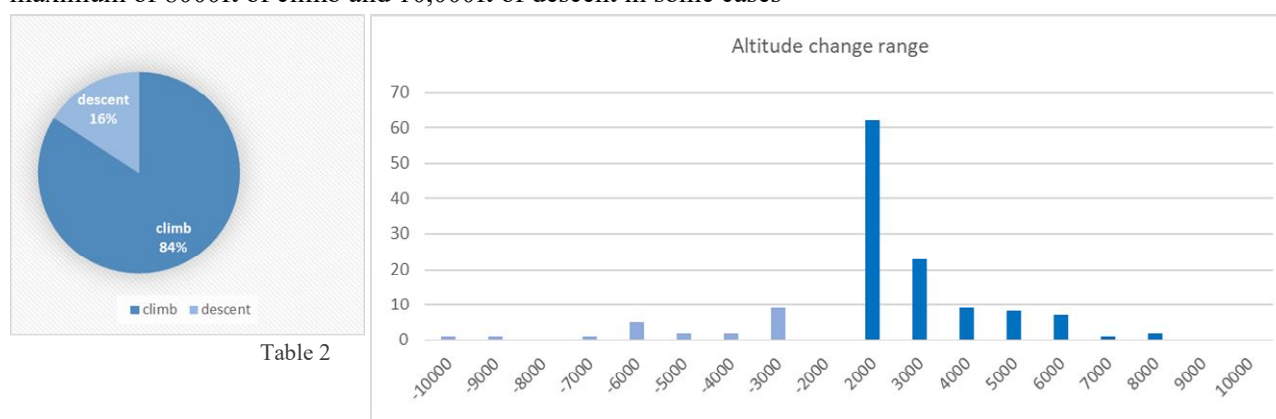


Table 2

Table3

2.3. The reasons for “not applied” in Table 1 are shown in Table 4. The most common reason was due to the relevant aircraft flying; the second reason was that pilots did not agree with ATC's proposed offset direction or distance when an offset of more than 12 NM was required in relation to the relevant aircraft. The “no time to BDY” is that this procedure could not be applied because the 12 NM separation would not operate seamlessly with other FIRs and the altitude change would not be completed by the boundary. “The other separation applied” is when the aircraft requested an offset climb or descent, but instead of an offset, another separation was applied, such as the ADS-C reduced separation or ADS-C CDP separation for an altitude change.

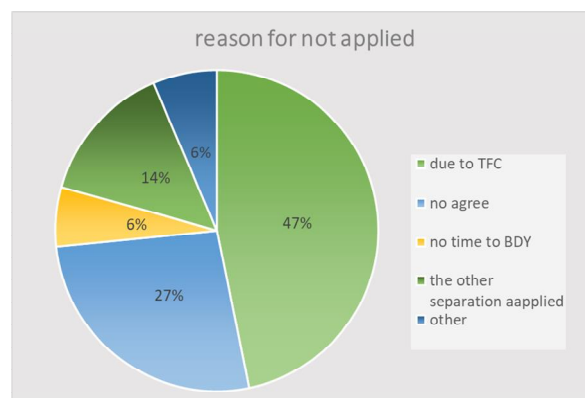
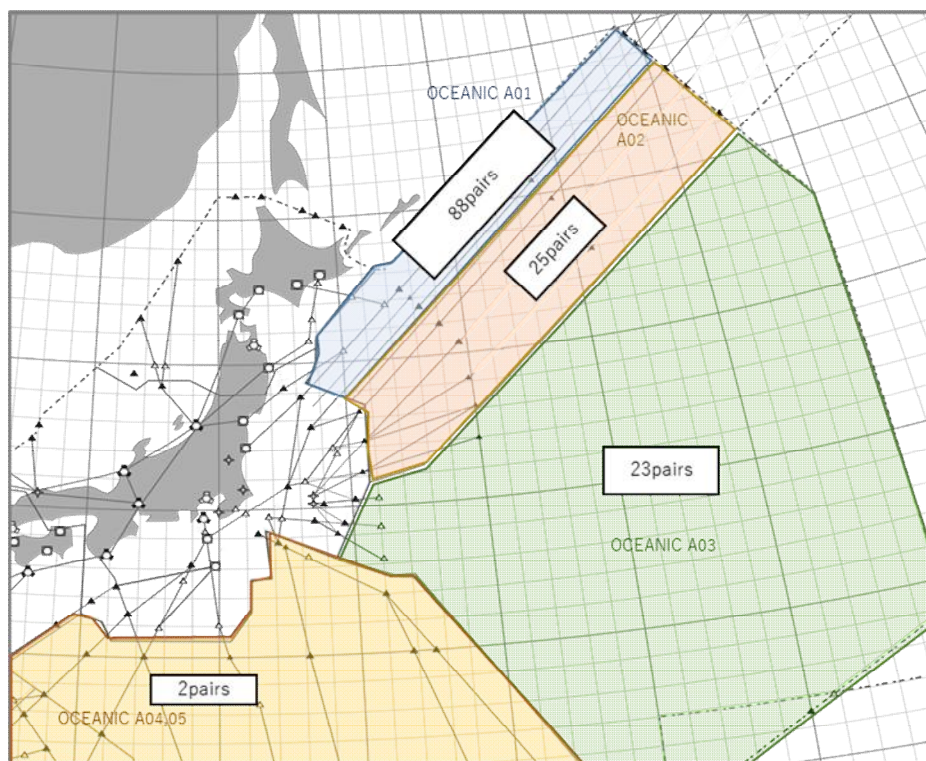


Table4

2.4. Application results by area are shown in Figure 1. Two-thirds of all applications have been within the NOPAC route system. The higher the traffic density, the more cases offset climb and descent will be applicable. When used in combination with the 12 NM lateral separation, the offset distance for offset climb and descent can be reduced. In addition, within the NOPAC route system, which has been redesigned to 25 NM separation, it is now possible to maintain lateral separation with aircraft flying on adjacent airways for altitude changes.

However, as noted in 2.3, there were several cases where it was not possible to apply it due to too high a density and associated large number aircraft flying.



2.5. 5 cases of climb/descent with an offset of 50 NM have also been applied when the data link is not used.

2.6. The implementation of the offset climb/decent procedure has increased the opportunities for altitude changes in cases where altitude changes were previously impossible due to lack of longitudinal separation. This procedure is thought to contribute to fuel efficiency and economical operation by meeting the operator's request for optimum altitude in climbing, and to improved safety in descent when avoiding bad weather.

2.7. So far, no significant problems have appeared.

2.8. This trial operations will continue to be conducted in preparation for official operation.

Action by the meeting

3.1 The meeting is invited to note the information provided.