



International Civil Aviation Organization

ICAO Twenty-Seventh Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/27)

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Agenda Item 5: Airspace Safety Monitoring Activities/Requirements in the Asia/Pacific Region

PARMO RVSM TRAFFIC COMPLIANCE MONITORING

(Presented by USA/PARMO)

SUMMARY

This information paper provides an assessment of non-State-approved operators using the Reduced Vertical Separation Minimum (RVSM) airspace overseen by the Pacific Approvals Registry and Monitoring Agency (PARMO) in the Pacific and a portion of North East Asia. The assessment process is described and the results for period from December 2021 are presented. PARMO approvals records as of April 2022 were used for the assessment are presented. *This audit was also presented at RMACG/17 Part 1 Meeting in IP13.*

1. INTRODUCTION

1.1. The Pacific Approvals Registry and Monitoring Organization (PARMO), a service provided by the U.S. Federal Aviation Administration's William J. Hughes Technical Center since 2001, serves as the Regional Monitoring Agency (RMA) for the airspace in the Pacific and a portion of North East Asia.

1.2. As part of the duties of an RMA, outlined in ICAO Doc 9937 (Reference 1 para. 2.4.5), the PARMO performs regular checks of the operator compliance with State approval requirements within the Pacific and North East Asia airspace. The purpose of these checks is to identify non-approved operators and aircraft using the RVSM airspace to ensure the safety of the airspace.

1.3. At RMACG/6, it was decided that all RMAs would conduct a traffic scrutiny survey for their region of jurisdiction every December. (Reference 2) At RMACG/10, the requirement for a December traffic scrutiny survey was amended to allow the traffic scrutiny survey to be performed on any month. (Reference 3).

1.4. This paper describes the process used by the PARMO to identify airframes operating within RVSM airspace, FL290 to FL410, inclusive, without the mandatory approval. This is accomplished through systematic process of matching air traffic movement data and airframe approval records. The results for the period from December 2021 for the RVSM airspace within the Pacific and for a portion of North East Asia airspace are presented. PARMO approvals records as of April 2022 were used for the assessment are presented.

2. DISCUSSION

2.1. The PARMO requests an annual one-month traffic movement sample in addition to all of the large height deviation reports from the Air Traffic Service Providers (ATS) in the Pacific and North East Asia airspace. The Traffic Sample Data (TSD) for December 2021 for Pacific and North East Asia airspace was received from five of the six Flight Information Regions (FIRs) under PARMO responsibility: Auckland (New Zealand), Incheon (Republic of Korea), Nadi (Fiji), Oakland (United States, ZAK) and Anchorage (United States, ZAN). Tahiti submitted their traffic sample for the period after the audit was complete, so their airspace was not included in the April 2022 audit.

2.2. Appendix K of ICAO Doc 9937 (Reference 1) contains the sample content and format for collection of sample of traffic movements. In this table, the aircraft registration number is listed as optional. Therefore, the registration number is not available in some of the traffic samples. For the operations without a registration number, the operator-aircraft combination is used when matching the traffic data to the approvals. Use of this technique does not ensure complete verification of approval status. PARMO will investigate the potential for requiring aircraft registration number with all TSD.

2.3. The aggregate approvals database containing the approval records provided by the collective RMAs is used to verify the RVSM approval status of the operations identified in the traffic movement data sample. Updates to the aggregate database are provided by most of the RMAs on a monthly basis.

2.4. All civil aircraft operations observed in each of the December 2021 traffic samples were compiled into one master traffic sample, or superset, consisting of approximately 38,620 airframes. The superset was compared against the collective approvals database as of February 2022. The registration numbers and operator-aircraft combinations identified in the superset as asserting approval for operations in RVSM airspace were cross-examined with the collective approvals database. Any of these operations for which an RVSM approval was not found was placed on a list for further examination and verification.

2.5. The verification process involves the exploration of systematic reasons for removing entries from the list. These reasons include but are not limited to:

- lags in State notification of approval to the RMA
- lags in updates to the approvals database and the local version of ICAO Doc8585
- mistakes and typographical errors in the original traffic data
- code-sharing and lease arrangements between airlines.

2.6. Table 1 contains the detailed summary of these results. The list contains 18 operations from 8 States for which no approval could be found. These operations will be further investigated and the appropriate parties will be queried if no additional information is obtained.

RMA	COUNT
State	
Registration Number	
AAMA	3
Australia	3
VHLON	1
VHNSQ	2
VHZNP	1
CARSAMMA	2
Argentina	1

RMA	COUNT
State	
Registration Number	
LVKAX	2
Panama	1
HP1522CMP	1
EURRMA	7
Azerbaijan	1
4KSW88	1
France	3
FOCQZ	2
FYDAA	1
FYDAC	2
United Kingdom (Cayman Islands)	3
VPCEI	1
VPCFH	2
VPCFQ	2
NAARMO	5
United States	5
N219YY	1
N321SF	3
N404HG	2
N66FJ	1
N900KU	1
PARMO	1
Republic of Korea	1
HL8224	10

Table 1: RVSM operations within the PARMO responsibility for which RVSM approvals were not found.

2.7. Experience has shown that the primary systematic reason for failure to match operations and approvals is a delay in State notification of the approval status of some operators to the appropriate RMA. Thus, the importance of timely notification by States of operator approval status to RMAs is emphasized by these results.

2.8. In review of the 2021 assessment of non-State-approved RVSM operation results, most of the noncompliant entries could be the result of registration number changes, registration entry errors or the use of a call sign rather than a registration number. It was determined that a more frequent review of traffic data will better identify errors for mitigation.

2.9. Due to the long delay between the minimum traffic sample collected in December 2021 and reporting of the audit data in August 2022, most of the aircraft identified in the list above have now been confirmed as approved or have been addressed. As noted previously, lag in approval notification to PARMO by the PARMO States is the largest source of aircraft being identified on this list.

2.10. Other detections that would be of a temporary nature were noted. Several probable typos were also identified. Ferry operations and manufacturer’s temporary registrations are not included in the KSN and will continue to be identified. However, the value of auditing them is low because they tend to be singular operations. Finally, several operators who gain access to RVSM via the Section 9 rule flew in oceanic airspace to Hawaii and clarification has been provided on the limits to Section 9 for those operators.

2.11. In order to further investigate the issue of false identification, quantify the lag from individual States, and identify aircraft that are actually unapproved, PARMO will conduct monthly traffic audits within FAA-delegated oceanic airspace (Oakland and Anchorage) for the reporting year 2022 and will provide the resulting data at the next RASMAG meeting. The data can be used to consider if increasing the minimum traffic sample reporting data for future regional audits would produce a more meaningful audit result.

3. ACTION BY THE MEETING

3.1. The meeting is invited to:

- a) note and review the contents of the PARMO traffic scrutiny work presented in this paper; and
- b) provide any relevant updates on the records contained within the results.

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References

1. *Doc 9937 - Operating Procedures and Practices for Regional Monitoring Agencies in Relation to the Use of a 300 m (1000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive*, International Civil Aviation Organization, First Edition - 2010.
2. *Summary of Discussions (RMACG/6)*, Cornwall, Canada, 6-10 June 2011: Task #10 “All RMAs conduct traffic scrutiny survey during the same time frame [December] in order to understand the magnitude of the situation.”
3. *Summary of Discussion (RMA CG/10)*, Bangkok, Thailand, 18 - 22 May 2015: Paragraph 3.2.33 “The meeting discussed the need of the fixed month for scrutiny activities as decided at the RMACG/6 meeting and agreed that with the maturity of most of the monitoring programs, and with most of the RMAs performing monthly verification of the approval status, it is not necessary to fix a month for data collection, but it is of crucial importance the exchange of data between the RMAs to guarantee that all have the same correct information on approval status.”

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