



**THE FORTY-EIGHTH MEETING OF THE
INFORMAL PACIFIC ATC COORDINATING GROUP
(IPACG/49)**

Mita Kaigisho - Tokyo, Japan
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Agenda Item x: **Category**

Unbalanced Utilization of NOPAC Airway Structure

(Presented by North American carriers)

(Air Canada, American Airlines, Delta Air Lines, FedEx, Kalitta Air, United Airlines)

SUMMARY

The following paper provides information on the possible impact of the Japan preferred route structure on utilization of the North Pacific (NOPAC) route structure following the implementation of NOPAC Redesign Phase 2.

1. Introduction

- 1.1. An FAA presentation at the Oceanic Working Group meeting in July of this year highlighted the issue of unbalanced traffic on the NOPAC route structure following the implementation of the NOPAC Redesign Phase 2.
- 1.2. It was noted that, while there is heavy traffic congestion on westbound ATS route R220, there is light, under-utilization of M523 even though they are only 25nm apart. The same issue was noted eastbound with light use of R580 and heavy usage of A590.
- 1.3. Several possible mitigations were discussed including:
 - Relaxing UPR restrictions to allow joining M523 further to the southwest.
 - Allow PACOTS Track E to be generated onto M523.
 - Restricting use of R220 for flights departing California during identified time periods.
- 1.4. One possible cause is the difference in the routes that must be used when exiting R220 and M523 in Japanese airspace, particularly if a flight's destination is something other than a Tokyo area airport.
- 1.5. While the NOPAC Redesign is a positive for users of Anchorage FIR (PAZA) and Fukuoka FIR (RJJJ), through multi-state cooperation, there is potential for increased efficiency and airway balance which would benefit airspace users and ANSPs alike.

2. Impact on Operators

- 2.1. Operators are primarily planning R220 westbound due to onward connectivity efficiencies sought by flight planning systems. This results in the overloading of one airway resulting in separation challenges for ATC, along with inefficient use of airspace. This is contrary to the intent of the NOPAC Redesign. This will again be exacerbated with the future implementation of airway N507 once NOPAC Redesign Phase 3 is initiated.
- 2.2. These limitations impact all airlines using the NOPAC, whether directly, through potential efficiencies or indirectly through potential altitude restrictions imposed due to spacing requirements and congestion of R220.

3. Supporting Data

- 3.1. From M523 at IPGUD flying direct to DAIGU, the savings below highlight the value, and this change would also help balance M523 traffic compared to the published routes (Fig. 1)

Dep	Arr	Type	Route	NM	Fuel	Time	CO2
PAZA	VHHH	B777	IPGUD-DAIGU	15	210KG	2 Min	0.66T
PAZA	VHHH	B787	IPGUD-DAIGU	15	130KG	2 Min	0.44T

Figure 1

- 3.2 Adding new OTRs would provide planning flexibility and assist with additional route-out options, increasing flight safety when weather conditions dictate.

New westbound OTRs from R220 to M523 and from M523 across R220 to ESLUK would allow connections to existing Japanese route options.

New eastbound OTRs from A590 to R580 and from R580 to A590 would allow for increased flexibility from the Japanese route options to the NOPAC. (Fig. 2)

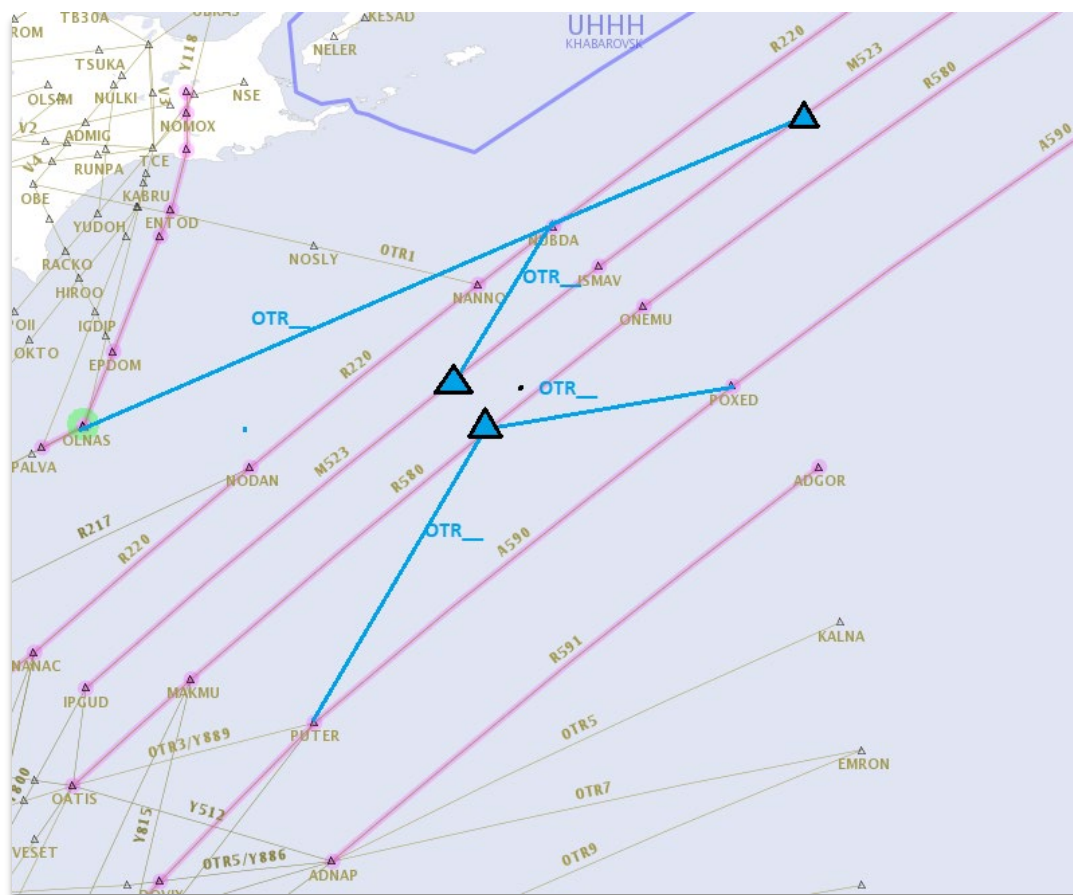


Figure 2

- 3.3 Traffic to Seoul's airports would be improved by the usage of R217 after R220 or a new OTR from NANNO. (Fig. 3)

Dep	Arr	Type	Route	NM	Fuel	Time	CO2
PAZA	ROK	B777	R217	40	500KG	3 Min	1.58T
PAZA	ROK	B787	R217	40	300KG	3 Min	0.95T
PAZA	ROK	B777	ESLUK	50	700KG	4 Min	2.21T
PAZA	ROK	B787	ESLUK	50	400KG	4 Min	1.26T
PAZA	ROK	B777	M523	-10	-150KG	-4 Min	-0.47T
PAZA	ROK	B787	M523	-10	-100KG	-4 Min	-0.32T

Figure 3

- 3.4. NOPAC Redesign Phase 3 introduces new airway N507. The numbers below are based on the use of potential new OTRs between R580 and A590. Connectivity between airways is important but does not inherently provide a major savings unless there are specific wind or weather conditions. However, the connectivity would prove to be valuable if mandatory routings prior to oceanic entry was not equitable and balanced from all origins in Asia.

Dep	Arr	Type	Route	NM	Fuel	Time	CO2
ROK	PAZA	B777	580 OTR 590	10	0KG	1 Min	0T
ROK	PAZA	B787	580 OTR 590	10	0KG	1 Min	0T
ROK	PAZA	B777	590 OTR 580	10	0KG	1 Min	0T
ROK	PAZA	B787	590 OTR 580	10	0KG	1 Min	0T

- 3.5 A detailed analysis of these impacts on one particular (Kalitta Air) is provided at the end of this paper. (Appendix 1)

4. Conclusion

- 4.1 The meeting is invited to note the information provided.