



ICAO

International Civil Aviation Organization

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

Video Teleconference, 22 – 25 August 2022

Agenda Item 3: Reports from Asia/Pacific RMAs and EMAs

PROGRESS ON RISK MITIGATION AT HOT SPOT M

(Presented by Australian Airspace Monitoring Agency)

SUMMARY

This paper discusses the risk mitigation measures being taken at LHD Hot Spot M. Hot Spot M is on the Melbourne—Colombo FIR interface and was added to the list of Hot Spots at RASMAG/24 in 2019. The purpose of this paper is to give a brief background about the occurrences at Hot Spot M and to update the meeting about progress made on implementing mitigation measures.

1. INTRODUCTION

1.1 This paper discusses the risk mitigation measures being taken at LHD Hot Spot M, on the Melbourne—Colombo FIR interface. It was added to the list of Hot Spots at the 24th Meeting of the RASMAG (RASMAG/24) in 2019.

1.2 In the period 1 January 2017—31 December 2021, there were Category A (flight crew failing to climb/descend the aircraft as cleared), Category B (flight crew climbing/descending without ATC clearance), and Category E occurrences (coordination errors as a result of human factors issues).

1.3 It was noted that a large number of the Category A and B events (Aircrew/Pilot attribution) involved the Indian Navy.

2. DISCUSSION

Summary of LHDs for the period 1 January 2017—31 December 2021

2.1 The total number of LHDs, their duration, and levels crossed are shown by year in **Figure 1**. The total number of LHDs and associated duration/levels crossed has decreased since 2019 inclusive.

2.2 The total number of LHDs, their duration, and levels crossed are shown by Category Code in **Figure 2**.

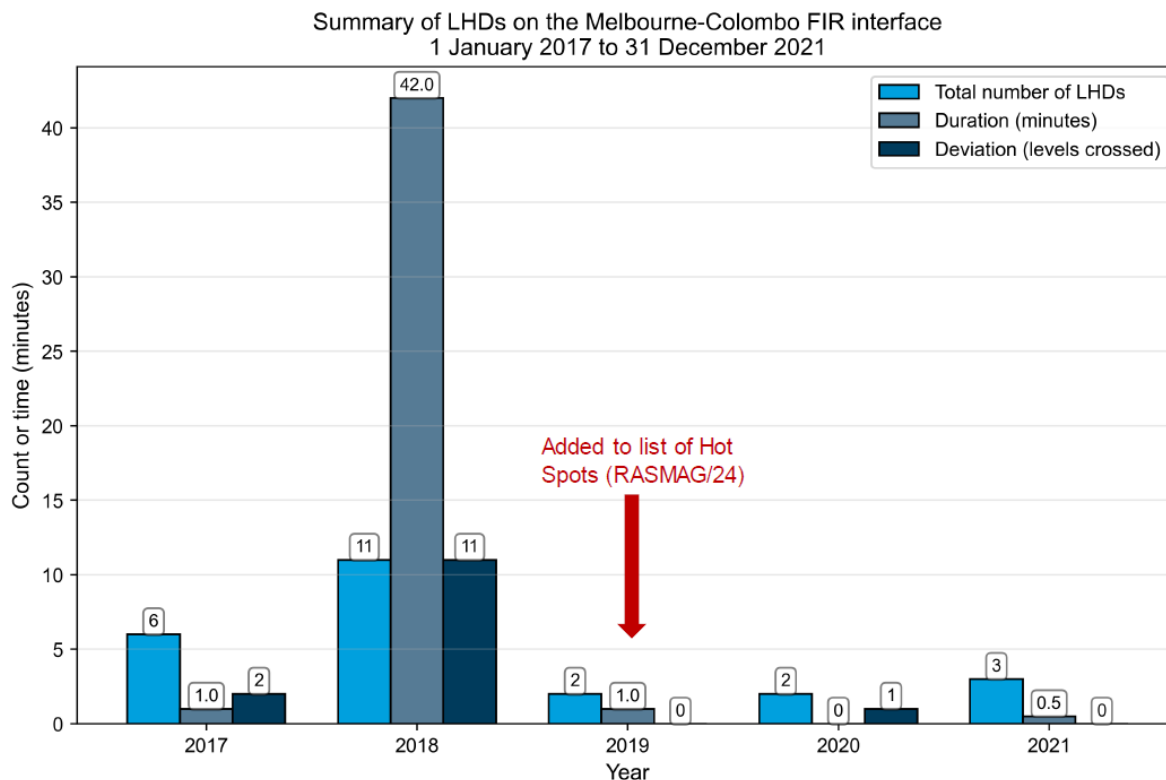


Figure 1: Total number of LHDs, their duration, and levels crossed, for the period 1 January 2017—31 December 2021.

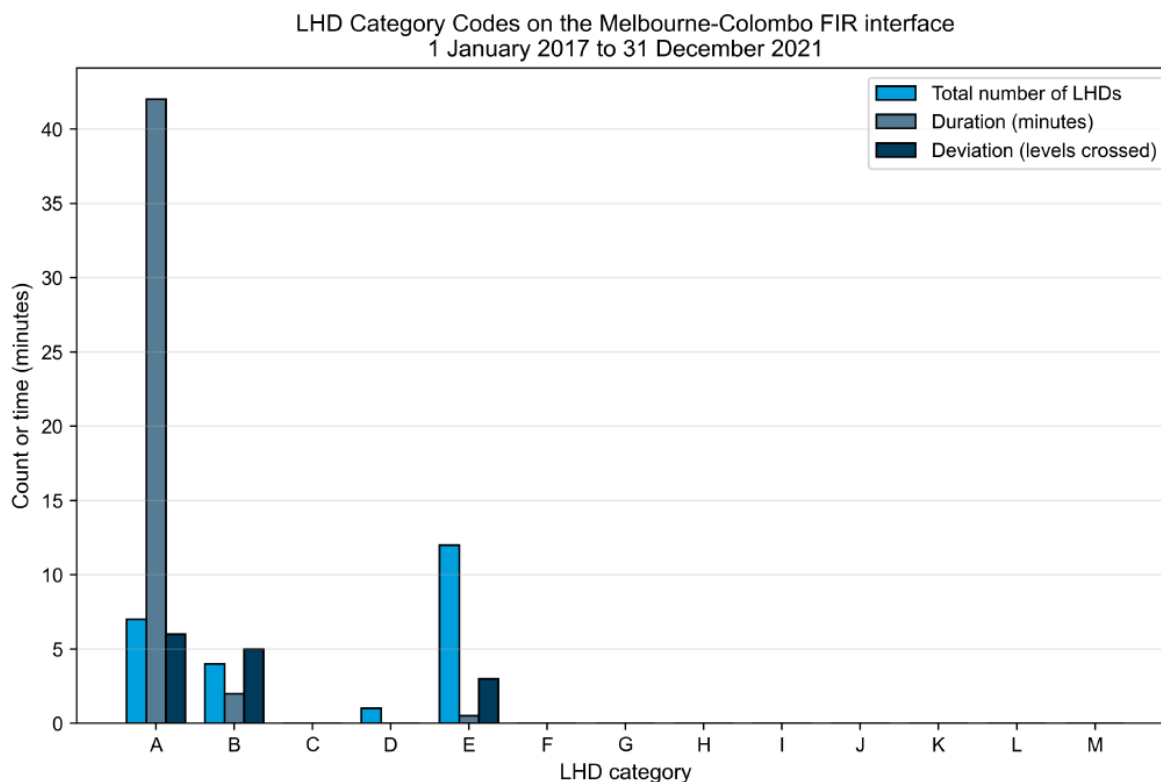


Figure 2: Total number of LHDs, their duration, and levels crossed by LHD Category Code.

2.3 In the period 1 January 2017—31 December 2021, there were 11 LHDs in the Aircrew/Pilot attribution category (Category A, B, or C). Of these, four involved the Indian Navy.

2.4 There were 13 LHDs in the ATC attribution category (Category D, E, or F). Colombo was the transferring unit in 11 of these, and Melbourne was the transferring unit in two events.

2.5 There was one event involving the Indian Navy in September 2018, which involved multiple planning and operational issues. It was assessed as 41 minutes duration based on the time reported at KETIV (the closest known location to the boundary) and the time contact was established with the aircraft. This event contributed to a large proportion of the risk at Hot Spot M in 2018.

2.6 The geolocation of the occurrences, including the 41-minute event, is shown in **Figure 3**.

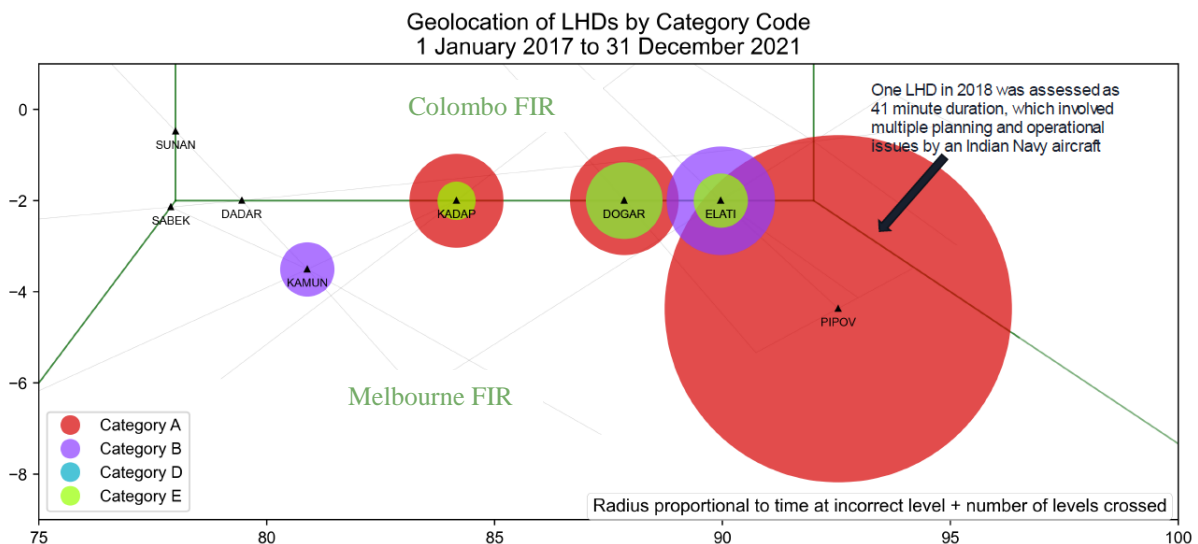


Figure 3: Geolocation of the LHDs for the period 1 January 2017—31 December 2021. The sizes of the circles are proportional to the sum of the time spent at the incorrect level and the number of levels crossed.

Implemented mitigations

2.7 In 2020, a number of measures were taken in the Colombo FIR in order to mitigate occurrences in the ATC attribution category. In particular, Colombo Oceanic Airspace was sectorised into Colombo Oceanic North and Colombo Oceanic South to increase sector capacity while reducing controller workload.

2.8 A Safety Assessment Report for the North and South Sector operations was conducted by Airport & Aviation Services (Sri Lanka) in July 2020 and provided to AAMA in October 2020.

2.9 Controller refresher training was conducted for Colombo Oceanic Airspace throughout the calendar year 2020.

2.10 For the period 1 January 2020—31 December 2021, there was one LHD in the ATC attribution category. The event involved Colombo ACC issuing an amended level without prior coordination with Melbourne ATC, and was assessed as 0.5 minutes duration. This suggests that LHDs in the ATC attribution category are decreasing on the Melbourne—Colombo FIR interface.

2.11 Since the LHDs at Hot Spot M have been decreasing and mitigation measures have been implemented by Colombo ACC, RASMAG/26 proposed to re-classify the FIR interface as a non-Hot Spot.

Outstanding mitigations

2.12 However, establishing a suitable POC with the Indian Navy was identified as a key mitigation measure, which has not yet been achieved.

2.13 As such, Action Item RASMAG 26/4 was for the AAMA to write to the Directorate General of Civil Aviation (DGCA) India to obtain contact details for the Indian Navy, and to provide details of the occurrences involving the Indian Navy. Action Item RASMAG 26/4 is shown in **Table 1**.

Action Item	Description	Responsible party	Status	Reference	Action Item
26/4	It was also noted that a significant number of the occurrences at this hot spot (<i>Hot Spot M</i>) were the result of Indian Navy flights not complying with ATC instructions, and that an identified mitigation strategy was to establish contact with the Indian Navy to resolve the matter. This mitigation had not yet been achieved. India informed the meeting that contact details for the Indian Navy could be provided if AAMA could provide the details of the occurrences. A formal letter on the subject should also be addressed to the Director General of Civil Aviation of India, with copy to BOBASMA.	MAWG/9	BOBASMA AAMA	Open	RASMAG/26 Report para 3.114 AAMA to write to DGCA India to obtain contact details for Indian Navy AAMA to provide details of occurrences Action item MAWG 9/5 deliverable - An email to DGCA of India attached with the letter from AAMA – Open

Table 1: Action Item RASMAG 26/4.

2.14 **Attachment 1** to this paper is the letter written by the AAMA to DGCA India, including an outline and geolocation of the occurrences involving the Indian Navy.

2.15 **Attachment 2** to this paper is Flimsy01 presented by AAMA at the 9th Meeting of the RASMAG Monitoring Agency Working Group (MAWG/9) in February 2022. This is a slide pack outlining details of the occurrences at Hot Spot M, including occurrences involving the Indian Navy, recent occurrences, and additional occurrences including LLD/LLEs.

2.16 **Attachment 3** to this paper is the email written by the Monitoring Agency for Asia Region (MAAR) to DGCA India with copy to the Bay of Bengal Arabian Sea Monitoring Agency (BOBASMA). The email contained **Attachments 1 and 2** to this paper as attachments.

2.17 The email was sent in March 2022, but no response has yet been received.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper
- b) offer suggestions regarding establishing a POC with the Indian Navy
- c) offer feedback regarding re-classifying Hot Spot M as a non-Hot Spot.

.....

**Australian Airspace Monitoring Agency
Chief Safety & Risk Office**GPO Box 367
Canberra ACT 2601

t (+61)7 3866 3462

15 March 2022

www.airservicesaustralia.com/organisations/aama
aama@airservicesaustralia.com

ABN 59 698 720 886

Directorate General of Civil Aviation
Aurobindo Marg
Opp. Safdarjung Airport
New Delhi 110 003
India

Dear Sir or Madam,

The Australian Airspace Monitoring Agency (AAMA) has been established by the International Civil Aviation Organization (ICAO) Asia Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) to support the safe use of the reduced vertical separation minimum (RVSM) in the airspace of Australia, Indonesia, Nauru, Papua New Guinea and Solomon Islands, in accordance with guidance published in ICAO Doc 9574, Annex 6 and Annex 11.

Among other activities, the AAMA monitors the risk in RVSM airspace as a result of operational errors. In conjunction with the ICAO Regional Monitoring Agencies (RMAs) globally, the AAMA maintains a record of high-risk 'Hot Spots' which are reviewed by the Regional Airspace Safety Monitoring Advisory Group (RASMAG) annually.

Since 2017, there has been a high number of operational errors observed on the Colombo—Melbourne Flight Information Region (FIR) interface. This region was deemed to be a Hot Spot (Hot Spot M) during the 24th Meeting of the RASMAG in 2019. During the calendar years 2017—2019, eight operational errors involved the Indian Navy, which contributed to a large proportion of the risk.

AAMA is tasked with developing and implementing mitigation measures for the risk at Hot Spot M. While some mitigation strategies have already been implemented, an outstanding task is to establish a point of contact with the Indian Navy to prevent recurrence of such situations as traffic levels rise. The purpose of this letter is to outline the operational errors involving the Indian Navy on the Melbourne—Colombo FIR interface with a view to establish a means of communication with the Indian Navy.

There were four operational errors involving a vertical deviation, with details given in the table below. The Minutes or levels column refers to a qualitative assessment made by the AAMA regarding the number of minutes spent at the incorrect level, or the number of levels crossed by the aircraft during the deviation. This is an indication of the severity of each occurrence.

Date	Callsign	Location	Minutes or levels	Description
19 August 2017	VA25K	DOGAR	2 levels	The aircraft had flight planned to operate in an exercise area within the Colombo and Melbourne FIRs. During this time, communication with the aircraft was marginal in HF, and there was a lack of a specific position report or accurate area of operation. The aircraft descended from FL310 to FL250 without notice to ATC.
22 September 2018	MP45R	ELATI	1 minute	Colombo ATC correctly coordinated aircraft at FL310, which was confirmed by aircraft reported estimate. The aircraft actually crossed into Melbourne FIR at FL280.
23 September 2018	NL13K	PIPOV	41 minutes	<p>Multiple planning and operational issues:</p> <ul style="list-style-type: none"> • Planned NISOK L774 ELATI - ELATI not on route L774 • Position report for PIPOV received late • Reported at level that was different to what was expected (coordinated) (reported at F300 - coordinated level F310) • Proposed inconsistent tracking point • Tracked via waypoint different to reported tracking. <p>The event was assessed as 41 minutes duration based on the time reported at KETIV (closest known location to the boundary) and the time contact was established with the aircraft.</p>
24 September 2018	AJ29K	ELATI	3 levels	The aircraft crossed into Melbourne FIR at ELATI at FL320 with no contact on HF. 10 minutes later the aircraft reported descent to FL250 without a clearance. 12 minutes later the aircraft changed their airwork area in the flight plan without notice.

Additionally, there were four operational errors involving a longitudinal or lateral deviation. These are outlined in the table below. The Minutes or deviation column refers to the number of minutes spent at the incorrect position, or the lateral deviation from the intended route. This column is also indicative of the severity of each occurrence.

Date	Callsign	Location	Minutes or deviation	Description
16 January 2019	MJ16A	ELATI	3 minutes	The aircraft reported with an estimate for ELATI without a flight plan.
1 April 2019	NAVY324	KADAP	4 minutes	The aircraft was coordinated by Colombo ATC to Melbourne ATC with a certain area of operation. The aircraft then flew in a different area of operation, which Melbourne ATC were unable to ascertain. The aircraft advised a change in FIR exit point from ALVES to KADAP including a significant estimate change. Melbourne ATC coordinated the new information to Colombo ATC.
8 April 2019	CY28K	POSOD	120 NM	The aircraft did not track according to flight plan, creating coordination difficulties between Colombo, Melbourne, and Jakarta.
3 June 2019	NM34P	AKUKO	18 minutes	The aircraft executed multiple flight plan amendments via HF, but subsequently failed to fly the new route and reported at locations where they were not cleared.

Given the large number of operational deviations and their overall severity, AAMA would appreciate assistance with establishing a point of contact with the Indian Navy. This is especially important as traffic levels are expected to increase following easing of international travel restrictions in response to the COVID-19 pandemic.

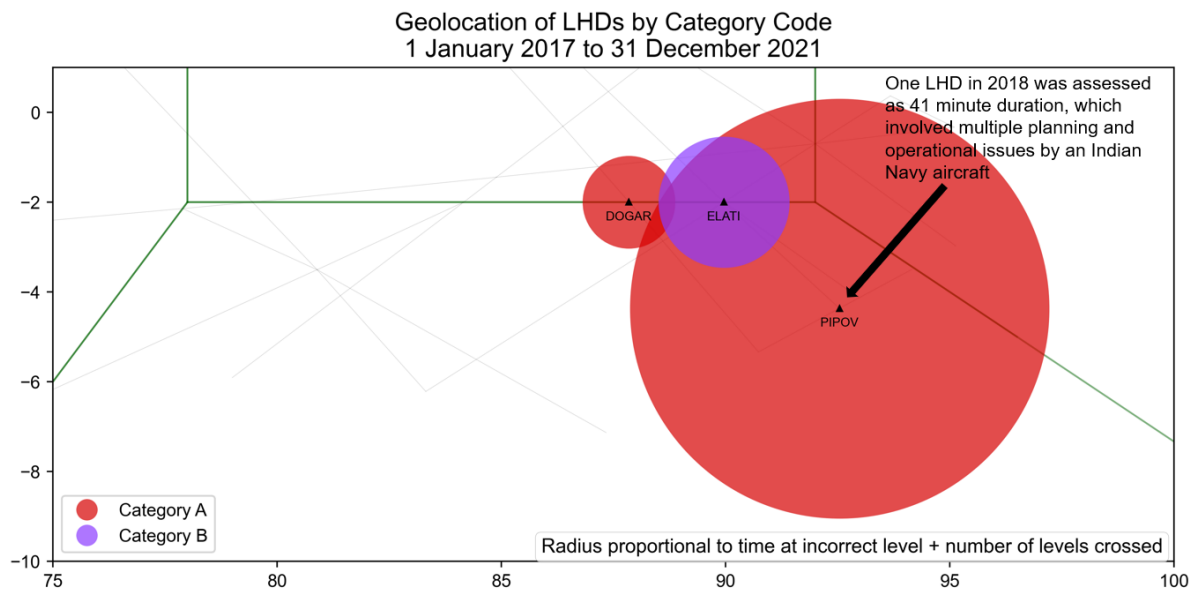
The AAMA looks forward to your collaboration in maintaining the safety of our airspace globally.

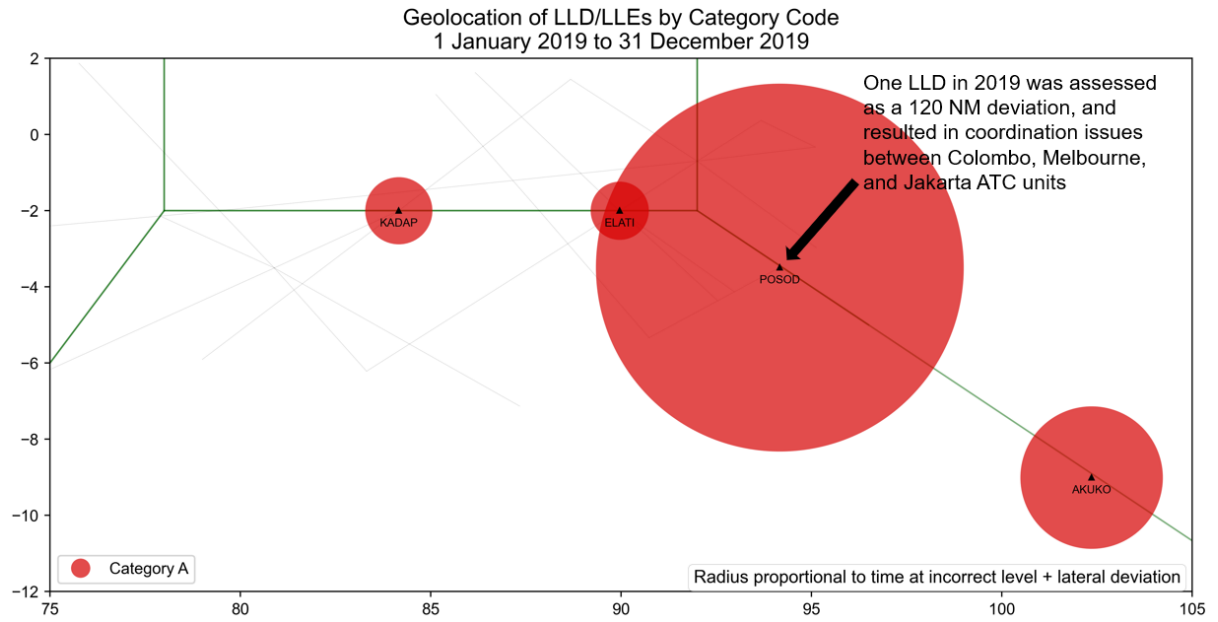
Yours sincerely,



Dr Amelia Gontar
Australian Airspace Monitoring Agency

Please find additional details and maps on the following pages.







Monitoring Agency Working Group (MAWG)

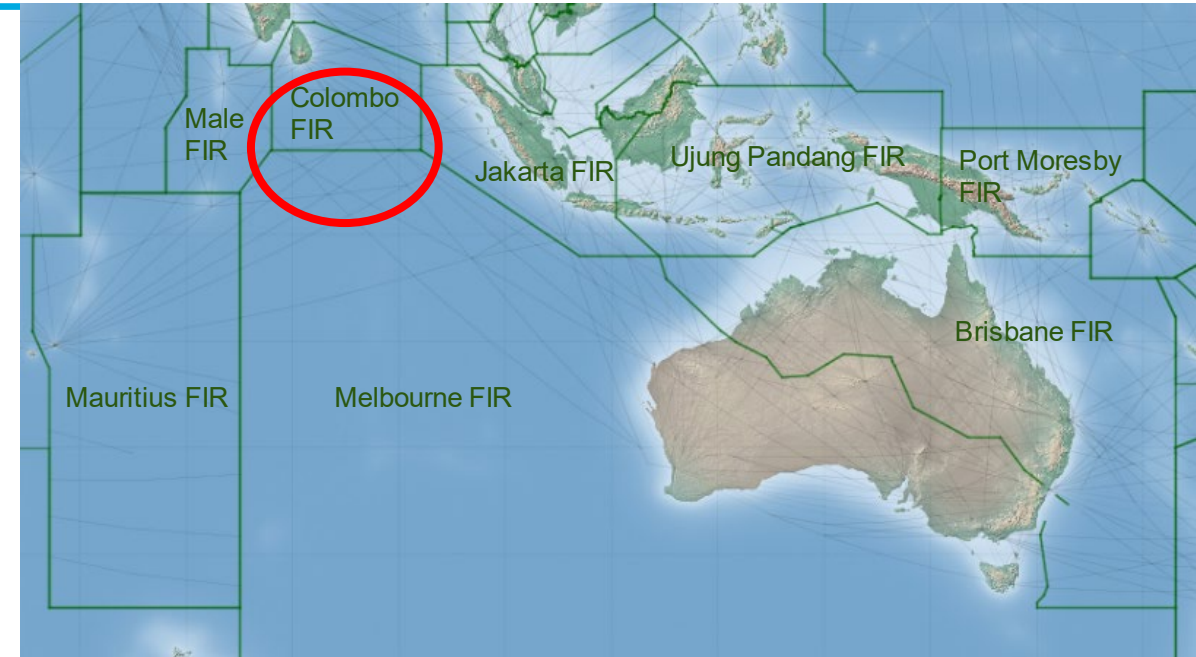
14—17 February 2022

OCCURRENCES AT HOT SPOT M

Australian Airspace Monitoring Agency (AAMA)

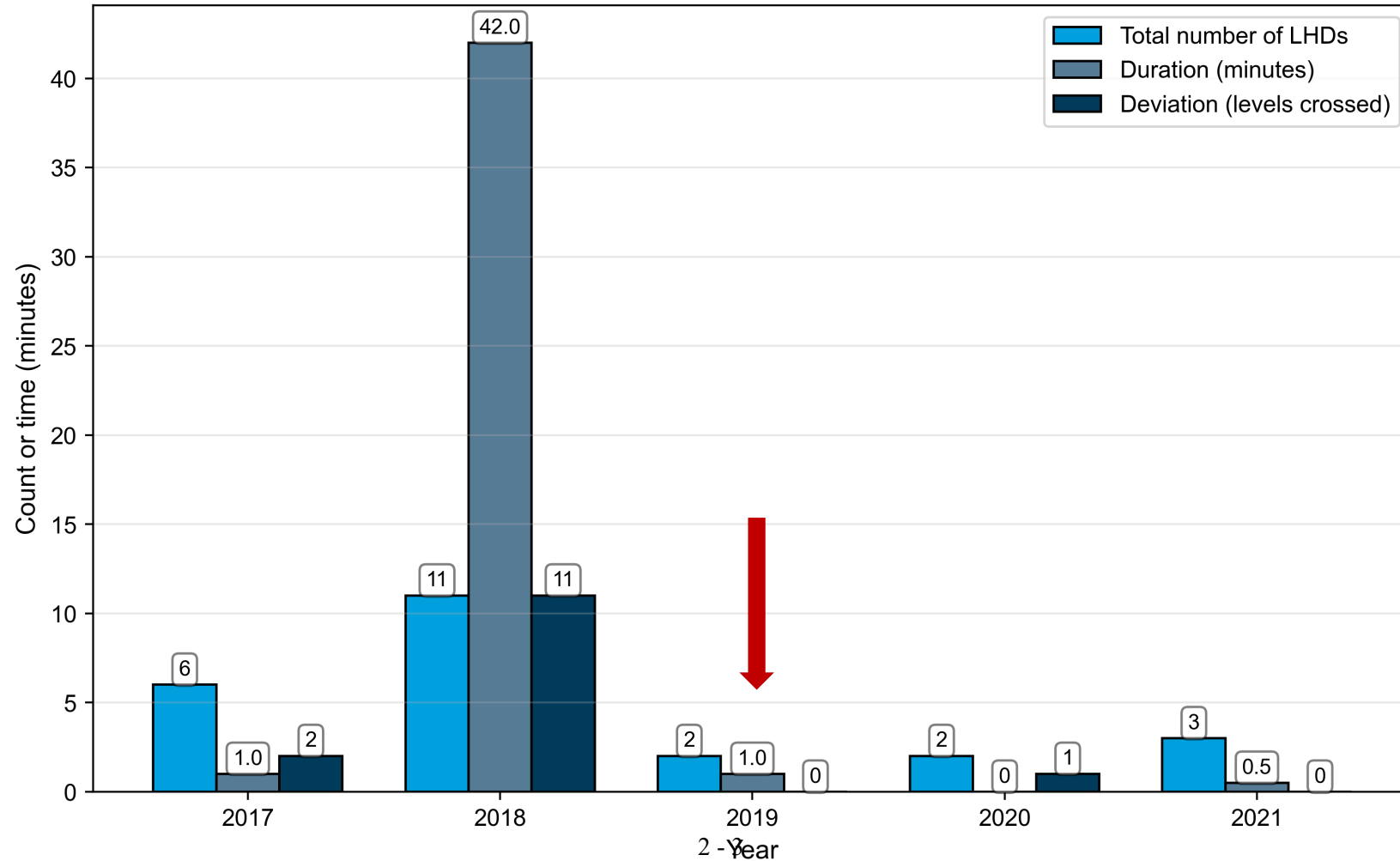
BACKGROUND

- Category A, B, and E LHDs
- A large number were pilot errors involving the Indian Navy
- Sectorisation of Colombo Oceanic airspace
- Safety Assessment for sectorisation
- ATC awareness and training



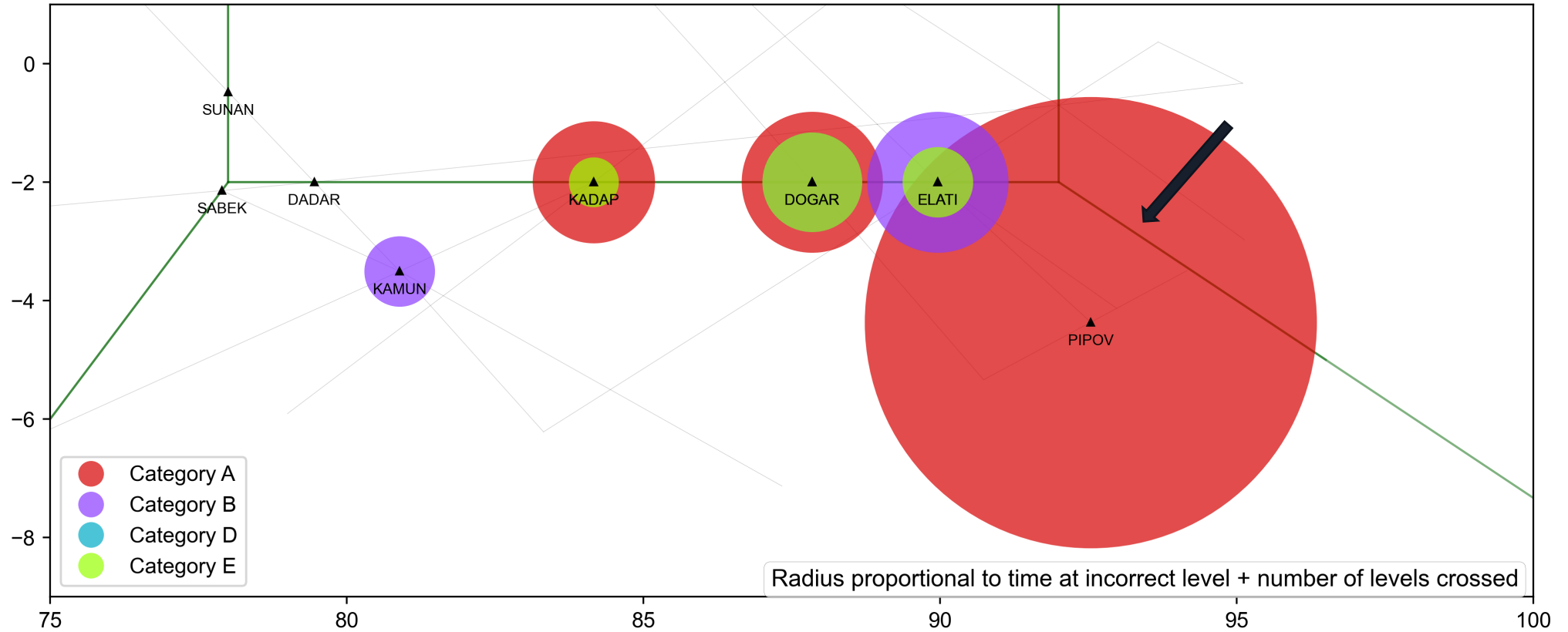
TREND ACROSS 5 YEARS

Summary of LHDs on the Melbourne-Colombo FIR interface
1 January 2017 to 31 December 2021



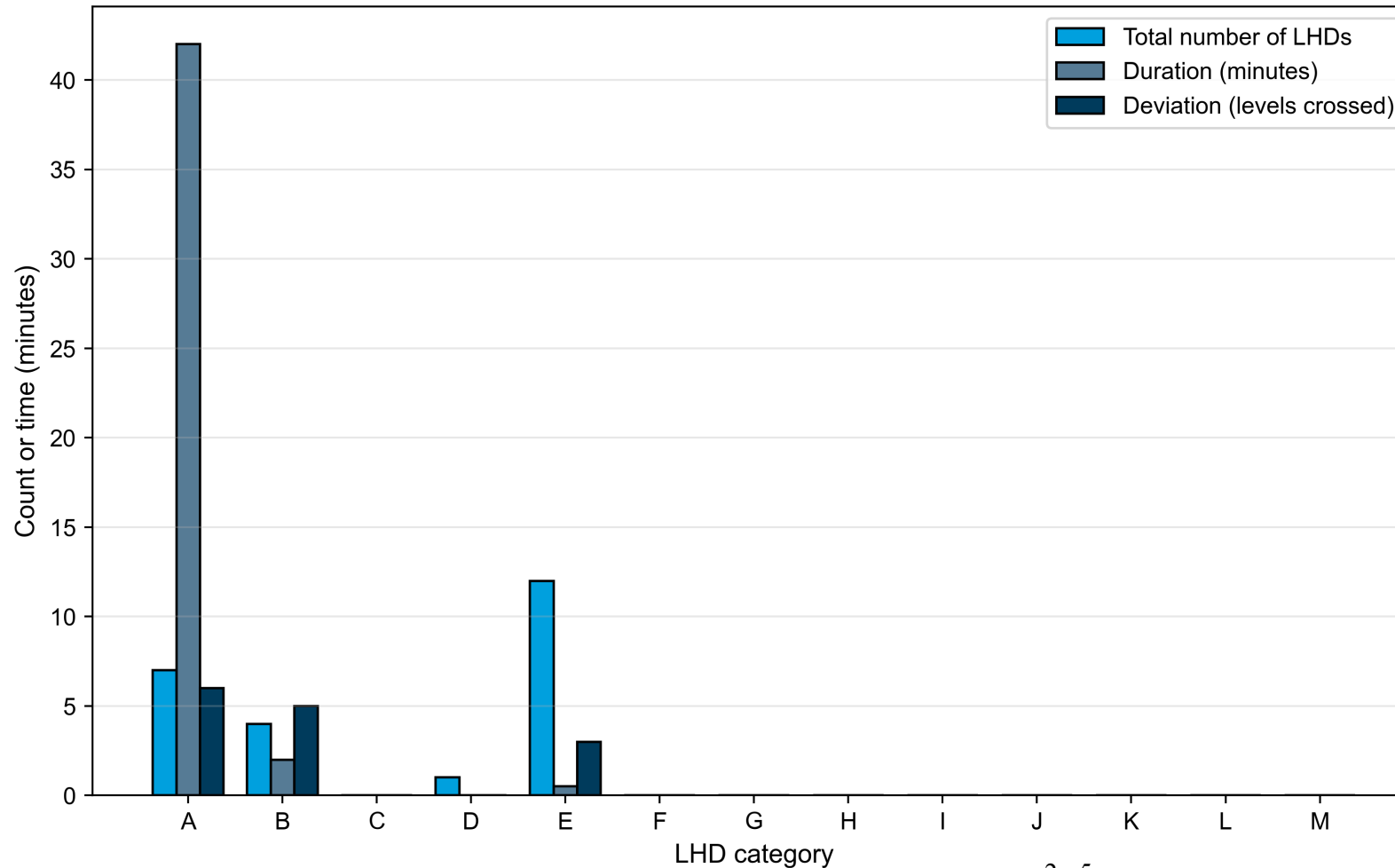
GEOLOCATION

Geolocation of LHDs by Category Code 1 January 2017 to 31 December 2021



LHD CAUSES

LHD Category Codes on the Melbourne-Colombo FIR interface
1 January 2017 to 31 December 2021



- Of these, 4 involved the Indian Navy
- Colombo was the transferring unit in 11 of these
- Melbourne was the transferring unit in 2 events

DETAILS OF OCCURRENCES INVOLVING INDIAN NAVY

Date	Category Code	Assigned FL	Observed FL	Minutes or levels	Description
19 August 2017	A	FL310	FL250	2 levels	The aircraft had flight planned to operate in an exercise area within the Colombo and Melbourne FIRs. However, during this time, communication with the aircraft was marginal in HF, and there was a lack of a specific position report or accurate area of operation. It is not known when the aircraft descended from FL310 to FL250.
22 September 2018	B	FL310	FL280	1 minute	Colombo ATC correctly coordinated aircraft at FL310, which was confirmed by aircraft reported estimate. The aircraft actually crossed into Melbourne FIR at FL280.
23 September 2018	A	FL310	FL290	41 minutes	<p>Multiple planning and operational issues:</p> <ul style="list-style-type: none"> Planned NISOK L774 ELATI - ELATI not on route L774 Position report for PIPOV received late Reported at level that was different to what was expected (coordinated) (reported at F300 - coordinated level F310) Proposed inconsistent tracking point Tracked via waypoint different to reported tracking. <p>The event was assessed as 41 minutes duration based on the time reported at KETIV (closest known location to the boundary) and the time contact was established with the aircraft.</p>
24 September 2018	B	FL320	FL280	3 levels	The aircraft crossed into Melbourne FIR at ELATI at FL320 with no contact on HF. 10 minutes later the aircraft reported descent to FL250 without a clearance. 12 minutes later the aircraft changed their airwork area in the flight plan without notice.

DETAILS OF RECENT OCCURRENCES

Date	Category Code	Assigned FL	Observed FL	Minutes or levels	Description
13 December 2020	A	FL380	FL370	1 level	Melbourne ATC coordinated aircraft at FL380 at DOGAR to Colombo ATC. The aircraft was given a requirement to climb to FL380 4 minutes prior to estimate DOGAR, but reached the requirement 7 minutes late.
28 May 2021	E	FL380	FL400	0.5 minutes	Colombo ATC issued FL400 without prior coordination with Melbourne ATC.

ADDITIONAL OCCURRENCES

Date	Category Code	Type of event	Minutes or deviation	Location	Description
16 January 2019	A	LLE	3 minutes	ELATI	The aircraft reported with an estimate for ELATI without a flight plan.
1 April 2019	A	LLD	4 minutes	KADAP	The aircraft was coordinated by Colombo ATC to Melbourne ATC with a certain area of operation. The aircraft then flew in a different area of operation, which Melbourne ATC were unable to ascertain. The aircraft advised a change in FIR exit point from ALVES to KADAP including a significant estimate change. Melbourne ATC coordinated the new information to Colombo ATC.
8 April 2019	A	LLD	120 NM	POSOD	The aircraft did not track according to flight plan, creating coordination difficulties between Colombo, Melbourne and Jakarta.
3 June 2019	A	LLD	18 minutes	AKUKO	The aircraft executed multiple flight plan amendments via HF, but subsequently failed to fly the new route and reported at locations where they were not cleared.

From: [maar](#)
To: [daw@dgca.nic.in](#); [Shri DEVULA MUDEVATH](#); [pankaj.dgca@gov.in](#); [Tuhinanshu](#)
Cc: [bobasmachennai@gmail.com](#); [Saifon Obromsook](#); [AAMA](#); [Amelia Gontar](#); [Steve Barry](#); [Mary D"Souza](#)
Subject: Point of contact for the Indian Navy in regard of the operational errors
Date: Wednesday, 16 March 2022 5:18:26 PM
Attachments: [Indian Navy letter_v02.pdf](#)
[AAMA Hot Spot M.pdf](#)

Dear Mr. Devula and all concerns:

During the RASMAG meeting in 2019, the Australian Airspace Monitoring Agency (AAMA), which is the RMA responsible for the airspace of Australia, Indonesia, Nauru, Papua New Guinea and Solomon Island, presented to the meeting that there has been a high number of operational errors observed on the Colombo — Melbourne Flight Information Region (FIR) interface. During the year 2017 - 2019, eight operational errors involved the Indian Navy which contributed to a large proportion of the risk.

AAMA is tasked with developing and implementing mitigation measures for the risk at this Hot Spot. There is, however, one outstanding mitigation measure that has been discussed across various meetings. The mitigation is for AAMA to maintain a suitable point of contact for the Indian Navy to ensure that a proper communication can take place to address these operational errors. AAMA provided the letter (attached with this email) to explain their intent and the details of these operational errors.

Would it be possible for you to help liaise with the Indian Navy to obtain such point of contact? Your assistance on the matter would be greatly appreciated.

Thank you and Best Regards,

Rinthida Jorntes

MAAR Coordinator

Tel: +662-287-8608

Fax: +662-287-8155

Website: www.aerothai.co.th/maar