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**TRANSCRIPT OF PROCEEDINGS  
TRANSCRIPT-IN-CONFIDENCE**

**INSPECTOR-GENERAL AUSTRALIAN DEFENCE FORCE  
INQUIRY INTO THE CRASH OF A MRH-90 TAIPAN  
HELICOPTER IN WATERS NEAR LINDEMAN ISLAND  
ON 28 JULY 2023**

**PUBLIC INQUIRY**

**THE HONOURABLE M McMURDO AC  
AVM G HARLAND AM CSC DSM**

**COL J STREIT, with FLTLT A ROSE, Counsel Assisting**

**LCDR M GRACIE, representing CAPT D Lyon  
SQNLDR J GILES, representing LT M Nugent  
MAJ H PERROTTET, with Lcdr M TYSON, representing  
CPL A Naggs**

**SQNLDR C THOMPSON, representing WO2 J P Laycock  
COL N GABBEDY, representing MAJGEN Jobson  
MR G O'MAHONEY, representing Airbus and related entities  
SQNLDR M NICOLSON, representing D10**

**1000, MONDAY, 29 APRIL 2024**

**DAY TWO**

**TRANSCRIPT VERIFICATION**

**I hereby certify that the following transcript was made from the sound recording of the  
above stated case and is true and accurate**

<b>Signed</b> .....	<b>Date</b> .....	(Chair)
<b>Signed</b> .....	<b>Date</b> .....	(Recorder)
<b>Signed</b> Epiq Australia Pty Ltd	<b>Date</b> 14/05/24	(Transcriber)

# **EXHIBIT LIST**

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MS McMURDO: I acknowledge the traditional owners of this land, the Turrbal and Jagera people, and pay my respects to their elders, past and present. In commencing the first day of the second block of hearings of this Inquiry, it is important and a privilege as Australians to remember that for  
5 tens of thousands of years our First Nations people held meetings on this land to work out ways to do things better in their community, as we are doing today.

The Inquiry has been busy since our inaugural hearing. You will notice that  
10 I'm accompanied today by Assistant Inspector-General ADF, AVM Geoffrey Harland, not AVM Joe Iervasi. Unfortunately, AVM Iervasi became aware of a potential conflict that may have led to concerns of perceived bias. So as not to compromise this Inquiry, AVM Iervasi has thoughtfully stepped aside from it. I sincerely thank the  
15 Air Vice-Marshal for his integrity and warmly thank him for the work he did.

Well, that was the bad news, but there is good news. Fortunately, the Inquiry is now being ably assisted by another talented Assistant  
20 Inspector-General ADF, AVM Geoffrey Harland. I know he will be a great asset to the Inquiry as we continue to seek the cause of the helicopter crash on 28 July last year and to understand how such a devastating loss of talented aircrew might be avoided in future. I'm very much looking forward to working with AVM Harland.

25 As a result, on 5 April 2024 the Inspector-General ADF amended the original Inquiry Directions read at our first hearing. The amendment was in these terms:

30 *(1) This Instrument amends the Inquiry Directions IGADF VN71787985 I signed on 31 October 2023. Except for the amendments set out in subparagraphs 2a and 2b below, all other aspects of those Directions remain unchanged.*

35 *Under sections 10(2) and (5) of the Inspector-General of the Australian Defence Force Regulation 2016, I confirm the following Directions and authorisations:*

40 *(a) AVM Joe Iervasi is removed from the Inquiry with effect 7 March 2024;*

*(b) AVM Geoffrey Harland is appointed to the Inquiry with effect 25 March 2024 to help the Honourable Margaret McMurdo AC, who leads the Inquiry.*

45

*Signed J M Gaynor CSC, Inspector-General of the Australian  
Defence Force, 5 April 2024.*

5 Before AVM Harland addresses you, there are some other important  
matters I want to raise. This Inquiry respects the critical democratic role of  
the media in helping to shine a light on flaws within our community  
institutions.

10 Many of you would have seen last Sunday's 60 Minutes program which  
discussed the crash the subject of this Inquiry. The program raised  
significant issues of central concern to this Inquiry including: delays in  
providing information to families of ADF personnel who lost their lives in  
the service of Australia; whether the ADF ignored 2020 warnings about the  
15 safety of the TopOwl night-vision visors used by the deceased aircrew  
following a software update; and the role of the Defence Flight Safety  
Bureau and Comcare in approving the safety during challenging flying  
conditions of the TopOwl visors with the 2020 software update.

20 I assure the families, friends and former colleagues of CAPT Danniell Lyon,  
LT Maxwell Nugent, WO2 Joseph Laycock and CPL Alexander Naggs and  
the public that this Inquiry will thoroughly investigate those and other  
relevant issues.

25 So far the Inquiry has received 19 very helpful submissions. I thank  
everyone who has now made a submission. Each submission is being  
carefully considered as we build a talented Inquiry team. I again encourage  
anyone with information relevant to our work to make a submission through  
our website. Submissions can be confidential or even anonymous. We  
cannot act on what we do not know.

30 As I was preparing for this week's hearings, I learnt that at least one family  
member has expressed disappointment that this Inquiry has not given its  
view as to the cause of the crash we are investigating. I understand that to  
some that might seem puzzling, but this Inquiry is in its early stages. It is  
35 essential to keep an open mind until the Inquiry has assessed all the relevant  
evidence and completed its report.

40 Although this Inquiry has compulsory powers and is independent of the  
usual ADF chain of command, it does sometimes take time for us to obtain  
the relevant evidence. We too can find this challenging and disappointing.  
For example, one important piece of evidence is likely to be the Defence  
Flight Safety Bureau final report, which is not yet completed. Nor do we  
have the relevant material we have requested from Comcare, although our  
request was some weeks ago.

45

As I mentioned earlier, we are still receiving submissions. We have many witnesses yet to interview and documents yet to examine. Until we receive and assess all this evidence, consider all submissions, give potentially affected persons an opportunity to respond to possible findings, and ultimately write and submit our report, it would be wrong for us in this Inquiry to express a view, even a preliminary one, as to the cause of the crash. If we did, the Inquiry could be at risk of being closed down for bias.

We are endeavouring to conduct this Inquiry in a trauma-informed way, especially for the benefit of families, friends and former colleagues of the deceased aircrew. This will sometimes mean having to balance competing wishes and interests, including the public interest, in having a transparent, timely and thorough inquiry into the cause of the crash.

I am sincerely sorry that the Inquiry has not done better in explaining this, and perhaps other matters of concern, to family members. We will certainly try to do better.

I now invite AVM Harland to address you.

AVM HARLAND: Thank you, Ms McMurdo, for the opportunity to say a few opening remarks and to introduce myself to the Inquiry. I aim to support this important inquiry by applying my experience in operational flying, aviation safety, airworthiness regulation and training and consider it a significant responsibility.

My aviation career spans flying roles, including maritime surveillance, strike and air combat, and I have flown P-3C Orion, F-111C and G models and F/A-18F Super Hornet. During my operational career, I have operated day and night and at low and medium level in a highly dynamic environment. I was also engaged in the introduction to Service and operational test and evaluation of the F-111G and have participated in a large range of military exercises, including Exercise TALISMAN SABRE.

I have held command at various levels, including Squadron, wing and group command, and most recently I was Commander of a multinational headquarters in Malaysia. I have also held staff appointments in aviation capability management and capability development, Aviation Safety Regulation and airworthiness and personnel. I have also worked closely with Army when I was posted as the divisional Air Liaison Officer at 1 Division, Deployable Joint Force Headquarters. In addition, during mid-career break from Air Force, I spent almost two years working at the Civil Aviation Safety Authority.

5 I am aware that military aviation is not without risk. I have personally lost friends who have tragically died in military aviation accidents. Only this month I attended with friends and family a 25th anniversary memorial to two friends who were lost when their F-111G crashed into an island in the South China Sea. It was a solemn and moving service and it reinforced the magnitude of such a tragic loss to me, and the importance of community.

10 Since that accident, the ADF has significantly improved how it manages aviation risk and the inquiry process after accidents, and must continue to strive for more improvements.

15 My experience should assist me to contribute to this Inquiry and to satisfy the Directions given by the Inspector-General of the ADF. We have a duty and an obligation to inquire into the deaths of CAPT Lyon, LT Nugent, WO2 Laycock and CPL Naggs. This will be a challenging process for all and our aim is to sensitively explore what happened and to determine, to the best extent possible, why it happened.

20 To be successful, we will need the support and engagement of all involved. It will be necessary to ask difficult questions and we ask that you assist us to determine the circumstances leading to the accident to enable the ADF to reduce the risk of future accidents. We owe that to the crew of Bushman 83, family and friends and ADF aviators present and future.

25 If you have information that will be relevant to this Inquiry, you have a voice and I ask that you leave nothing unsaid. Ms McMurdo.

30 MS McMURDO: Thank you, Air Vice Marshal. I have made a non-publication Direction in respect of some matters. I'll read that formally into the record now.

35 *Pursuant to sections 21(1)-(2) and 28M(1)-(2) of the Inspector-General of the Australian Defence Force Regulation 2016, and upon the ground that it is necessary to do so in the interests of the defence of the Commonwealth, I direct that:*

40 *There be no publication or other disclosure of the real names of the persons listed in the first column of the table in Annexure A;*

45 *The persons listed in the first column of the table in Annexure A be referred to in this Inquiry by the pseudonyms assigned to them in the second column of the table in Annexure A. And this Direction applies throughout the Commonwealth for a period of 50 years.*

5 Reasons: I have read the applications made by Special Operations Command on 26 February 2024 and 24 April 2024, and the applications made by Aviation Command on 12 March 2024 and 23 April 2024, and noted the pseudonyms they used for specified Defence personnel.

10 I am satisfied it's necessary to make this Direction to protect the identities of Defence personnel currently posted to 6 Aviation Regiment and Special Operations Command or who were posted to 6 Aviation Regiment and Special Operations Command at the time of the incident the subject of the Inquiry who are or were associated with sensitive capabilities.

15 This Direction is to protect against unauthorised disclosures of the personal information of the persons whose real names are listed in the first column of Annexure A, information regarding their association with the sensitive capability, and the sensitive capability itself. This Direction is consistent with the Defence Security Principles Framework Control, 42.1, Protected Identities.

20 A copy of that Direction, with appropriate redactions, will be placed on the website shortly.

25 Although in this week's hearing I'm not expecting any of the 53 people given pseudonyms in that Direction to be giving evidence, it is likely that people giving evidence in this hearing block will refer to people with those pseudonyms, and the list of pseudonyms will be available to witnesses while in the witness box. If a name instead of a pseudonym is inadvertently mentioned, I'll make a further non-publication order. The two-minute delay in streaming should ensure the name is not live-streamed. I emphasise that  
30 it is an offence to publish the name of a person assigned a pseudonym.

I understand there are some further applications today for leave to appear?

35 COL GABBEDY: Morning, ma'am. Morning, sir. I'm - - -

MS McMURDO: Perhaps if you could come to the microphone, just to make sure that it's recorded. Otherwise it might be difficult to be recorded.

40 COL GABBEDY: Sorry, I appear to have jumped in in front of my colleagues, I apologise for that. Morning, ma'am. Morning, sir. I'm Nigel Gabbedy, I'm an Australian legal practitioner. I'm seeking leave to appear for MAJGEN Jobson, the Commander of Army Aviation. He's received a notice indicating he may be potentially affected.

45 MS McMURDO: Thank you. Did you want to say anything, Mr Streit?



COL STREIT: No, thank you.

5 MS McMURDO: Does anybody else want to be heard on this? No. It's appropriate for you to have leave to appear in respect of MAJGEN Jobson. Thank you, Mr Gabbedy.

COL GABBEDY: Thank you, ma'am.

10 LCDR TYSON: Ma'am, sir, my name is LCDR Matthew Tyson. I seek leave to appear as co-counsel on behalf of the deceased member CPL Alexander Naggs, and I can confirm that I did forward a written application late last week for leave to appear, through to Counsel Assisting.

15 MS McMURDO: Yes, thank you, Mr Tyson. Anything from Counsel Assisting?

COL STREIT: No, thank you.

20 MS McMURDO: Anyone else want to be heard on this? No. Thank you, LCDR Tyson, your leave to appear is granted.

25 MR O'MAHONEY: Ms McMurdo and Air Vice Marshal, my name is O'Mahoney, initial G. I seek leave to appear for Airbus and related entities, instructed by Mr Humphries from Norton White.

MS McMURDO: Does Counsel Assisting want to be heard on this?

30 COL STREIT: No, thank you.

MS McMURDO: Anyone else want to be heard? No. Thank you, Mr O'Mahoney, leave to appear is granted.

35 MR O'MAHONEY: Thank you.

40 SQNLDR NICOLSON: Good morning, Ms McMurdo, sir. My name is Michael Nicolson, I'm a barrister in Queensland. I'm also a reserve legal officer. I seek leave to appear on behalf of D10 in these proceedings. And I have forwarded a written application to you, Ms McMurdo.

MS McMURDO: Sorry, you're appearing on behalf of?

SQNLDR NICOLSON: D10.

45 MS McMURDO: D10, thank you. Anything from Counsel Assisting?

COL STREIT: No, thank you.

5 MS McMURDO: Anything from anyone else? It's appropriate that you have leave to appear. Thank you, SQNLDR Nicolson.

SQNLDR NICOLSON: Thank you.

10 LEUT CLUTTERBUCK: Yes, good morning, ma'am. Morning, sir. My name is Russ Clutterbuck of counsel, I'm instructed by the Director of Defence Counsel Services. My application is for leave to appear, but indiscriminately, with respect to the interests that may be affected of various serving members.

15 MS McMURDO: So you would be appearing on behalf of – you're instructed by Defence Counsel Services?

LEUT CLUTTERBUCK: Yes. Effectively, ma'am, I'm a legal – performing a role of legal aid for - - -

20 MS McMURDO: Right. And you would be appearing for?

LEUT CLUTTERBUCK: A number of – and I cannot specify who at this particular point in time – of serving personnel who are witnesses before the Inquiry who may require legal advice; and, for example, there may be some short issues that might arise requiring my appearance. So my - - -

MS McMURDO: So would it not be better, when they arise, to apply for leave at that point?

30 LEUT CLUTTERBUCK: Absolutely. Quite happy to do so.

MS McMURDO: I'll see what Counsel Assisting says. Mr Streit?

35 COL STREIT: That would be my submission.

MS McMURDO: Yes. I think, Mr Clutterbuck, it'd be more appropriate, if and when that arises, that you then apply for leave to appear.

40 LEUT CLUTTERBUCK: Will do. Thank you.

MS McMURDO: Thank you. So are we dealing now with the application for family witnesses to remain in the hearing room? Is that the next matter? No. First of all, yes, you're going to make some opening remarks. Thank you, Mr Streit.

45

COL STREIT: Thank you, Ms McMurdo. With the Inquiry's permission, I will make some brief remarks as to the purpose of this week's hearing phase, including identifying witnesses to be called.

5

Bushman 83 is the callsign of the MRH-90 Taipan aircraft in which CAPT Lyon, LT Nugent, WO2 Laycock and CPL Naggs were flying in at night on 28 July 2023. In my opening address on 27 February 2024, I observed that the Inquiry is required to examine relevant matters before the crash of Bushman 83. Those matters are referred to as pre-incident in the Inquiry Directions. Examining these matters will provide the Inquiry with important evidence to assist in considering ultimately what might be the possible causes of the crash.

15 One of the important pre-incident matters to examine is the training provided by the ADF to MRH-90 pilots and aircrewman prior to 28 July 2023. This is relevant, in part, to the Inquiry's consideration of the training provided to members of 6 Aviation Regiment and, in particular, the aircrew of Bushman 83.

20

With this in mind, evidence to be called this week will continue the Inquiry's examination of training of MRH-90 pilots and aircrewman at 5 Aviation Regiment during the period 2022/23. The Inquiry will also commence hearing evidence about the maintenance of MRH-90 aircraft, including evidence about maintenance training provided to the ADF members at the Army Aviation Training Centre.

25

This week the Inquiry will begin hearing evidence relevant to the post-incident matters, including the involvement of the Queensland Police Service in the recovery operation after the crash of Bushman 83.

30

Important evidence will also be led from four witnesses who are family members of CAPT Lyon, LT Nugent and CPL Naggs. Their evidence will inform the Inquiry, in a very human way, of their knowledge of their loved ones in which Bushman 83 participated. Their evidence will also address their experiences of the notification process of the deaths of their loved ones, and other closely related events.

35

As I mentioned in my opening address on 27 February 2024, an Aviation Safety Investigation Team from the Defence Flight Safety Bureau was appointed to investigate the crash of Bushman 83. The aviation safety investigation is a separate and independent investigation to the Inquiry. It is Counsel Assisting's present intention to call representatives of the Defence Flight Safety Bureau to give evidence to the Inquiry after their investigation is completed.

45

Witnesses to be called this week are: CAPT Andrew Balaam, who will continue his evidence from 27 February 2024; WO2 Karl Thomas, a qualified aircrewman instructor on MRH-90 at 5 Aviation Regiment in 2022; MAJ Michael Perkins, a Category A Qualified Flying Instructor on MRH-90 and previous Regiment Standards Officer at 5 Aviation Regiment for the MRH-90; Mr Daniel Nugent, the father of LT Max Nugent; Ms Chadine Whyte, the partner of LT Max Nugent; Ms Sarah Loft, the partner of CPL Alexander Naggs; Mrs Caitland Lyon, the wife of CAPT Danniell Lyon; Mr Barry Trapp, a representative of Airbus Australia Pacific Limited; Senior Constable Joseph Cook, a Queensland Police Forensic Crash Unit investigator; LTCOL Rick Watling, the Commanding Officer of Rotary Wing Maintenance School at the Army Aviation Training Centre; MAJ Harry More, the Officer Commanding of the Logistics Support Squadron at 5 Aviation Regiment; LTCOL Christopher McDougall, the Commanding Officer of 5 Aviation Regiment in 2021/2022; and LTCOL Andrew Lean, the current Commanding Officer of 5 Aviation Regiment.

One matter I wish to draw to the Inquiry's attention is the correction of a matter that was put in a question by the Inquiry to a witness. The premise of the question that was asked of LTCOL Cameron during his evidence on 27 February 2024 was incorrect; that is, the premise was incorrect. The question appears at transcript page 71, commencing at line 21 of the transcript of 27 February 2024. The premise of the question asked by the Inquiry was at the time of the crash of Bushman 83 on 28 July 2023 there were 17 outstanding action items arising from a Defence Flight Safety Bureau investigation into a 2020 near collision in Townsville between two MRH-90 aircraft.

A check of the information obtained by the Inquiry reflects that there were in fact 10 action items not completed and not 17, as the question suggested. I apologise on behalf of the Inquiry to LTCOL Cameron for that error in the question.

Evidence will be led in the Inquiry hearings in relation to the implementation of all action items arising from the Defence Flight Safety Bureau investigation into the 2020 near collision in Townsville between two MRH-90 aircraft.

May I now turn, Ms McMurdo, to seek to tender a transcript of the 60 Minutes program on 21 April 2024 in relation to the MRH-90. The Inquiry has also received a video link to the program itself, and I also tender that link as part of the tender of the transcript.

MS McMURDO: The transcript and video link will be Exhibit 6A and B.

5 **#EXHIBIT 6A - TRANSCRIPT TO 60 MINUTES PROGRAM  
DATED 21/04/24**

10 **#EXHIBIT 6B - VIDEO LINK TO 60 MINUTES PROGRAM  
DATED 21/04/24**

COL STREIT: Ms McMurdo, that concludes my opening remarks. I do have four applications to bring to the Inquiry's attention, if I may.

15 MS McMURDO: Yes, thank you.

20 COL STREIT: Counsel assisting has received information from four family members who wish to apply for permission to remain in the hearing room to listen to the evidence of other witnesses before they are called to give evidence. The applications are made by Mr Daniel Nugent, Ms Chadine Whyte, Ms Sarah Loft and Mrs Caitland Lyon, all of whom are not legally represented. As such, Counsel Assisting brings the applications before the Inquiry.

25 Unless permission is given, the ordinary rule is that a witness is not permitted to be present when another witness is giving evidence. The rule concerns protecting the integrity of evidence before the Inquiry, and is to avoid the potential risk that a prospective witness may be influenced by the evidence of another witness about a matter which they are, too, being called  
30 to give evidence. The rule is reflected in the Inquiries Procedure for the Conduct of Hearings at paragraph 23 of the Inquiry Practice Note, which provides:

35 *Any person who is likely to be a witness at the Inquiry is not to be present while another witness gives evidence to the Inquiry, unless given leave to be present at that time.*

40 The statements of all four family witnesses have been provided to those counsel representing/acting for potentially affected persons, and those acting for the reputational interests of the deceased aircrew. Having regard to those statements of the family members, I do not consider there is a risk to the integrity of the evidence to be led before the Inquiry, such that the ordinary rule should be enforced concerning the family witnesses' applications. Adopting a trauma informed approach, and noting that the  
45 four family witnesses are participating in the Inquiry, I support their

applications. I have no objections to them remaining in the hearing room to listen to the evidence of other witnesses before they too are called to give evidence.

5 I invite the Inquiry to hear submissions from counsel representing, should they wish to be heard on any of the applications.

MS McMURDO: Does anyone want to make any submissions against me granting the application?

10

UNIDENTIFIED SPEAKER: Not against, ma'am, no.

MS McMURDO: No. Well, it's entirely appropriate. Sorry, there is an application? Yes.

15

COL GABBEDY: It's not an application. I've elected – I don't rise to oppose, ma'am, but I do rise to echo some of the matters raised by Counsel Assisting in terms of the reason for the rule, and the risk occasioned by circumventing the rule. I can only assume, but I think it would be wise for you to point out as well, the risk to the family members who wish to stay – and I totally understand why they would like to stay – that evidence that they may later give that falls outside of their written statements may be seen to have lesser weight, and I would be concerned if that adversely impacted on the family members. So I rise only to raise that concern, but not to oppose the application.

20

25

MS McMURDO: No, that's a very legitimate point to make, and is it one that Counsel Assisting has raised with the family members?

30

COL STREIT: I haven't raised that point with the family members, Ms McMurdo.

MS McMURDO: If I could just address the family members who have made the application. COL Gabbedy raises the point that it's true that if you sit in throughout the evidence – which you obviously would want to do; I understand that, and it is entirely understandable and appropriate that you would do so – if later on you've sat through all the evidence and then you want to give evidence about something else, it may be argued by some people that your evidence should be given less weight because you've sat in and heard all the evidence that has been said before and you've had the advantage of knowing what you want to contradict. And I can see some people nodding, so I think that that is understood.

35

40

LCDR GRACIE: Ma'am, in relation to Mrs Lyon, I have discussed that with her. I represent the deceased CAPT Lyon.

45

MS McMURDO: Yes.

5 LCDR GRACIE: Ma'am, the matter was given some careful consideration,  
and I also raised it in an email with the Counsel Assisting. But it seems to  
me that there are two aspects to the evidence from the family members.  
One is their personal dealings with the deceased. That doesn't seem to be  
likely to have any impact in relation to subsequent evidence. The other is  
10 very much their opinions in terms of the concerns that they have raised  
about various matters. Again, given that it's opinions and it's not really  
matters of fact, I don't see the problem that COL Gabbedy anticipating is  
likely to ever arise. It is opinion evidence, and in fact the exception to a  
witness sitting in evidence, hearing someone else's evidence, is often  
subject to whether it is opinion evidence; certainly in the case of experts.

15 I don't anticipate a problem, and to the extent that there might be an issue  
of weight, then that can be dealt with in submissions, but I wouldn't like to  
be, see that as being any impediment, or any concern of the families, by  
staying.

20 MS McMURDO: Thank you, LCDR Gracie. So that's the position, as I've  
explained to you, and if any of the family want some further clarification  
from me, or they want to change their application, could you just let Counsel  
Assisting know now. So I gather from the nodding heads and the lack of  
25 response that you'd all like to maintain your application. Yes.

So having considered the various matters, I am satisfied that it is entirely  
appropriate for the family witnesses to stay in the hearing room so that they  
can hear all the evidence in this Inquiry, wherever possible, and I grant the  
30 application.

COL STREIT: Thank you, Ms McMurdo. That concludes the preliminary  
matters that I had to raise with you. Subject to the Inquiry's concurrence  
and permission, I propose to call CAPT Balaam, but I understand that  
35 certain administrative matters might need to be attended to first, so I'm in  
your hands as to whether a short break should occur.

MS McMURDO: No, I think the cameras, other than the video streaming,  
40 have to be removed at this point, so I would ask that the cameras go at this  
point, and as soon as that's done – it will only take a minute or two, I hope  
– and as soon as that's done, we'll resume. I hope the livestreaming is  
working. Good. I heard that there were some issues with it.

45 COL STREIT: Thank you.

MS McMURDO: We will resume with CAPT Balaam's evidence, which is part-heard.

5 COL STREIT: Yes. I would only ask if there are any other witnesses, other than those with permission to be in this room, that those other witnesses remove themselves. The opening remarks have been concluded.

10 MS McMURDO: Thank you. CAPT Balaam doesn't need to go. He can come in.

<CAPT ANDREW BALAAM, recalled on former oath

15 <EXAMINATION-IN-CHIEF BY COL STREIT

MS McMURDO: You are still on your former oath. Yes, thank you.

20 COL STREIT: May I just have a moment, Ms McMurdo?

MS McMURDO: Of course.

25 COL STREIT: Ms McMurdo, I've been informed that a five-minute break has been requested to restore the livestream.

30 MS McMURDO: Has it been working at all this morning? Okay. We need a short adjournment. All right, best laid plans go astray. We'll adjourn for a few minutes to ensure the livestream is working.

**HEARING ADJOURNED**

35 **HEARING RESUMED**

MS McMURDO: Yes, COL Streit.

40 COL STREIT: Thank you, Ms McMurdo. CAPT Balaam, you last gave evidence before the Inquiry on 27 February 2024; is that correct?

CAPT BALAAM: That is correct.



COL STREIT: What I proposed to do was take you to the point where your evidence was adjourned. And we were dealing with matters concerning TopOwl, and your involvement in a study or a process by which an assessment was made as to the advantages and disadvantages of upgrading the TopOwl software to a new version.

So what I'm going to do is just read to you my last question I asked you, and your response, and then I'll ask you some further questions from there so you understand, as a matter of fairness, where your evidence finished. Question – this is on page 131 of the transcript at line 43 – question by me:

*So the discussion there was in relation to the flight instrument symbology, particularly attitude reference, looking straight ahead, and how it differs when you look – particularly in extremes – left and right. Can you just talk us through what that is?*

Your response:

*Right. As I said, we had version 4. We were looking for solutions to essentially patch some of the weaknesses of version 4 symbols, so version 5.10 came along and it gave us what we wanted. On one of the issues with 5.1 – you get nothing for free in this world – was when you look straight ahead and you put in an angle of bank – so 30 degrees – what you saw was what you got.*

*If you turned your head through 90 degrees to 120 degrees either side, that angle of bank washed out. So if you were holding 30 degrees angle of bank, the angle of bank displayed in your symbols would be about 23-25 degrees.*

It was at that point that Ms McMurdo needed to bring the proceedings to a conclusion, due to the availability of the livestream, so it's at that juncture of your evidence I wish to continue with my questions.

First, can you just assist the Inquiry by explaining when you're talking about weaknesses of version 4 symbols, and then the consideration of version 5.1 software for the TopOwl came along. What particular weaknesses did you have in mind when you gave that evidence back on 27 February?

CAPT BALAAM: Just one point, just to complete.

COL STREIT: Yes.

CAPT BALAAM: You had a 23 to 25 degree error, so there is one word missing, just “error”. So, for example, if you had a 30 degree angle of bank indication straight ahead, that would washout to about five to seven degrees if you were in the 90 degree offset.

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COL STREIT: I understand. I’ll certainly return to the issue of information washing out and what that means, but can I just begin my questions by asking you when you talked about – or gave evidence, rather, about weaknesses of version 4 symbols on 27 February this year, what was it you had in mind constituted weaknesses?

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CAPT BALAAM: The weaknesses was the fact that the angle of bank washed out, so you weren’t given a true indication of the angle of bank that you were holding, if you looked offset to the 90 degrees either side. It was an undesirable feature of version 5.10.

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COL STREIT: So if we were to break it down into its constituent parts, and if I give you a description, please indicate if it’s accurate or inaccurate. So a pilot using TopOwl in their helmet at night, using version 4, if they were looking straight ahead, certain information would be displayed. Is that correct?

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CAPT BALAAM: Correct. The aircraft attitude would be displayed, looking straight ahead. Once you went off-boresight, that attitude disappeared the pitch.

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COL STREIT: So if I’m a pilot, I’m wearing a TopOwl helmet, I’m flying an aircraft at 500 feet above the ground on straight and level flight, and I’m travelling at night, when I look straight ahead the TopOwl device is giving me information on the screen that I’m looking through. Is that right?

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CAPT BALAAM: Correct, and that is true.

COL STREIT: If, for whatever reason, I continue flying the aircraft level at 500 feet and I turned my head to the right, to look out the window at 90 degrees, what happens to the information that I am seeing through the TopOwl device?

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CAPT BALAAM: You would get an error in angle of bank. I couldn’t tell you off the top of my head what it would look like, but I know for a fact that if you held a 30 degree angle of bank, it would washout by 23 to 25 degrees if you held your head at 90 degrees.

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But we don’t fly like that. Pilots are not taught to fly adjusting their angle of bank, looking into the turn, because there’s human factors, pitfalls there,

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the human vestibular system: your perception of the angle of bank is severely altered if you do that. So we're trained to look straight ahead, along the longitudinal axis of the aircraft, to make any angle of bank changes in the turn.

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Now, we're taught from the outset that power plus attitude equals performance. So the power you set and the attitude you set will give you what you desire. We're not taught to look into the turn to adjust angles of bank.

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COL STREIT: I understand that. I'm simply seeking to lead evidence from you about what, if I was flying an aircraft, I would see if I turned to the right. And you described it as there'd be washout, but what does that mean?

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CAPT BALAAM: Basically, if you were holding say, a 30 degree angle of bank, the angle of bank that you would see, what would be presented to you, would say be five to seven degrees. So essentially, it would indicate you were under-banking, when in reality you would be holding a 30 degree angle of bank.

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COL STREIT: In the cockpit itself, obviously you have the canopy of windows which allow you to see out the front of the aircraft; that's correct?

CAPT BALAAM: Correct.

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COL STREIT: But you also have windows that you can see out to the side, to a certain degree; is that right?

CAPT BALAAM: Correct.

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COL STREIT: So in terms of the effect of washout, if I'm flying straight and level at 500 feet at night, and I simply keep the aircraft with those conditions, and I simply move my head to the right 90 degrees to look out the window, because I'm aware there may be another aircraft in formation near that position out the window, I'm experiencing a washout of information on TopOwl?

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CAPT BALAAM: That's correct.

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COL STREIT: Given back to me?

CAPT BALAAM: Yes, your angle of bank will be in error, but the horizon will be true.

COL STREIT: Is there any other effect? So if there was something out the window, like another aircraft, is there - - -

5 CAPT BALAAM: You would be able to see the aircraft; it was just that one angle of bank indication that would be in error. You would still be able to see through the symbols. Cockpit architecture aside, you should be able to see any other aircraft within your arc.

10 COL STREIT: From that position at that right angle, still flying in the terms I mentioned before, 500 feet, straight and level, and hadn't altered anything or any inputs to the aircraft, if I then rotate my head back to north, the symbology returns, does it?

15 CAPT BALAAM: The symbols would remain there, but the error would be removed. So if you had a 30 degree angle of bank, you would go back to seeing 30 degrees angle of bank.

20 COL STREIT: So if I had a concern about the information that TopOwl was providing to me, if I had my head turned to the right at 90 degrees, is it the case to remedy that very quickly is just to turn my head back to north, to look out the aircraft?

25 CAPT BALAAM: Correct. You would refer to your primary flight display, hence the term "primary flight display"; that is your main instrument set. We are deliberately taught not to adjust angles of bank whilst looking into the turn because there's a human factors track there which, regardless of what any technologies you put in place, we will always be susceptible to, and that is known as the G-excess illusion:

30 If you turn your head and then try and adjust your angle of bank whilst pulling G, your body will sense an error. So, for example, if you're pulling 1.4 Gs, 45 degree angle of bank turn, your body will perceive a five to 10 degree error, so your body will think you're at sort of 30 to 35 degrees, when in reality you'll be at 45 degrees. There is nothing you can do about it.

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Same, same, if you're at a 2 G turn, 60 degree angle of bank, your body will experience a 10 to 20 degree error. So you could be at 60 degrees, but your body will think you're at 40 degrees.

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And that is known, and that is inculcated in all our training. From the time you start pilot training, we are taught if we are in a turn, power plus attitude equals performance. And there is a work cycle which is attitude out the front, along the longitudinal axis; look into the turn to see where you're going for obstacles, back to your attitude, and then performance; adjust the

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parameters, your power, to make sure you maintain level speed of the turn. So attitude, the look out, attitude, performance.

5 The look out is always framed by attitude, along the X axis or the longitudinal access, because of this G-excess illusion. That is taught through basic flight training, Joint Helicopter School, and also in your operational type transitions. It's in all our standards manuals, because the Army got burnt by this illusion about 20 years ago: Black Hawk 216. One of the contributory factors was assessed to be the G-excess illusion, so we are acutely aware of this issue. So we are taught always to adjust your attitude whilst looking straight ahead to avoid this issue, particularly at low level.

15 COL STREIT: Thank you. I'm just going to alter the scenario I suggested to you earlier, where I indicated flying straight and level at 500 feet. I'm going to suggest to you a scenario flying straight and level at 500 feet, and then climbing at an angle of 30 degrees. If I was to then turn my head to the right at 90 degrees and look out the window again, after I'd made that input to climb at 30 degrees, what would be the effect of the washout from TopOwl?

25 CAPT BALAAM: I couldn't say; you'd have to do some pretty extensive testing in that space. But what I do know, there would be an error, you wouldn't be given a true indication of your angle of bank.

COL STREIT: So the information that TopOwl would provide to me, when my head is turned to the right - - -

30 CAPT BALAAM: Would be an error.

COL STREIT: - - - would be an error?

CAPT BALAAM: Correct.

35 COL STREIT: In terms of the angle of bank?

CAPT BALAAM: Yes.

40 COL STREIT: As the pilot, to, knowing that, if I knew that, to then identify through the symbology to confirm what the angle of bank is, I would need to return my head to the north position?

45 CAPT BALAAM: To the primary flight display, to make sure that your angle of bank was correct. And that's how we were trained, because of the G-excess illusion.

COL STREIT: Thank you.

AVM HARLAND: COL Streit, if I could?

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COL STREIT: Yes.

AVM HARLAND: CAPT Balaam, you said of course you move your head to the right and with TopOwl you do get that angle of bank washed out. Is there another indication, or is it just a known effect? So is there an error indication that comes up?

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CAPT BALAAM: No, it's just a known effect. And the way we used to teach our pilots to fly was either side of the cockpit by the doors is the cockpit frame; essentially, you use that as your left and right of arc. Once you saw that in your field of view, you're essentially at the edge of accuracy, for want of a better term, and to then basically know you were going into the error space.

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As I say, it was a known error, due to physiological reasons so there was never anywhere we went for attitude references, particularly angle of bank, because of the physiological error. There was already a trap there. Now there was a supplementary trap.

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AVM HARLAND: Understood. So if I'm to understand that correctly, the display remains as it normally would, but it indicates in error.

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CAPT BALAAM: Correct.

AVM HARLAND: And there are no captions that will say there is a problem?

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CAPT BALAAM: No.

AVM HARLAND: Okay. A final question: when you're flying in formation and you have an issue where you need to manoeuvre, my understanding would be that under NVDs you'd be clearing your flight path using the NVDs; is that correct?

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CAPT BALAAM: Correct. Augmented by other crew members – for example, the crewmen on the inside of the turn – you were basically turning right and then the crewmen would assist, where they could, to help you make that turn.

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5 AVM HARLAND: So could you walk me through. If you're in a formation, like a heavy left formation, and you saw an issue where you needed to take some avoiding action, what you would be doing in the cockpit as the flying pilot, where you would be looking, and what attitude source you would be using?

10 CAPT BALAAM: It's hard to tell. Personally, I would make the turn, set the attitude using my references, and then look where I'm going. Then I'd go back straight into my instruments, the primary flight display, because I knew that was true, to basically ensure that what I was requesting of the aircraft and what I intended it to do was actually happening, because of the physiological trap there.

15 AVM HARLAND: Yes, okay.

20 CAPT BALAAM: So you could get away with making, like, an instant change, but you'd have to go back and check. Hence our work cycle: attitude, look out, attitude, performance. So I'd set an attitude, I'd look out where I'm going, and I'd go straight back to my primary flight display to make sure that attitude was achieving the outcome that I required.

AVM HARLAND: So are you using, as attitude, primarily an instrument source, or are you using the NVD horizon?

25 CAPT BALAAM: I would be using my instrument source, particularly if I was in a turn, because of that known trap, the physiological trap, now made worse.

30 AVM HARLAND: You wouldn't be using the NVD horizon on there?

CAPT BALAAM: No, I wouldn't.

35 AVM HARLAND: So effectively it's an instrument manoeuvre, once you've cleared your flight path?

40 CAPT BALAAM: No, I would be looking because I would be using that work cycle, as I said before, that attitude, look out, attitude, performance. How I derive that initial attitude may be initially using the TopOwl, but I would always refer back to it in my work cycle at some point, to ensure it was true.

AVM HARLAND: Understood. How difficult is that in a formation of multiple aircraft?

CAPT BALAAM: It depends on the spacing. Obviously, the closer you are, the harder it is because the timings you have are shorter. But it's quite demanding.

5 AVM HARLAND: Okay, thank you.

MS McMURDO: So just to clarify, the version 5.10 of TopOwl was the one that was in force at the time of the crash?

10 CAPT BALAAM: Correct, yes, and version 5.10 had this undesirable feature.

MS McMURDO: Yes.

15 AVM HARLAND: Actually, if I could have one follow-on question please? When 5 Avn transitioned from version 4 to version 5.1, what training was given to the pilots?

20 CAPT BALAAM: Once the decision was made to proceed with the version 5.1 upgrade – and may I say, that was, the intent was always as an interim upgrade whilst we sought a better solution – there was a training implementation plan, which was signed-off by the project office at the time, and endorsed by various senior officers: the commandant, Army Aviation Training Centre, the director of Aviation Capability Management.

25 And that training implementation plan required us to do a ground school package on the ADELE, which is the Army's Digital Electronic Learning Environment, basically looking at the technology behind the upgrade. There was a restriction put on all the pilots in our PEX management system, such that you couldn't fly a version 5.1 or 5.10 aircraft until you'd done the training implementation plan.

30 And that training implementation plan also included a sortie with a QFI, where the pilots were shown the issue. They were also shown the warnings and cautions, which were now in the Standardisation Manual, and also the Aircraft Operator Manual.

35 So everybody was aware of what the issue was, this undesirable feature. So nobody could go flying without having gone through that process because our PEX management system wouldn't allow it.

40 AVM HARLAND: How did you find flying TopOwl, compared to flying with the old ANVIS system?



5 CAPT BALAAM: It was definitely an enhancing system. It was much lighter, therefore fatigue wasn't acute. Because you have the symbols, they were displayed, that was another enhancing feature. Whereas on the old ANVIS, initially we didn't have symbology, so you had to scan inside; whereas this, it gave you the ability to scan outside for longer, and you didn't have to constantly scan, which obviously reduced fatigue.

10 We also had the ability to plumb in the forward-looking infrared picture as well, should we wish to augment the image intensifiers, the classic NVGs, to the forward-looking infrared, which was on the nose of the aircraft.

So it was definitely an enhancing feature, and the symbols definitely made your life much, much easier.

15 AVM HARLAND: Right, thank you.

20 COL STREIT: CAPT Balaam, you've been asked some questions and given some evidence about some of the advantages of the TopOwl software version 5.10. Do you recall when you first underwent training using the PEX – recorded in PEX that you had in relation to this new version?

25 CAPT BALAAM: What happened was we were asked to conduct an operation evaluation of the version 5.10 at the back end of 2019. So a test plan was put together by AATES, which is the Army Aviation Test and Evaluation Section, which invited – I think there were 12 of us – senior pilots from around the Army, as well as a couple from the Navy, to go down to 6 Aviation Regiment in Holsworthy where they'd modified two aircraft. We went down to have a look at version 5.10 and we essentially went through the package. We went through the ADELE package. We also went through the new flight manual amendments, the new Standardisation Manual amendments, because as QFIs we were going to be the people that, should the decision be made to proceed, we were going to be teaching and training our junior pilots on the system.

35 So that happened at the back end of 2019. As I said, there were 12 of us. There were two Lieutenant Colonel test pilots, off the top of my head. The test director was SO1 Standards, so the most senior QFI in the capability at the time who was an A Category MRH QFI. As well as being a test pilot himself, he was the test director and he was assisted by another Lieutenant Colonel test pilot. There was the Senior Instructor from MRH Wing at the School of Army Aviation. There was the senior MRH Standards Officer. There was myself, an A CAT, another A CAT from 5 Avn, and there were two A Category pilots from 6 Aviation. I flew a day sortie with the new software doing a variety of sequences, including training flights in confined areas. Then we flew a night sortie in low illum, essentially doing the same,

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and we also conducted a Special Operations approach to a facility at Holsworthy. I flew with an A CAT MRH QFI from 6 Aviation, witness Delta 14.

5 COL STREIT: You mentioned some other members who participated in that process, including some test pilots. To the extent you are able to, whilst being mindful if any of those individuals have a pseudonym, can you just turn your mind to recall who those people were and let me know?

10 CAPT BALAAM: If you can just give me 30 seconds just to scan the list?

COL STREIT: Yes, of course.

15 CAPT BALAAM: As I say, I flew the day and the night sortie with witness Delta 14. The test director was LTCOL Norton, who at the time was SO1 Standards, himself a test pilot. Then the report, the final report and all the data was collated by LTCOL Langley, who at the time I believe worked on airworthiness.

20 COL STREIT: All right. Thank you.

AVM HARLAND: Could I just ask another question, please, just regarding that? The OT&E, I'm gathering it was an operational test and evaluation?

25 CAPT BALAAM: Yes, it was but it was under the guise of a test plan from AATES, the Army Aviation Test and Evaluation Section. So they wrote the test plan. The test director was SO1 Standards, so within that organisation, but a test pilot nonetheless.

30 AVM HARLAND: Okay, great. What you've described is a fairly high-powered, high experienced group of people who did that testing. Did you have any junior people who were involved in that testing?

35 CAPT BALAAM: It was a lot of senior people. There were like one or two other Captains that flew but they were predominantly the senior people, the people that were going to be tasked to teach and on-deliver this training. But there was a good mix, they weren't just test pilots. They were people that were actually going to be using this for real in (indistinct) at low level at night in low-contrast terrain, over water. So there were some Navy pilots from 808 Squadron, and then there were pilots from 6 Aviation and  
40 5 Aviation Regiment. So the user end of the community was represented, as well as the training end.

AVM HARLAND: Okay, thank you.

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COL STREIT: Do you recall you were at 5 Aviation Regiment in 2022? Is that correct?

5 CAPT BALAAM: Correct.

COL STREIT: You were a Qualified Flying Instructor at the time on MRH-90?

10 CAPT BALAAM: Correct.

COL STREIT: During that year, 2022, were the pilots at 5 Aviation Regiment on MRH-90 utilising TopOwl version 5.10?

15 CAPT BALAAM: Yes, they were.

COL STREIT: Did you undertake, as part of your role as an instructor, any training of pilots before they were allowed to use that version of TopOwl?

20 CAPT BALAAM: All the pilots had to conduct the ground school training. They had to basically get a certificate from ADELE, our digital learning environment, to say they had done the ground school element. Once they'd done that, they then flew with a QFI that had been trained on the 5.10 system, and then we took them out and conducted a sortie to show them the features, the enhancing features as well as the undesirable one.

25 COL STREIT: So how many sorties did a pilot have to undertake to be permitted to use that version of TopOwl?

30 CAPT BALAAM: Just the one because the fundamentals were the same. The only difference was the distance to go which was added. The pitch ladder was different but enhancing. There was a subtle difference with the rate of climb and descent indicator. It was no longer a vertical stick; it was more like a horizontal hockey stick which was exactly the same as our primary flight display, so that was enhancing. Then there was this feature with the roll washout and that's what we focused on. We showed the version 4 pilots the version 10 enhancing features as well as this known trap and to be aware of it.

35 COL STREIT: Don't accept my words if they don't accord with your memory, of course, but the undertaking, the single sortie, in relation to then being permitted to use TopOwl version 5.10, was it a test in the sense of a pass/fail or was it – just answer that question first?

40 CAPT BALAAM: No, it wasn't a pass/fail because there was literally three or four features you wish to show them. They were already familiar with

5 HMSD symbols. It was very, very similar. It was fundamentally the same, apart from these three or four additions which were enhancing, as well as this undesirable feature that had crept in. So it wasn't a pass/fail; it was an exposure. We showed them that they'd already done the ground school and this was just for the final piece of that training implementation plan before they could then go and fly it. There was – there was very little difference between the two, frankly, apart from what we've just described.

10 COL STREIT: Was the requirement for the sortie to be at night or during the day?

CAPT BALAAM: I can't recall. I imagine it would be at night but I'd have to go back and check my records for that.

15 COL STREIT: Do you know, and say if you don't, but do you know whether that process you've just described about taking pilots on a sortie to essentially become familiar with the new version of TopOwl 5.10, whether that same process of a sortie was engaged in at 6 Aviation Regiment?

20 CAPT BALAAM: I don't know but the training implementation plan was a capability-wide plan and it directed all the user units to essentially follow that plan and it also directed the Army Aviation Training Centre to change their training materials to make sure it incorporated all the changes. So I would imagine they would have done.

25 COL STREIT: Now, in terms of the sortie itself, and exposing the pilots to the advantages of TopOwl 5.10 and the undesirable feature you've described, was that done in a way to conduct the sortie to put them in a position whereby they'd be exposed to both the advantages and the disadvantages?

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CAPT BALAAM: Yes, yes.

35 COL STREIT: Did that incorporate having them turn their head from side to side to deliberately experience the washout?

CAPT BALAAM: Yes.

40 COL STREIT: Did you encounter anyone, to the best you can recall, that had fundamental difficulty in adjusting to the new version of TopOwl?

CAPT BALAAM: No.

COL STREIT: Now, in terms of the formality of that process, once the sortie had been concluded, was the fact that the pilot had participated in that sortie using TopOwl 5.10, was that recorded in PEX?

5 CAPT BALAAM: Correct. Basically, what would happen is once the training had been completed, the Troop Commander normally would then review PEX and then remove the restriction which would have stated not to fly version 5.10 aircraft until training completed, and he would have probably put a comment in PEX saying “training completed”. The evidence to complete that would have been the QFI sortie and the ADELE package. Those two pieces of information combined together would have been sufficient to remove the restriction.

10 COL STREIT: Then by extension, did that mean that pilot could then engage in flying using TopOwl version 5.10?

15 CAPT BALAAM: Correct.

COL STREIT: I just want to turn now to your evidence dealing with the deceased aircrew and your experiences.

20 AVM HARLAND: COL Streit, I just have one more question about TopOwl before we complete it.

25 COL STREIT: Yes.

AVM HARLAND: In your experience, is it typical for either a primary or any other attitude source on an aircraft to display a known error without an associated caution or warning being displayed?

30 CAPT BALAAM: Sorry, can you just repeat the question again?

AVM HARLAND: In your experience, is it typical for either a primary or another attitude source on an aircraft to display a known error, and because this is a known error we’re talking about with TopOwl, without an accompanying caution or a warning?

35 CAPT BALAAM: Not in my experience. If your primary flight display fails, you would get a warning or a caution displayed to you.

40 AVM HARLAND: Yes. So if they have a known error, it would likely give you a caution or a warning?

45 CAPT BALAAM: I haven’t experienced anything like that in my previous career, so it would be new to me. But when a primary flight instrument

fails, you would get a red flag or an error come up – an error flag come up to tell you that it had failed.

5 AVM HARLAND: Yes. I guess what I'm getting at here is that in TopOwl we knew that there was an attitude error if you turned your head to the side.

CAPT BALAAM: Yes.

10 AVM HARLAND: Yet that attitude was still displayed without a warning or a caution?

CAPT BALAAM: Yes.

15 AVM HARLAND: Okay, thank you.

MS McMURDO: Could I ask you, Captain, because I think we're about to move on to a different topic, did you see the recent 60 Minutes program and the - - -

20 CAPT BALAAM: Yes, I did.

MS McMURDO: Yes. So the suggestion – well, more than a suggestion, claim was made there that there were warnings in 2020 about the safety of the TopOwl night-vision device and that it could lead to fatalities. Were you aware of that or do you want to make any comment about that?

25 CAPT BALAAM: I was aware that a previous test prior to (indistinct) had been conducted where they had stated that version 5.10 was unacceptable. That was their conclusion.

30 MS McMURDO: Did you understand the reasoning behind that?

35 CAPT BALAAM: I could understand how they got to unacceptable in isolation if you took a narrow view. If you took a slightly broader view and looked at what 5.10 was replacing and the advantages that it brought, on a balance of risk it was probably wise to proceed because the issues that it was resolving, you know, were equally as challenging.

40 MS McMURDO: Right.

45 CAPT BALAAM: Now, I'd also like to say is whilst that report stated it was unacceptable, the Europeans had provided it to us. It passed muster with the Original Equipment Manufacturer. The Germans had introduced it to their NH90s and were using it, and the Royal Australian Navy Test and Evaluation Unit, AMAFTU, their own test pilots had found version 5.10 to

be acceptable for use on their MRH-90s when they conducted a first-of-class flight trial on the LHD with the NH90s. So that first report did appear to be a bit of an outlier. There was an issue but whether it was unacceptable, I'd suggest you're probably best to ask the test organisation.

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MS McMURDO: Sure, sure. But from your perspective, there were pros and cons about it?

CAPT BALAAM: Absolutely.

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MS McMURDO: You felt the pros outweighed the cons?

CAPT BALAAM: Absolutely. I was going to have to fly that thing for real, at night, over water in a degraded visual environment. I was happy to do that, as indeed were the other 11 pilots. We were not turkeys waiting for Christmas. We were going to have to use it, so I was happy to use it.

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MS McMURDO: Thank you. You saw the program, was there anything else you'd like to say in respect of that program?

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CAPT BALAAM: It's not for me to comment.

MS McMURDO: Nothing that you feel that the Inquiry should be aware of?

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CAPT BALAAM: No.

MS McMURDO: All right then. Yes, thank you.

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COL STREIT: Thank you. Could we just have Exhibit 4, please?

MS McMURDO: It's with the statements.

COL STREIT: The statement of CAPT Balaam, yes.

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CAPT Balaam, at paragraphs 76, 77 and 78, you give some evidence in relation to your knowledge of some of the deceased aircrew. You flew with CAPT Danniel Lyon; that's right?

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CAPT BALAAM: Yes, I did briefly when he was on B Squadron in Townsville.

COL STREIT: His nickname was Diesel?

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CAPT BALAAM: Correct.

COL STREIT: You also flew with LT Max Nugent; is that correct?

CAPT BALAAM: That is correct.

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COL STREIT: LT Nugent, he was an MRH-90 pilot at 5 Aviation Regiment at the time you were there as the Qualified Flying Instructor?

CAPT BALAAM: That is correct.

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COL STREIT: You express the view in paragraph 77, second-last line:

*LT Nugent was progressing at an appropriate rate through his junior pilot training. He was slightly above the average for his cohort.*

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Is that right?

CAPT BALAAM: That is correct.

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COL STREIT: You're aware that LT Nugent was posted to 6 Aviation Regiment at the end of 2022?

CAPT BALAAM: Yes.

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COL STREIT: In your experience at 6 Aviation Regiment, was it usual, unusual, or standard practice for a pilot who'd spent less than 12 months at 5 Aviation Regiment to then be posted to 6 Aviation Regiment?

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CAPT BALAAM: It was an interesting time because at that stage the MRH-90 was going to be withdrawn from service at 5 Avn.

COL STREIT: Yes.

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CAPT BALAAM: So we were essentially trickling people down to 6 Avn. We couldn't all send them all at once because it would overwhelm their training organisation and the unit. So we were slowly posting people out over time and Max was one of the first to go, and then slowly over that '22 to '23 period, we were posting people out and he elected to go at the end of '22. Then the rest of us stayed on the unit and then slowly they were posted out down to 6 Avn because that was the only place they could be posted to because that was the only other unit that actually operated that aircraft.

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COL STREIT: Yes. At paragraph 78 you say that you knew WO2 Phil Laycock from your time in 171 Squadron flying Black Hawk, but you'd never flown with him. Is that correct?

5 CAPT BALAAM: I never flew with him on an MRH. I possibly flew with him when I was flying Black Hawks, but I'd have to go back and check my log book for that.

10 COL STREIT: All right. No, thank you. At paragraph 79, you say unfortunately you did not know CPL Alexander Naggs.

CAPT BALAAM: That is correct.

15 COL STREIT: Can I just ask you some very brief questions based on your experiences flying MRH-90 as a pilot. If I was flying at 200 feet above sea level, straight and level at a speed of about 80 knots, and I wanted to climb to 300 feet, what actions do I need to perform in the aircraft to achieve that effect?

20 CAPT BALAAM: I would have to increase the power using the collective lever in my left hand. I would then basically set a climb attitude. It would probably be depending on how rapidly you wanted to get there, probably a standard climb of about three degrees, nose up, and then I would trim it out and then climb up to the new datum. So the work cycle we use is power  
25 plus attitude, trim, to get the aircraft setup correctly to achieve that outcome.

COL STREIT: Would that be a fair summary of describing flying the aircraft hands-on, by using collective and cyclic?

30 CAPT BALAAM: Yes.

COL STREIT: Is there another way to provide inputs to the aircraft where the automatic flight control system would be engaged to achieve the same effect?

35 CAPT BALAAM: Yes, you could. If you had the upper modes in, you could set an altitude in the central control panel, with the old A function, the altitude acquire function. So you could set whatever altitude you wanted to go to; you could, basically using a rotary knob on the control panel. Then  
40 once the datum is set, usually cross-check between both flying pilots. You then hit the button and then the aircraft, provided the upper modes were engaged, would then climb to acquire that attitude, using a standard rate of climb of 700 feet a minute.

COL STREIT: If I had set my RADALT radio altimeter to 200 feet, flying straight and level at 200 feet at 80 knots, and then I decided I wanted to descend a few feet below the 200, I set on the RADALT what do I need to do to achieve that effect?

5

CAPT BALAAM: If you had the RADALT hold in the upper mode, so the automatic flight control system is using the datum that you've set on the RADALT to hold, you could squeeze the collective trigger which would essentially override that mode. And then whilst you had the trigger squeezed, you could then fly it as you so desired. You could lower the lever and it would descend.

10

But then once you release that trigger, it would then recapture the new datum. Say, for example, you descended 20 feet to, say, 180, and you release the trigger at 180, essentially the aircraft would capture that.

15

COL STREIT: Can I override the RADALT setting of 200 feet, without touching the trim as you've described? But can I override it by - - -

20

CAPT BALAAM: Yes, you could. Yes, you could. So you could, essentially, fight the trims and push through.

COL STREIT: All right. Now, push through using, what, the collective or the cyclic?

25

CAPT BALAAM: The collective. Or you could use the approach on the cyclic as well, but you would get an artificial force back to essentially tell you that what you were doing was not quite correct, and you would have to physically get involved and force the aircraft to do what it was trying not to do.

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COL STREIT: So the aircraft, in terms of the artificial force you described, is that some sort of inbuilt warning system?

35

CAPT BALAAM: Yes. Yes, the automatic flight control system would have an artificial force feel; essentially springs that would counter your input. Once you pushed the – pull back the trim release button which I spoke about, essentially you take away that artificial feel, so the aircraft is not sort of telling you what you're doing is not what you desired.

40

COL STREIT: If I was travelling in a formation of four, and I was the third aircraft in the packet, and I'm travelling at 200 feet at 80 knots over the ocean, if you were flying that, what are the things you would keep in mind in being aware of where you are in the formation and keeping your distance from other aircraft?

45

5 CAPT BALAAM: Obviously, I have a responsibility to keep away from 2, and obviously I make sure that I give 4 a fighting chance to maintain formation. So I have a responsibility to keep my spacing, but also responsibility to the person that's following me.

10 I would be acutely aware that 200 feet is my hard deck, for want of a better word, that we were not authorised to go below 200 feet in training over water at night. And that is legislated for NSIs. I'd be acutely aware of that. I'd also want to know what the weather was doing, if the weather was forcing me down.

15 So I'd want to maintain spacing off 2, be aware that I gave 4 a fighting chance to be able to maintain formation integrity, but also I'd be acutely aware of my height above the water.

20 COL STREIT: You've given some evidence about crew resource management within the cockpit of an aircraft. Does that, by extension, also include crew resource concerning the other aircraft in a sortie? In the sense that if the lead aircraft was to slow down, then the lead aircraft would have to communicate that change in speed across a net, so the other aircraft following the lead would know.

25 CAPT BALAAM: Yes, that would be normal procedure. As the flight lead, you owe it to your formation, so they could then manage their spacing, their energy and their height, to be able to maintain formation integrity. If you were going to do an abrupt change, you would probably call it on the radio, just to let your playmates know what you're up to.

30 Subtle changes – the five knots here, five knots there – you really wouldn't worry about it. But, you know, significant changes in speed and altitude, going from, say, 100 to 80 knots, I would call it.

35 COL STREIT: Yes. Just based on your training and experience, let's say you were – whether it's Bushman 82, or 83 or 84 in that sortie, and you lost situational awareness, what does your training teach you to do, to try to regain situational awareness?

40 CAPT BALAAM: Are you talking inside the aircraft, between the pilots?

COL STREIT: Yes, you lost the horizon; let's put it that way.

45 CAPT BALAAM: We have, in the Standardisation Manual, an unusual attitude drill that we carry out, and that's drilled into us from day one. It's attitude; wings level, ball in the middle; heading, make sure you're going

in a safe heading, away from obstructions or hazards; power, apply as much power as you physically can, that is available to you; and then airspeed, select a suitable airspeed. Typically, we would select about 80 knots, which was our min drag speed, max power available speed. So you could basically  
5 get out of the hazardous situation as quickly as possible. We used to practice that as part of our NVD assessment. We used to practice that as well in our instrument flying assessments, as well as any supplementary training we did as well.

10 AVM HARLAND: I have question, if I may?

COL STREIT: Yes.

15 AVM HARLAND: When you lose situational awareness in a four-ship formation, for example, would you make a radio call on that or would that be ordinary?

20 CAPT BALAAM: Ideally, you should, but, you know, circumstances would dictate. You prioritise what is needed at the time, and you may not have the capacity to be able to do that. Ideally, you should make a call.

AVM HARLAND: Okay. Thank you.

25 COL STREIT: Just one clarifying question, CAPT Balaam. You gave some evidence earlier about if you were to essentially force the aircraft to go below the RADALT setting – I used the example of 200 feet – and your evidence was, I think, along the lines of some sort of artificial force feel you would feel. What’s the feedback the aircraft is providing to you? Are you able to describe that feedback?

30 CAPT BALAAM: Normally, we would set a RADALT warning. So, for example, 10 per cent below 200 feet, we’d set 180 for an audio warning, and we are mandated to do that in our Standing Instructions. So you would get an audio warning, sort of decision height, letting you know that you’d  
35 reached that datum.

The other thing would be is, if you were not disengaging the upper modes, you basically were pushing against those engaged upper modes, you would get an artificial feel. So it would be increasing force required actually to  
40 move the controls; they wouldn’t move as freely. So, essentially, a resistance.

COL STREIT: Is your experience that that resistance would be distinctive?

5 CAPT BALAAM: Very much so. Sometimes, you'd push against it just to get a minor change, and then relax and then the aircraft would readopt the datum that had been set, you know? And sometimes, you know, downdrafts or weather phenomena may just push you off-datum and you may just push against the springs to correct it, but just very minor adjustments. For major adjustments, you basically use the upper modes or reset the datum.

10 COL STREIT: Thank you. Thank you, CAPT Balaam.

They're my questions, Ms McMurdo. I'll just ask that the exhibit remain with the witness, if a further question is occurring.

15 MS McMURDO: Thank you, COL Streit. Are there applications to cross-examine?

LCDR GRACIE: Yes there are, ma'am, on behalf of CAPT Lyon.

20 MS McMURDO: Sorry?

LCDR GRACIE: There are, ma'am, on behalf of CAPT Lyon.

MS McMURDO: Yes, please, just if you could go to the microphone. Thank you.

25 LCDR GRACIE: Yes, ma'am, my apologies. On behalf of CAPT Lyon.

MS McMURDO: How long do you anticipate?

30 LCDR GRACIE: It could be 10 to 15 minutes.

MS McMURDO: All right then. Well, perhaps I'll give you leave to cross-examine, and we'll see if there are any other questions after that, that might resolve any other issues.

35 LCDR GRACIE: Thank you, ma'am.

40 <CROSS-EXAMINATION BY LCDR GRACIE

LCDR GRACIE: Sir, could I ask you to have access to Exhibit 2? Which is a depiction of a heavy left formation. And just to set the scene a little bit: I know that you say at 6 Avn, that the Regiment favours a staggered left formation.

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CAPT BALAAM: At 5 Avn, we favoured a staggered left.

5 LCDR GRACIE: Sorry. Yes, and at 6 Avn they favour a heavy left or heavy right?

CAPT BALAAM: I believe so, but you'd have to ask them that question.

10 LCDR GRACIE: And you say that they are best placed to comment on the reasons why. Can you just briefly explain the practical differences between the 5 Avn approach of staggered left, to the 6 Avn heavy left?

15 CAPT BALAAM: It's all dependent on our role and mission. Now we're going to go somewhere where we may get into classified territory, so I'll be general. Essentially, they have a role and mission, you know, to hit a point target, whereas ours was slightly different. So therefore the missions drove the formations we flew. So essentially the combat environment, we're likely to work in and the threats we're going to encounter. So the formations were driven by that.

20 We had various permutations which you could choose from, and then our roles and missions drove what type of formation we flew. And as I said, you'd have to ask 5 Avn – correction – 6 Avn why they flew that particular way, and it would be due to their mission and role that they conducted, and it's probably not for this forum.

25 LCDR GRACIE: Being more to do with support for Special Ops?

30 CAPT BALAAM: Correct.

LCDR GRACIE: All right. Thank you. If we just have a look at this Exhibit 2 for a moment. Just correct me if I'm wrong, because I want the benefit of your expertise, not my understanding. If I look at aircraft 2 in that heavy left, my understanding is that aircraft 2 on a heavy left will collapse into a 6 o'clock position.

35 CAPT BALAAM: No. This is laid out in the MRH-90 Standardisation Manual, chapter 19, which is the formation chapter. It goes into the mechanics of it all. But essentially what you had is, you had an arc of freedom, so 2 could essentially go from 90 degrees of beam either side – although it's not preferred – around the back of the aircraft.

40 You would never remain in trail, because trail is a really hard place to formate on, because you can't detect the changes of the aircraft in front of you. So we tended to avoid that. We tended to avoid a beam because

45

same-same, you can't detect the changes as easily. So we tended to work in that 45 degree offset, 45 to 30 degree offset, either side.

5 For heavy left, they tended to – number 2 would bias on the right-hand side and then the remaining aircraft on the left-hand side. But you always had an arc of freedom, because if you did a rapid turn you may just run out of real estate. So to manage your energy, you'd slide left or slide right as required, around a turn, and then re-establish the formation once you're in a straight line again, or re-establish formation as you approached your target.

10 LCDR GRACIE: So on a heavy left, just so I'm clear, aircraft 2 that's shown in Exhibit 2 would not, you say, come across to the 6 o'clock position?

15 CAPT BALAAM: Yes, it could. It could.

LCDR GRACIE: Could?

20 CAPT BALAAM: It would move through it, but the Standardisation Manual states that it is not to linger there. So, essentially, it is a transitory point. For example, if that formation decided it was turning right, obviously 2 would run out of real estate, so therefore what 2 would typically do would slide left through to the left-hand side, that 30 to 45 degree offset whilst the turn was made, and then slide back once you were wings level, to that right-hand side. You would never remain in trail.

25 It was always a transitory point, because your ability to detect changes on 1 were really hard, because you needed to look at the aspect of the aircraft along its longitudinal axis, to really help those rates of closure and speed changes, for example. Whereas, if you were just looking tail-on, all you saw was a single point of light.

30 LCDR GRACIE: So if I was to look at Exhibit 2 and project where aircraft 2 would be in that transiting point, it would come across to the left, to the 6 o'clock position, and then continue effectively in front of where aircraft 3 is?

35 CAPT BALAAM: Correct. So 3's job in that formation was always to leave sufficient space, such that 2 could exercise its arc of freedom.

LCDR GRACIE: Because 3 has to collapse back?

40 CAPT BALAAM: No.

45

LCDR GRACIE: No?

CAPT BALAAM: No, 3 would always leave, essentially, a gap for 2 to be able to exercise their arc of freedom.

5

LCDR GRACIE: So if we were looking at Exhibit 2, Exhibit 3 is placed probably too far?

CAPT BALAAM: Correct. I mean, that is a diagram. So imagine you had two rotor diameters between 1 and 2, so you would then have to six rotor di's between sort of 1 and 3, to allow 2 space to get in between.

10

LCDR GRACIE: But if you're in 3 in this heavy left formation, as depicted in Exhibit 2, and aircraft 2 is transiting across, 3 does have to collapse in that formation, doesn't it?

15

CAPT BALAAM: No, because 3's task is to ensure there's sufficient space for 2 to do that; that is their job in the formation, that's one of its roles and responsibilities. So you would never close the gap, never intentionally close the gap.

20

LCDR GRACIE: So that gap between 2 and 3 is greater than between 1 and 2?

CAPT BALAAM: Correct.

25

LCDR GRACIE: And between 3 and 4, it's greater?

CAPT BALAAM: The gap between 1 and 3 is greater than 1 and 2, and 3 and 4.

30

LCDR GRACIE: But the gap - - -

CAPT BALAAM: So this is a really poor diagram, unfortunately.

35

LCDR GRACIE: Okay. But the gap really needs to be between 2 and 3, doesn't it, if their left-hand formation commences and 2 transits across to the left?

CAPT BALAAM: I'm sorry, I don't understand what you're saying. I could draw it on a board if you want. But you would always – excuse the hands. So you've got 1 is leading, and then 2 is essentially in that heavy left formation on the right-hand side, and then 3 and 4.

40



5 So between 1 and 3 there is always sufficient space. That is one of 3's responsibilities, to enable 2 to exercise its arc of freedom. Essentially, 3 is six rotor di's away from number 1, whereas between 1 and 2 there may be two to three rotor di's, to give that person sufficient space to be able to exercise their arc of freedom, to be able to manage their energy; particularly, as I say, in a right-hand turn where 1 would start to cut across 2. So then 2 would essentially slide to the left to basically enable that to happen.

10 LCDR GRACIE: It's the same in that heavy left?

CAPT BALAAM: Yes.

15 LCDR GRACIE: So if I look at Exhibit 2, aircraft 3 is depicted too far?

CAPT BALAAM: It's too close. Yes, it's too close.

LCDR GRACIE: It's too close, for want of a better term?

20 CAPT BALAAM: It's an unfortunate diagram; it's not to scale.

LCDR GRACIE: All right. When aircraft 2 transits or moves through behind 1, and to the left of 1, does 3 move across to the right?

25 CAPT BALAAM: No.

LCDR GRACIE: Just always maintains that position?

30 CAPT BALAAM: Yes. It really depends. Each aircraft has got its own tactical freedom. It's not display formation. It's not welded wing. It's not like the Roulettes. Everybody is essentially manoeuvring around one another in a choreographed, set out way. So you've got full tactical freedom to exercise your arcs, to manage your aircraft, to position it in the most appropriate part of the sky, depending on your track.

35 LCDR GRACIE: If aircraft 2 has to track to the left, I know you mentioned that there has to be a reference by the pilot, or co-pilot in the left seat, to see that there's no obstacles to the left.

40 CAPT BALAAM: Yes.

LCDR GRACIE: They wouldn't be able to see aircraft 3, would they?

45 CAPT BALAAM: The crewmen would've done – the crewmen essentially acts as our eyes in formation, to be able to clear those arcs.

LCDR GRACIE: Sorry, I don't know what you're - - -

5 CAPT BALAAM: So as a pilot, I would say, "Sliding left, sliding right", and then typically whoever is on that side would look, essentially, to clear the way and give - - -

LCDR GRACIE: But the pilots and co-pilot - sorry.

10 CAPT BALAAM: And give you situational awareness of where the preceding aircraft were. So you were constantly updating one another in the crew as to where the other members of the formation were. As I say, it was a tactical formation, it wasn't a display formation, so we had arcs of freedom to be able to manoeuvre as we saw fit.

15 Lcdr GRACIE: But as I understand it, the pilots and co-pilots have an arc of vision of nine to three?

CAPT BALAAM: Yes.

20 Lcdr GRACIE: So they're not going to be able to see aircraft 2 – sorry, aircraft 3 if they're in aircraft 2?

25 CAPT BALAAM: No, and that's where the crewman comes in. That's mandated in our Standardisation Manuals, that the crewmen are to assist.

LCDR GRACIE: What if the doors are closed?

30 CAPT BALAAM: The crewmen obviously, field of view is reduced, but they still have a window in that door, to be able to assist where practicable.

LCDR GRACIE: Yes, but reduced so that they can't see aircraft 3 if it was in this location, as shown on Exhibit 2?

35 CAPT BALAAM: The Standardisation Manual states that the door should be open as much as practicable when doing formation, such that the individual crews have situational awareness of the other aircraft around them. And that's stated in chapter 19 of the MRH-90 Standardisation Manual.

40 Lcdr GRACIE: Sir, I just want to come back to the question, though. If the door is closed, in this scenario depicted in Exhibit 2, the aircraft crewmen could not see aircraft 3?

CAPT BALAAM: If he was sat in his seat, but the crewman could've moved forward to then actually clear their arc.

5 LCDR GRACIE: Well, we don't know.

CAPT BALAAM: Well, we don't know.

10 LCDR GRACIE: All we do know is that the aircraft crew was sitting in row – is it eight?

CAPT BALAAM: Seven.

LCDR GRACIE: Seven. So if they're in row 7, seated - - -

15 CAPT BALAAM: With the door closed - - -

LCDR GRACIE: Door closed.

20 CAPT BALAAM: - - - your ability to see essentially rearwards is severely limited because of the doors closed. But the crewman could still get out their seat to have a look through the window.

LCDR GRACIE: They could.

25 CAPT BALAAM: They could. But I don't know.

LCDR GRACIE: And they wouldn't necessarily do that unless they were requested to, would they?

30 CAPT BALAAM: Their responsibilities are laid down - - -

MS McMURDO: Well, look, there's a bit of speculation here.

CAPT BALAAM: It is, it's hard.

35 MS McMURDO: That's comment, isn't it?

LCDR GRACIE: Well, I was just dealing with the suggestion - - -

40 MS McMURDO: It's comment. Let's just move on. Your 15 minutes is nearly up.

CAPT BALAAM: All I will say is the Standardisation Manual requires the crewmen to, as part of their NTS, to basically inform the rest of the crew on

the position of the other aircraft in formation. Those are mandated in chapter 19 of the Standardisation Manual, where practicable.

5 LCDR GRACIE: You mentioned that one of the issues dealing with the revision, the end of version 5.10, was that this washing out matter. But you referred to it as a – I think you said a “trap”.

10 CAPT BALAAM: I referred to the G-excess illusion as a trap, and all this did was essentially add to that.

LCDR GRACIE: You said it was a “known trap”; so are you talking about the physiological?

15 CAPT BALAAM: The physiological, yes.

LCDR GRACIE: But then we’ve got the physiological known trap, overlaid with what you called a – a “undesirable feature”.

20 CAPT BALAAM: Correct.

LCDR GRACIE: So we’ve got two compounding undesirable aspects: we’ve got the physiological known trap; and we’ve got overlaid with that, the undesirable washout feature.

25 CAPT BALAAM: Yes, but the physiological trap is so overwhelming. And as I say, the Army’s lost an aircraft – well, it was a contributing factor to a previous crash – that it is inculcated in our training from day one, not to go there.

30 LCDR GRACIE: But that’s because of the physiological - - -

35 CAPT BALAAM: The physiological trap, and there’s nothing we can do about that, as humans. It is overpowering, and so we train our people – as do all Air Forces and Aviation Arms around the world – not to look into the turn, because it has killed many a person. So it is a huge part of our training not to do that, and that is why we teach our pilots the work cycles that we do, to avoid it; so therefore, it would be completely unnatural to refer, to use the instruments at that position, so it was trained out of them, to a large degree.

40 But yes, it was an undesirable feature, and ideally it shouldn’t have been there, and indeed, that was the intent. This was an interim measure, and then in the longer term they were going to seek a solution to that, version 6 or whatever. But, sadly, we were overtaken by events.

45

LCDR GRACIE: I understand. But you said that the training was to deal with that problem.

5 CAPT BALAAM: The physiological problem, and then the issue with 5.10  
with the washout, that was trained as well. So the ground school package  
we did, the QFI instruction that we did as part of the training  
implementation plan, and then all the warnings and cautions that were put  
10 in the Standardisation Manual as well as the Operator Manual, to ensure  
that people were fully aware of it. So it was trained and articulated,  
formally.

LCDR GRACIE: So there was the specific training, at 5 Avn at least, to deal with or overcome that defect, or that undesirable feature?

15 CAPT BALAAM: Yes, undesirable feature. But that was across the  
capability, across the MRH capability; the training implementation plan  
was across the capability. That's Army, Navy, Training Centre, all the users  
of the MRH.

20 Lcdr GRACIE: I've only got one other matter if you don't mind, ma'am?  
You mentioned the enhancements, outweighed the pros and cons, but were  
the enhancements anything more than just improvements, or were they  
critical attitude related improvements?

25 CAPT BALAAM: The pitch ladder was enhancing, you got more  
information from it. The real enhancement was the distance to go on the  
GPS marker in your display. So you could manage your energy, you could  
manage your arrival to a point in space. It was far easier to do when you  
had that distance to go.

30 Lcdr GRACIE: Sorry, ma'am, there is one more. I apologise. You talked  
about the power, attitude and trim. You mentioned increasing power to the  
collective lever on your left.

35 CAPT BALAAM: Yes.

LCDR GRACIE: That collective is on the left, whether or not you sit in the  
left or right seat?

40 CAPT BALAAM: Correct, they're dual controls.

LCDR GRACIE: Attitude: you said you climb up about three degrees,  
nose up.

45 CAPT BALAAM: Yes.

LCDR GRACIE: And then you trim.

CAPT BALAAM: Yes.

5

LCDR GRACIE: I just want to put this scenario to you. Is it consistent with those three inputs that aircraft 3 in the scenario shown in Exhibit 2, would increase power to pitch up three degrees, to maintain its position in the formation on a hard left?

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CAPT BALAAM: It's really hard to say. As I said, I don't know what happened that night. I haven't seen the cockpit voice data recorder, so it's really hard to say. If they were making adjustments, they would've used a work cycle not dissimilar to that: power plus attitude, and then trim.

15

LCDR GRACIE: And the trim would be a plateauing of the aircraft?

CAPT BALAAM: No, the trim would be basically locking in that power plus attitude.

20

LCDR GRACIE: Not a plateauing?

CAPT BALAAM: No.

25

LCDR GRACIE: Okay, thank you. Thank you, ma'am, thank you, sir.

AVM HARLAND: CAPT Balaam, just a point of clarification, talking about formation. Do you have formation contracts in Army Aviation, in terms of who avoids who in formations?

30

CAPT BALAAM: Absolutely, and that's articulated in chapter 19 of the Standardisation Manual.

35

AVM HARLAND: Could you describe those? Because I think they may be - - -

40

CAPT BALAAM: So 1 leads; 2 avoid 1; 3 avoids 2; and 4 avoids 3. Essentially, the further down the formation, you avoid all the ones ahead of you. And that is a formal contract that's laid down in the Standardisation Manual, and that's trained into us from day one. We do formation, do that on fixed wing initially, and then through the Joint Helicopter School, the basic helicopter training, and then through to your operational types.

45

AVM HARLAND: Yes. So in summary, if you're manoeuvring as a formation, 4 avoids 3, avoids 2, avoids 1?

CAPT BALAAM: Correct, and that contract if you like, remains extant throughout.

5 AVM HARLAND: Okay, one more question. In a heavy left formation, if you're turning left, obviously 2 doesn't need to slide across, but do you have any issues with belly-up and losing sight of the other formation members in the number 3 and number 4 positions?

10 CAPT BALAAM: No, tactical formation is not display formation. Essentially – excuse using hands again – instead of coming up like that, essentially you'll remain on the plane. So essentially you remain level and then you rotate around that level plane, as opposed to adjusting the plane as you would on a display formation. It's tactical formation, so essentially you  
15 would just manoeuvre as required.

AVM HARLAND: So if you were in the dash 3 or dash 4 position, you're turning left in formation?

20 CAPT BALAAM: Yes, you would essentially remain level.

AVM HARLAND: Remain level?

CAPT BALAAM: Yes.

25 AVM HARLAND: And you can see the other aircraft over the sill?

CAPT BALAAM: Yes, you could, augmented by the crewman on that side, the non-flying pilot, flying pilot or whatever, and then the crewman on that  
30 side, the active crewman.

AVM HARLAND: Okay, thank you.

35 MS McMURDO: I've just got one question, about the TopOwl and the MRH-90, very technical aircraft. Is the TopOwl able to be separated from the MRH-90? Is that a big deal to remove the TopOwl, or is it really embedded in it?

40 CAPT BALAAM: It is the standard feature for the MRH-90. That's across the fleet. And the TopOwl is used by 16 other countries, on a whole variety of different aircraft. I've only known it in the Australian context on MRH, and on MRH-90. I understand that you can get the aircraft without the TopOwl feature, and indeed that's what the Royal New Zealand Air Force, they don't have the TopOwl.  
45

MS McMURDO: But once you've got the TopOwl feature, is it a major thing to remove it?

5 CAPT BALAAM: You wouldn't have to remove it, you just wouldn't use it.

MS McMURDO: Wouldn't use it.

10 CAPT BALAAM: Initially when we first got the aircraft, way back in 2009, the TopOwl wasn't certified specifically for night, so we just used traditional ANVIS night-vision goggles. Then once the TopOwl had been certified for use and we got a clearance, we then adopted the TopOwl; then it has gradually evolved since that time.

15 MS McMURDO: Thank you. Now, were there any other applications to cross-examine? Yes?

COL GABBEDY: Just a couple of questions.

20 MS McMURDO: Yes, all right COL Gabbedy.

**<CROSS-EXAMINATION BY COL GABBEDY**

25 COL GABBEDY: I'll be quick. Captain, you were talking earlier about the training for the version 5 of TopOwl.

30 CAPT BALAAM: Correct.

COL GABBEDY: And my assumption – tell me if I'm correct or not – is that there was a level of existing knowledge for all of these pilots. They'd all been trained on the previous system?

35 CAPT BALAAM: Correct, yes. The difference between version 4 and version 5.1 were minuscule – they were noticeable, but miniscule. The fundamentals were the same.

40 COL GABBEDY: So would I be correct in assuming that the training was focusing on the different aspects, the improvements and - - -

CAPT BALAAM: Correct, yes, it was a differences package.



COL GABBEDY: Thank you. And in your statement, you say at paragraph 22 that in your experience the aircraft was easy to fly at night, given that system.

5 CAPT BALAAM: Yes, it was an enhancing feature of the aircraft. It was much easier than flying on just raw NVG.

COL GABBEDY: And in your experience, was the 5.1 version better than the previous version, for flying at night?

10 CAPT BALAAM: Correct.

COL GABBEDY: Right. Thank you, ma'am, nothing further.

15 MS McMURDO: Thank you, Colonel. Can CAPT Balaam go now?

COL STREIT: He can be released.

MS McMURDO: Thanks very much, CAPT Balaam.

20 COL STREIT: I'm sure he'll be pleased with that.

MS McMURDO: We really, really appreciate your assistance to the Inquiry. You're free to go now.

25 CAPT BALAAM: Thank you.

30 <WITNESS WITHDREW

MS McMURDO: So our next witness?

35 COL STREIT: FLTLT Alexandra Rose is taking the next witness, and it's WO2 Thomas.

MS McMURDO: Thanks, COL Streit.

40 <WO2 KARL GEORGE THOMAS, Sworn

<EXAMINATION-IN-CHIEF BY FLTLT ROSE

45

MS McMURDO: Yes, please be seated. Yes, Ms Rose?

FLTLT ROSE: Could you please state your rank and full name.

5 WO2 THOMAS: Yes. My rank is Warrant Officer Class 2, and my full name is Karl George Thomas.

FLTLT ROSE: And what's your current posting?

10 WO2 THOMAS: My current posting is the Evaluation Warrant Officer at the Workforce Training Branch, at Aviation Training Centre.

FLTLT ROSE: I might just ask you just to speak a little bit slower.

15 WO2 THOMAS: Okay. Yes, sorry, ma'am.

FLTLT ROSE: You have plenty of time.

WO2 THOMAS: Yes.

20 FLTLT ROSE: Could you confirm that you were sent the following documents by the Inquiry, before you appeared to give evidence today: the section 23 Notice requiring your appearance today?

25 WO2 THOMAS: Yes.

FLTLT ROSE: The extract of the Inquiry's Directions?

WO2 THOMAS: Yes.

30 FLTLT ROSE: A copy of my appointment as an Assistant IGADF?

WO2 THOMAS: Yes, ma'am.

35 FLTLT ROSE: A Frequently Asked Questions Guide for Witnesses in Inquiries?

WO2 THOMAS: Yes, I was.

40 FLTLT ROSE: And a Privacy Notice for witnesses.

WO2 THOMAS: Yes.

FLTLT ROSE: I'll hand you a document. If you could look through that document and confirm for me if that is your statement dated 21 February 2024?

5 WO2 THOMAS: Yes, it is, ma'am.

FLTLT ROSE: And is the actual statement eight pages?

10 WO2 THOMAS: It is eight pages. There's two copies of it here, ma'am.

FLTLT ROSE: Apologies for that.

WO2 THOMAS: By the look of it, yes, it is eight pages.

15 FLTLT ROSE: And 50 paragraphs? If you'd just stick to that last page for now.

WO2 THOMAS: Sorry, yes, it is 50 paragraphs.

20 FLTLT ROSE: And it's your signature on that back page?

WO2 THOMAS: It is my signature.

FLTLT ROSE: And there is also one annexure?

25 WO2 THOMAS: Yes, there is, Annex A.

FLTLT ROSE: Are there any amendments you wish to make to your statement?

30 WO2 THOMAS: No, there's not.

FLTLT ROSE: I tender a copy of that statement.

35 MS McMURDO: Yes, could you just hand that back to Ms Rose, just so that we've only got the one statement there, not the two. And we'll tender that as Exhibit 7. Thank you.

40 **#EXHIBIT 7 - COPY OF STATEMENT OF WO2 KARL THOMAS  
DATED 21/02/24**

45 MS McMURDO: Maybe return it to the witness; he might find it helpful.

FLTLT ROSE: Yes.

MS McMURDO: Thank you.

5 WO2 THOMAS: Thank you.

FLTLT ROSE: When did you enlist in the Army?

10 WO2 THOMAS: I enlisted in the Army in 2006, June 2006.

FLTLT ROSE: And in what role did you first enlist?

15 WO2 THOMAS: I originally enlisted as a ground crew in mission support, in an operations capacity, and then I transferred to aircrewman in 2011, I believe it was.

FLTLT ROSE: Where were you posted to when you became aircrewman?

20 WO2 THOMAS: I was an aircrewman at B Squadron at 5 Aviation Regiment for my initial posting.

FLTLT ROSE: So you said that was 2011?

25 WO2 THOMAS: Yes, 2011/2012. I think I did a course 2011 and then finished and got posted to 5 Aviation in 2012, if my memory is correct.

FLTLT ROSE: How long was your posting to 5 Aviation at that point?

30 WO2 THOMAS: The first posting I received was a three-year posting.

FLTLT ROSE: So it took you up until about 2014 or '15?

WO2 THOMAS: Yes, approximately.

35 FLTLT ROSE: What aircraft were you qualified on?

WO2 THOMAS: Originally, I was qualified on Black Hawk, and then after that initial posting I transitioned onto the CH-47.

40 FLTLT ROSE: The CH-47 being Chinook?

WO2 THOMAS: Yes.

45 FLTLT ROSE: When did you start flying the MRH-90?

5 WO2 THOMAS: In 2017, I believe. I posted to the School of Army Aviation, did my MRH-90 conversion. I flew for approximately six months also, and then I did my – sorry, no, that was wrong. I did my aircrewman instructor course and then I flew for about a few months on MRH-90, prior to then becoming an instructor.

FLTLT ROSE: So you became an instructor on the MRH-90, after having converted to it?

10 WO2 THOMAS: Yes. So the instructor course was run on UH-60 on Black Hawk, or as 70 down in Holsworthy; and then I went back to Oakey and was an instructor there.

15 FLTLT ROSE: Then in 2022 and in 2023, where were you posted then?

WO2 THOMAS: I was the Standardisation Warrant Officer at 5 Aviation Regiment.

20 FLTLT ROSE: What were your responsibilities as the Standardisation Warrant Officer?

25 WO2 THOMAS: So I was responsible to ultimately the CO, but above myself was the Standardisation Officer, or the Standards Officer, who was - - -

FLTLT ROSE: Was that for pilots?

30 WO2 THOMAS: Yes, that was for pilots, and then there was myself, and we also had a CH-47 aircrewman Standardisation Warrant Officer. So there's the three of us sort of in the standards team, I guess, and we were responsible to the CO for standardisation of aircrewman and pilots respectively, and also compliance to the CO under the flight management system.

35 FLTLT ROSE: Does that mean that you were the senior aircrewman, or were you on even level with the Chinook - - -

40 WO2 THOMAS: Even level. I think he was actually an A CAT at the time. So I'm a B CAT aircrewman. He was an A CAT, but yes, we were on a similar sort of standard. Similar peer group, I guess.

FLTLT ROSE: You said before you're posted now to – is it the School of Army Aviation at Oakey?

5 WO2 THOMAS: Yes. Well, technically I'm actually under the Aviation Training Centre. School of Army Aviation is a separate sort of Squadron per se, which is a separate part, but I work for Workforce Training Branch, and I do evaluations on our training and courses.

10 FLTLT ROSE: Just to clarify, I think you said this before. You said you are a – which category of QAI are you?

15 WO2 THOMAS: I'm a B CAT QAI.

20 FLTLT ROSE: But as an aircrewman?

25 WO2 THOMAS: Yes, as an aircrewman.

30 FLTLT ROSE: And are you a different category for aircrewman as well?

35 WO2 THOMAS: Yes, so it's a separate category, I guess. So if you're a QAI you can sort of do everything below that category, and a QAI is, I guess, more competent than a standard aircrew.

40 FLTLT ROSE: Does that mean you're an A CAT aircrewman, or you're B CAT in both?

45 WO2 THOMAS: Not technically. I guess it's a – I can instruct A CAT aircrewman, so I guess for all intents and purposes, yes.

50 FLTLT ROSE: Understood. I'm going to ask you some specific questions now about aircrewman training in 5 Avn when you were there in 2022 and 2023. What training program did the aircrewman in 5 Avn follow at that point?

55 WO2 THOMAS: So we have the UTAP, or the Unit Training Assessment Program, which covers everything from an aircrewman getting to us from the School of Army Aviation, to then progressing them through the category system from D CAT up to A CAT.

60 FLTLT ROSE: Were there different modules within this UTAP program?

65 WO2 THOMAS: Yes, and I believe it's in my statement, but I think there was six modules, from memory. Yes.

70 FLTLT ROSE: If you turn to paragraph 9 of your statement – so you outlined there are six modules within this UTAP for the aircrewman.

75 WO2 THOMAS: Yes, excluding Command, which is pilot only.

FLTLT ROSE: So essentially if – let’s start with the first module: Foundation.

5 WO2 THOMAS: Yes.

FLTLT ROSE: Can you just give a brief overview of what that entailed?

10 WO2 THOMAS: Honestly, I would have to have the document in front of me. Sorry, ma’am.

FLTLT ROSE: Understood. Could you speak at all about the Survivability module?

15 WO2 THOMAS: I would have to refer back to the document.

FLTLT ROSE: Would that be the same for all the other modules that are listed in - - -

20 WO2 THOMAS: Yes.

FLTLT ROSE: When you say “the document”, are you referring to a particular – is it a - - -

25 WO2 THOMAS: It’s Standing Instructions, so the 5 Aviation Standing Instructions. I believe it’s 1/106, is the 5 Aviation UTAP, and then that has all the details of how the training progresses, and how crew progress, or pilots progress also, through the system.

30 FLTLT ROSE: In terms of the governance level, is this something outside of STANMAN? Is it a different learning module, separate to - - -

WO2 THOMAS: Yes, it is. Yes, it’s - - -

35 FLTLT ROSE: SIs?

40 WO2 THOMAS: It’s separate, but they’re somewhat related, I guess. So the STANMAN is across all types and all units for MRH-90, whereas the 5 Avn UTAP is specific for 5 Aviation, to say these are the core roles that we need the unit to be able to achieve, and as part of that, then we pull that apart and say, “Okay, well what do we need for each person to get to that standard, and what category does that follow?”

FLTLT ROSE: When you say “each person”, so is it the case that a aircrewman who has joined 5 Aviation Regiment starts with Foundation module?

5 WO2 THOMAS: Yes, correct.

FLTLT ROSE: Then has to pass that module before they can move to the next.

10 WO2 THOMAS: Yes. And again, I would have to refer to the document to know exactly what’s in it, but Foundation is kind of the basics, and then they progress slowly from there, and they start off, yes, as a D CAT.

15 FLTLT ROSE: Do they progress at different timings, dependent on how often they can get into an aircraft?

20 WO2 THOMAS: Yes. So it’s dependent on aircraft availability versus when they’re at work, versus when they’ve got leave or anything that’s going to, I guess, preclude them from being inside the aircraft to get the skills done. There are some skills that we would use the simulator for, but the majority of them were reliant on the aircraft.

FLTLT ROSE: Which skills would you use in the simulator?

25 WO2 THOMAS: We had – at the time we had – when I first got to 5 Aviation in 2022 we had a – there was a noise limitation placed on the aircraft, or the gunnery specifically, due to the noise of the gun in the aircraft, so for that period we trained and qualified a lot of aircrewman through the simulator for door gunnery.

30 FLTLT ROSE: In terms of the fact that once they’re using the gun in the aircraft it’s too noisy for the aircrewman to safely practice that drill?

35 WO2 THOMAS: It was at the time, and there was – I’d have to go back and look at the documents and the testing that they did that came back, and at the time they were still trying to decide on – or we were waiting for an answer on how much door gunnery, or how many rounds we could specifically fire without crossing that threshold for noise. So there was an interim, I guess, plan developed so we could still qualify and progress people.

40

FLTLT ROSE: You said they joined 5 Aviation Regiment as a D CAT aircrewman.

45 WO2 THOMAS: Yes, ma’am.



FLTLT ROSE: I understand you just said it's individualised.

WO2 THOMAS: Yes.

5

FLTLT ROSE: But how long generally would someone be a D CAT before they were upgraded?

WO2 THOMAS: In accordance with the SI, they've got 12 months to attempt their upgrade. They've also got to do a six-monthly dual check during that period. So as a D CAT you do a six-monthly dual check, and that dual check then tells – or it gives the instructor the, I guess, the ability to then say what they need help in or development in.

15 FLTLT ROSE: What's a dual check?

WO2 THOMAS: So a dual check is – it's similar to a category assessment, minus a few things. So chapter 25 of the STANMAN dictates what has to be in that check, and then what has to be in the assessment, and we would assess them off that to say yes, they are progressing effectively, or they need help in hoisting, or an area that they need assistance in.

20 FLTLT ROSE: You said this is just for D CAT category aircrewman, this dual check.

25

WO2 THOMAS: Yes, and then once you progress through to C CAT then you do a 12-monthly category check.

FLTLT ROSE: Is it the case that once they're a C CAT it's another 30 12 months to a B CAT, or is that a different length of time - - -

WO2 THOMAS: It's a different length of time. That's stipulated in the UTAP as well. It talks about the expected time of progression. Some people are faster, but generally speaking we go off that progression.

35

FLTLT ROSE: So sometimes say you are a C CAT aircrewman, you'd still have an annual category check.

WO2 THOMAS: Yes.

40

FLTLT ROSE: But there's no expectation oftentimes that you'd be upgraded to a different category; is that correct?

WO2 THOMAS: Yes, so generally – and again, I'd have to refer to the document. I think it's approximately – it's two or three years that you 45

would then go to a B CAT aircrewman, which then means that you can then mentor more junior aircrewman, and then eventually it goes to an A CAT aircrewman.

5 FLTLT ROSE: If you're a D CAT does that mean that you cannot do tasks unsupervised?

WO2 THOMAS: Yes. You should be under supervision. That's the – what it stipulates in the SI. Yes.

10

FLTLT ROSE: How many aircrewman are required to be in a MRH-90 in flight?

15 WO2 THOMAS: It's dependent on the task. So the SI stipulates how many crew you need per – sorry, SI stipulates how many crew you need in the aircraft for a different task. So for hoisting, we require two crewmen. If they're transiting from airfield to airfield, for example, they don't need any crewmen in the back.

20 FLTLT ROSE: If there is just one aircrewman on a sortie, that can't be a D CAT because they can't do tasks unsupervised.

25 WO2 THOMAS: No, they should be a C CAT or above. There are times when they have, but they need to go through an authorisation process with the authorising officer, and have that understanding.

30 FLTLT ROSE: You mentioned before your role was the Regiment Standards Warrant Officer. What was your specific role in overseeing an aircrewman's progression through this UTAP?

35 WO2 THOMAS: So it depended on the tasks. Some tasks I would do with them. Other tasks the QAIs in the Squadron would do with them. So I think at the time there was originally three QAIs at the Squadron when I first got there, and then there was two. So they would do whatever tasks needed to be done in accordance with their progression in the UTAP, and then there was some tasks that can be observed or watched by a B CAT as a mentor.

40 FLTLT ROSE: In terms of number of personnel, so they had you as the Standards Warrant Officer.

WO2 THOMAS: Yes.

FLTLT ROSE: Then you said two QAIs.

45 WO2 THOMAS: Yes, in A Squadron.

FLTLT ROSE: In A Squadron.

WO2 THOMAS: Yes.

5

FLTLT ROSE: How many Squadrons were there in 5 Avn in 2022/23?

WO2 THOMAS: There was three. B Squadron, flying 139s, so they were, I guess, under a – we still – I still conducted a check on the 139 flight, but generally speaking they were under a civilian contractual kind of setting where their civilian instructors would instruct their aircrewman.

10

FLTLT ROSE: Was it A Squadron and B Squadron that had the MRH-90?

WO2 THOMAS: No, so B Squadron had 139s, A Squadron had MRH-90, and C Squadron was Chinook.

15

FLTLT ROSE: If we're just thinking then about A Squadron, so you said yourself as the Standards Warrant Officer, two QAIs.

20

WO2 THOMAS: QAIs, yes.

FLTLT ROSE: How many aircrewman?

WO2 THOMAS: Off the top of my head, originally when I first got there, probably a dozen, approximately.

25

FLTLT ROSE: Does that mean that there were less and less by the time it got to the end of 2023?

30

WO2 THOMAS: Yes, definitely by the time it got to the end of 2023 they started to transition to – down to Sydney or onto another aircraft, the Chinook, or yes, down to Sydney.

FLTLT ROSE: What oversight did the CO of 5 Avn have in terms of progression through these categories and the UTAP program?

35

WO2 THOMAS: Well, I guess that's the beauty of the UTAP, is if I say to the Standards Officer, you know, "This person is a B CAT aircrewman", then the CO can then understand what that person is capable of, and what they can provide to the capability. So the CO would be tracking it through the Standards Officer, and then he would also track the progression of people, or if there was any issues with people then we would raise that and say, "This person needs X, Y, Z".

40

45

FLTLT ROSE: Do you recall who the Regiment Standards Officer was for pilots in 5 Avn at that time?

5 WO2 THOMAS: Yes. MAJ Michael Perkins.

FLTLT ROSE: And who the CO of 5 Avn was then?

10 WO2 THOMAS: When I first got to 5 Aviation it was COL Chris McDougall, and then Andrew Lane has taken over – sorry, took over at the end of 2022/2023 – the start of ‘23.

FLTLT ROSE: So far we’ve talked just about D CAT and C CAT aircrewman. What are the other categories?

15 WO2 THOMAS: So it goes from an E CAT aircrewman is when you’re on training or under direct supervision on course, and then from there you progress to a D CAT once you’re given your brevet, and you’ve conducted your final assessment at the School of Army Aviation for aircrew there. Or  
20 alternatively, you can conduct that in Townsville if you’re on CH-47, sorry, and then from there you progress through the category systems from C to B to A. And then there’s the same category system for instructors. So you would conduct your instructor course as an E CAT instructor, and then once you had finished course, you would be a D CAT instructor.

25 FLTLT ROSE: You mentioned brevet. Could you just explain what that is?

WO2 THOMAS: Yes. So that’s just the aircrewman brevet.

30 FLTLT ROSE: And you get that once you finish at the Army Aviation Training Centre.

WO2 THOMAS: Yes.

35 FLTLT ROSE: If I could turn to Annexure A of your statement.

WO2 THOMAS: Yes.

FLTLT ROSE: Could you explain what this document is.

40 WO2 THOMAS: Yes, so this is the aircrewman skills logbook, and they’ve got – sorry, they, being aircrewman, have got 12 months to complete the aircrewman skills logbook from finishing course at Oakey to then being – sorry, completing the skills logbook. So this talks about basically the  
45 requirements of what an aircrewman needs prior to being, I guess,

operationally ready to progress, or ready to deploy for – yes, that’s a better term.

FLTLT ROSE: Is this different to the UTAP?

5

WO2 THOMAS: Yes, this is different to the UTAP. This is spoken about in the UTAP. So the UTAP talks about the aircrewman skills logbook, and ties it back to this, which is predominantly, I think, what the Foundation model is, from memory, and then from here they would then progress into other activities.

10

FLTLT ROSE: And they’ve got 12 months to complete these events that are listed in this.

15

WO2 THOMAS: Yes.

FLTLT ROSE: If we just look at some of the events, if you look at the air assault event.

20

WO2 THOMAS: Yes, ma’am.

FLTLT ROSE: It says the task is to participate in air assault formation orders.

25

WO2 THOMAS: Yes.

FLTLT ROSE: And then conduct aircrewman duties during formation flight day.

30

WO2 THOMAS: Yes, and NVD.

FLTLT ROSE: And then NVD, night-vision devices.

35

WO2 THOMAS: Yes.

FLTLT ROSE: Is that one sortie by day in formation, and one sortie under NVD at night?

40

WO2 THOMAS: Yes, I think from memory in the UTAP they have to do two events per item, but they are supervised by a QAI for those activities.

FLTLT ROSE: That’s because they’re D CAT still.

45

WO2 THOMAS: Yes, and they haven’t – they’re not qualified to conduct formation until they’ve flown with a QAI. So as I said previously, some of

these things like information - sorry, instrument flight – can be observed by a B CAT. They can do that. Whereas these certain parts of the skills logbook, sorry, which is the formation portion and door gunnery, from memory, those two events have to be supervised by a QAI.

5

FLTLT ROSE: Once these events or tasks are completed where are the records maintained that the aircrewman has completed these tasks?

10 WO2 THOMAS: So these get signed off, and then on the back page there's a spot for the Standardisation Warrant Officer to sign it off. So they would complete the events in the Squadron, or with me, or with one of the other QAIs as necessary, and then at the end of that they would then bring that to me. I would sign it. There's an AAR, an aircrew assessment report, that goes with it to say this person has completed all the required events in the skills logbook, and then that goes to the employment category manager at Oakey, who then submits - who puts those qualifications into PMKeyS, or the proficiency for the skills logbook into PMKeyS, and then from there that then goes down to the Career Management Agency, and then they put it into their pay, because they get a pay rise once this is complete.

15

20 FLTLT ROSE: Is it the case that they cannot be upgraded to a C CAT until they've completed the skills logbook?

WO2 THOMAS: Yes.

25

FLTLT ROSE: Is it the case that they cannot sit for their category check until they've completed the skills logbook?

30 WO2 THOMAS: Yes. I guess I'll caveat that with door gunnery. Due to those noise limitations at the time, door gunnery made it, I guess, somewhat more complicated because the Direction was that it has to be done – or they're afforded 12 months to complete it. At the time there was a - there's a document that was released to allow us to do door gunnery in the simulator, and as part of that there was a – the word escapes me, but there was a portion of time where we were upgrading them without door gunnery, but that was specifically listed in the AAR to say that this person has not conducted that activity due to noise limitations, et cetera.

35

40 FLTLT ROSE: You mentioned before the certificate you have to sign. Could you turn to the final page of that annexure?

WO2 THOMAS: Yes.

45 FLTLT ROSE: Is that the certificate you're referring to?

5 WO2 THOMAS: Yes. So it states there, “The Squadron Senior Aircrewman”. Previously the Standardisation Warrant Officer was a Warrant Officer Class 1, and then that was pushed to a Warrant Officer Class 2, but we did have Warrant Officer Class 2s in the Squadron, and then that shifted and changed, so that’s why it states that.

FLTLT ROSE: Is it the QAIs that conduct the category checks?

10 WO2 THOMAS: Yes.

FLTLT ROSE: Could you, as the Standards Warrant Officer, also conduct the checks if needs be?

15 WO2 THOMAS: Yes, I could.

FLTLT ROSE: And did you from time to time?

WO2 THOMAS: Yes.

20 FLTLT ROSE: If I can ask you some questions now about the aircrewman equipment.

WO2 THOMAS: Yes.

25 FLTLT ROSE: What night-vision devices did the aircrewman have on the MRH-90?

30 WO2 THOMAS: We were using ANVIS-9s at the time in a white phosphorous version.

FLTLT ROSE: Are they a goggle?

35 WO2 THOMAS: Yes. So it’s a, yes, binocular set of goggles that sits – connects to the top of our aircrew helmet, and then there’s a battery pack that feeds the goggles themselves.

FLTLT ROSE: This Inquiry has received some evidence about TopOwl. It’s not something that the aircrewman used.

40 WO2 THOMAS: No, they don’t use TopOwl.

FLTLT ROSE: Did you have a visor at all with any information on it?

45 WO2 THOMAS: No.

FLTLT ROSE: So you had a helmet.

WO2 THOMAS: Yes.

5 FLTLT ROSE: And that helmet had – what was connected to that helmet?

WO2 THOMAS: So on the helmet we've got the intercom lead, or the ICS lead, that would then connect to the communications system, and then the helmet itself has got a – they can choose to wear a face shield, which is  
10 mostly just for wind noise in the doorway, and then you've also got a visor, which is a clear visor, and then a tinted visor as well for day. At night, because of the goggles and where we have them positioned close to the eye so you can see better, we'd use a set of safety glasses.

15 FLTLT ROSE: So you would take the visor off?

WO2 THOMAS: Yes, it's got two slides; so either side, there's a – one side is for clear and then the other side is for tinted.

20 FLTLT ROSE: But when you were using the night-vision goggles, you'd remove the visor completely, so that the goggles sat on your eyes?

WO2 THOMAS: Yes, or as close as possible to the eye.

25 FLTLT ROSE: When you say “white phosphorous”, was that some kind of enhancement? What did the white phosphorous aspect do?

WO2 THOMAS: It changed the image I guess, from it used to be, like, a  
30 green-based image that you sort of see in movies, then they moved to a white phosphorous image, which was just a clearer – a clearer image, and more detailed.

FLTLT ROSE: When did the aircrewman get qualified on the use of this  
35 NVGs?

WO2 THOMAS: At course at Oakey, or in Townsville on CH-47 – sorry, no, that's wrong – they would've done it in Nowra at HATS on basic. So they do a day and a night phase down there, and then they would do the transition on MRH, so they would already be qualified on the use of the  
40 goggles. Then we just tell them about the MRH differences.

FLTLT ROSE: Were the category checks, did they involve assessing aircrewman's use of the NVGs?



WO2 THOMAS: Yes. So a category check has to be by night, in accordance with the MRH Standardisation Manual.

5 FLTLT ROSE: Prior to the incident on 28 July 2023, how many minutes of flying on these night-vision devices did an aircrewman have to complete within a certain amount of time, to remain, to maintain their currency?

10 WO2 THOMAS: It was point three, or 18 minutes, to remain current in accordance with the SI.

FLTLT ROSE: So you say 18 minutes in what period of time, 12 months?

WO2 THOMAS: In a three-month period, sorry.

15 FLTLT ROSE: So let me just understand this: so every three months, an aircrewman had to have at least 18 minutes on NVGs, to maintain currency?

20 WO2 THOMAS: Yes. If they didn't, then they would need to go up and do a check with a QAI. So if they went away, or on an extended period of absence, they would have to come back and fly with a QAI, for the QAI to say, "You are now safe to fly with NVGs again".

MS McMURDO: Was that eight zero minutes?

25 WO2 THOMAS: No, 18, sorry, ma'am.

MS McMURDO: Eighteen, 1-8. Thank you.

30 WO2 THOMAS: That all has changed now. I think at the start of this year, they've changed the requirements; but at the time, yes, that's what the requirement was.

FLTLT ROSE: What are the new requirements?

35 WO2 THOMAS: I'm not sure. I would have to have a look.

40 FLTLT ROSE: So just in terms of the timeline of this – and please tell me if you don't remember – after the incident on 28 July last year, is it your understanding that there were some changes made to the requirements for pilots under NVDs?

45 WO2 THOMAS: Yes, there was. Late last year, there were changes that came out for pilots, that was driven by the Defence Aviation Safety Regulations. And then they have also changed the aircrewman requirements, and that was at the start of this year.

FLTLT ROSE: But you're not aware exactly what the changes are, you can't recall?

5 WO2 THOMAS: I would have to look at the manual, sorry.

FLTLT ROSE: I assume that the requirements in terms of currency on NVGs, does that apply across all aircraft types?

10 WO2 THOMAS: Yes.

FLTLT ROSE: So it's not specific to MRH-90?

15 WO2 THOMAS: No, it's not.

MS McMURDO: Sorry, did you understand there was a connection between the crash and the change to requirements?

20 WO2 THOMAS: I don't know that, sorry, ma'am, no.

MS McMURDO: You don't understand that?

WO2 THOMAS: No, I'm not sure if it was.

25 MS McMURDO: It may have been, it may have been completely coincidental; is that what you're saying?

WO2 THOMAS: I'm unsure, ma'am.

30 MS McMURDO: Okay, thank you.

FLTLT ROSE: Did you make any recommendations about what changes should be made to the aircrewman currency requirements?

35 WO2 THOMAS: Yes, I did. At the end of last year, the Standards Officer from the Brigade – sorry, I think it was Avn Command – sent out an email asking for recommendations on what we thought and how to address the changes in accordance with the DASR and what we thought would be a good balance of change.

40 FLTLT ROSE: Do you recall what you thought would be the good balance?

45 WO2 THOMAS: Yes. I think at the time, they were – from memory, they were looking at a 10-hour requirement, and again, I'd have to read the

document, but there's a basic and an advanced kind of currency system now. And there's light data and things like that, that go into those currencies, as far as I'm aware.

5 So now from that, from the original email that was sent out, they were looking for a 10-hour requirement. I said that we should incorporate some, I guess, mission tasks; so whether it's external loading or hoisting, or clearances with the aircraft of less than thirty feet, and those sorts of things.

10 FLTLT ROSE: All under NVGs?

WO2 THOMAS: Yes, under NVGs.

15 FLTLT ROSE: When you say 10 hours, I'm just trying to understand the difference between. What's 18 minutes per three months, what's the 10 hours in relation to - - -

20 WO2 THOMAS: Sorry, the 10 hours. Again, I'd have to read the document properly – the new requirement is 10 hours, but there is – and because I don't work in the space at the moment – the new requirement has a basic qualification, which there's limitations on what you can conduct or do, with a basic currency, a basic NVD currency. Then there's an advanced currency that's separate to that.

25 FLTLT ROSE: So would that be 10 hours over 12 months?

WO2 THOMAS: No, three months. Still a three-month period, yes.

30 FLTLT ROSE: So that's a large increase: from 18 minutes to 10 hours, within a three-month period.

WO2 THOMAS: Yes.

35 FLTLT ROSE: So in terms of the sequence of this, the MRH-90 has been grounded prior to this requirement coming in?

WO2 THOMAS: Yes. So that requirement, again, is in for all aircraft types, so Chinook still follows that requirement as well.

40 FLTLT ROSE: And you're not sure whether your recommendations that you made were included in the new requirements?

WO2 THOMAS: No, I'm not sure.

FLTLT ROSE: I'd like to ask you some questions about training for aircraft emergencies.

5 WO2 THOMAS: Yes.

FLTLT ROSE: How often were the MRH-90 aircrewman assessed on the emergency procedures, when they were in 5 Avn in 22/23?

10 WO2 THOMAS: Every 12 months, they conduct emergency training in accordance with the category assessment – in accordance with the UTAP, sorry – sorry, not the UTAP, the Standardisation Manual. And then if they were a DCAT, they would do that six-monthly dual check and still do the same sort of events.

15 FLTLT ROSE: What does the emergency assessment entail?

20 WO2 THOMAS: So we conduct it in the aircraft, and it's predominantly just decision-making based on a event that we give to the aircrewman that's doing the assessment. So that could be, if we have an engine fire while we have a external load attached, or if the hoist survivor is in distress or something like that. Then we would give them scenarios, then they have to make a decision and then come up with a plan to kind of complete the assessment.

25 FLTLT ROSE: The Inquiry has heard evidence before about aircrew working together in terms of pilots and aircrewman in an MRH-90.

WO2 THOMAS: Yes.

30 FLTLT ROSE: Can you describe to me what level of independence an aircrewman has or doesn't have, to make decisions in emergencies such as one of the ones you've suggested?

35 WO2 THOMAS: A lot, I would say, because in those scenarios the pilot can't necessarily always see what's happening in the back, so that's just a piece of – sorry, that's just reliant on the aircrew's communication to say, "This is what's happening". Ultimately, it's the Captain's decision for most things. I say "most" because there are scenarios where the aircrewman can make the determination; for example, to jettison a load if it's a critical phase  
40 of flight then. They're afforded that opportunity to say, "I'm going to release this load", without talking to the pilot because it is endangering the aircraft, (indistinct), for example.

But, yes, I would say they're given a lot of agency in the back of the aircraft, but ultimately it's generally a communication between the pilot and the aircrewman.

5 FLTLT ROSE: At paragraph 26 of your statement, you refer to an aircrewman acting instinctively during an emergency.

WO2 THOMAS: Yes. So that's sort of what I was alluding to there, with the requirements on external loads and those sorts of things. So if we talk  
10 about being before flyaway, once the aircraft Captain has called "flyaway" or "committed" if they're on an approach; that basically means that from that point, they are committed to the landing if they have an engine failure of those sorts of things.

15 In those scenarios, that's where the aircrewman has the ability to say, "This load is endangering the aircraft", or "We've had an engine failure and I'm going to get rid of the load via the jettison on the MCU or the M-range".

FLTLT ROSE: What about decision-making in terms of opening or closing  
20 doors?

WO2 THOMAS: Yes, so that's reliant on the Captain's discretion. So we would ask for permission to open or close the doors. Part of that decision is based on speed of the aircraft. So the aircraft has to be below 80 knots  
25 for the MRH, to open and close the doors.

FLTLT ROSE: As an aircrewman, can you see any dials that show you how fast the aircraft is travelling, or do you have to ask?

30 WO2 THOMAS: You can, but it's difficult; it's sort of right up in the centre of the cockpit, is the analogue dial. But we would still ask, anyway.

FLTLT ROSE: Do you, in your experience, now that you've been flying MRH-90 for a while, do you have experience of knowing when it feels as if it's coming to the right speed to be able to open the doors?  
35

WO2 THOMAS: No, you can't feel it. And the difference is – and the difference is, you know, a matter of a knot sometimes, And a knot as in, you know, we could be at 81 knots versus 80 knots; we're not going to be  
40 able to know. So I would say to the pilot, "Confirm below 80", and the pilot would say, "Yes, I'm below 80", and then I can open the doors as required.

FLTLT ROSE: So when you said before there was a level of independence the aircrewman had in terms of decision-making in the cabin, that doesn't include opening or closing the doors?

5 WO2 THOMAS: No, it's on the aircraft Captain to give us that permission to open and close the doors.

FLTLT ROSE: Perhaps I'll take this one by one. If the doors are already open - - -

10 WO2 THOMAS: Yes.

FLTLT ROSE: - - - can the aircrewman close the doors without permission?

15 WO2 THOMAS: They can, but they need to confirm the aircraft speed first. So they would say, "Confirm you're below 80", and then they would say, "I'm closing the doors".

20 FLTLT ROSE: Just so I understand, there is issue with movement of the door, whether it's opening or closing it, it has to be at 80 or below?

WO2 THOMAS: Yes.

25 FLTLT ROSE: So it's not just a matter of opening it, it's also closing it, it has to be at 80 or below?

WO2 THOMAS: Yes.

30 FLTLT ROSE: Is there, in terms of communications between the aircrewman and the pilots - - -

WO2 THOMAS: Yes.

35 FLTLT ROSE: - - - is there times during a flight where communications are ceased?

40 WO2 THOMAS: Yes. So there are sterile cockpit procedures, dependent on what we're doing and the task at the time. So, for example, if we are on approach to a pad, or if we are on departure, then – and again, I'll use that flyaway and committed call – then there would be a sterile cockpit, which means we are only talking about things that sort of relate to that current activity. So that could be a hoisting sequence or an approach to a pad, or anything.

45

FLTLT ROSE: What if you were in a holding pattern, awaiting instructions to approach a target?

5 WO2 THOMAS: Then we can talk.

FLTLT ROSE: Is it the case that it's only using the essential words necessary to communicate, or is there chit chat?

10 WO2 THOMAS: When it's a sterile cockpit, then, yes, it is essential. So those are – Chapter 2 of the STANMAN talks about standard terminology and those sorts of things. So then we would – I mean, that would dictate, I guess, the words that we would use between the aircrewman and the pilot. Then if we're transiting or something like that, where it's a long period of time, then we would just be talking freely, generally.

15 FLTLT ROSE: If it was a sterile cockpit but there was still an emergency, could an aircrewman still talk, change the standard terminology, to announce that emergency and discuss it?

20 WO2 THOMAS: Yes. Generally speaking, we'd still use standard terminology, but yes, they can.

FLTLT ROSE: Can I ask you about the HUET training?

25 WO2 THOMAS: Yes.

FLTLT ROSE: I'm sorry, when I say "HUET", it's H-U-E-T; it's all capitalised.

30 WO2 THOMAS: Yes, so it's the Helicopter Underwater Escape Training.

FLTLT ROSE: What is that?

35 WO2 THOMAS: So every two years – at the moment, every two years we go and do a course. It's a day-long course, where they put you in a simulated mock-up aircraft and then that gets dunked underwater and tips upside down, and then it's on you to escape the aircraft, basically.

40 FLTLT ROSE: And it's a one-day training?

WO2 THOMAS: Yes.

45 FLTLT ROSE: How many dunks would you do, generally, in that day's training?

WO2 THOMAS: It's just changed now. It was six previously, and it's still six dunks for any initial qualification; and then once you have done the training, as long as you are still current within your two-year period, it's now four dunks.

5

FLTLT ROSE: I take it when you're saying it's in a simulated aircraft, if you're an MRH-90 aircrewman, you are on an MRH-90 simulated flight?

WO2 THOMAS: Yes. So you would still do same as the pilots, they move around in the seats, so they would still conduct escape training from a – they could be (indistinct) or bubble window, which is the circular windows on the back, or they could be on an MRH or next to an MRH door. Because there's every chance that one day they may be leading a ship in the back of an MRH, even if they are a Chinook pilot or an MRH pilot.

15

FLTLT ROSE: You've stated in at paragraph 29 I think it is, of your statement, that the worst-case scenario for aircrew is ditching into water by night.

WO2 THOMAS: Yes.

20

FLTLT ROSE: Can you please explain why that is?

WO2 THOMAS: Because you can't see anything, and there's already, I guess, disorientation by night, as far as your lack of ability to use your peripheral vision, because everything is dark.

25

FLTLT ROSE: So does that mean that you have more training on what to do if you are ditching into water at night?

30

WO2 THOMAS: You still do – the majority of people still close their eyes for most of HUET, because that's what they teach, because of that disorientation. Or if you crash into a dirty lake, you might not necessarily be able to always use your eyes. So the majority of the time, they teach to close your eyes. We do serials in HUET where you're blindfolded, so it's that simulation of a night-time environment.

35

FLTLT ROSE: And that's every two years?

WO2 THOMAS: Yes.

40

FLTLT ROSE: If I ask you some specific questions of the role of the aircrewman on MRH-90. Sorry, you said before there were obviously different categories of aircrewman. So is it the case that there's a senior



aircrewman and a junior aircrewman? Is that how it's categorised, if you've got two?

5 WO2 THOMAS: Yes, yes, there is.

FLTLT ROSE: What is the role of the senior aircrewman?

10 WO2 THOMAS: It's dependent on the task, but ultimately they are there to supervise the junior.

FLTLT ROSE: So is it that they're working together to achieve similar tasks?

15 WO2 THOMAS: Yes, in the aircraft, yes.

FLTLT ROSE: In the aircraft.

WO2 THOMAS: Yes.

20 FLTLT ROSE: So what are the responsibilities of the aircrewman? You said before it was about the cabin; if you could just explain what you meant?

25 WO2 THOMAS: Yes. So cabin management is probably the large part of it, as far as passenger briefing and making sure that passengers are secure and safe in the back. Then as part of that, you've also got load restraint. So we have to make sure that the aircraft is loaded. Then what feeds into that is the weight and balance of the aircraft, so we need to make sure that things are loaded into the aircraft appropriately, so that we remain within weight and balance.

30 Then outside of that, or sort of more broadly, we look at mission equipment, which is things like your hook and your hoist. Then we look at door gunnery and aerial gunnery sequences, where the aircrewman is utilising a weapons system. And also, we've got aircraft clearances and providing  
35 information and support to the aircraft Captain.

FLTLT ROSE: So some of those tasks are independent to the aircrewman, so the hoisting or - - -

40 WO2 THOMAS: Yes.

FLTLT ROSE: Is the weight and balance also the sole preserve of the aircrewman, or is that done in conjunction with the pilots as well?

WO2 THOMAS: They're taught to do it, and they provide that information to the pilot.

5 FLTLT ROSE: And in terms of the last thing you said, which was clearances, was it situational awareness as well?

WO2 THOMAS: Yes.

10 FLTLT ROSE: That's in conjunction with the pilots?

WO2 THOMAS: Yes. So I guess because of ultimately the way that the heli manoeuvres, the pilots often lose site objects or things out the back. So that's where the aircrew would provide a word picture and use the standard terminology, and give direction to the pilot to say, "Move here" or "move there" in order so that they could facilitate a landing or pick up a load, or pick up a survivor.

FLTLT ROSE: Where do the aircrewman sit in the MRH-90 cabin?

20 WO2 THOMAS: In row 7. I think I've put it in my statement, after paragraph 41, on page 7 of 8. So the aircrewman would sit in seats nine and 10.

FLTLT ROSE: That's called row 7, I see at the bottom.

WO2 THOMAS: Yes, ma'am, yes.

FLTLT ROSE: And they're facing forward?

30 WO2 THOMAS: Yes.

FLTLT ROSE: And all the other seats in the cabin are facing inwards?

WO2 THOMAS: Generally, that was the standard configuration, yes. So the MRH seating can be adjusted, but there's a set of row seating that can be placed in, which then means we can add another six seats to the aircraft.

FLTLT ROSE: So that would be rows 4, 5 and 6, which currently don't have seats in them, in this diagram?

40 WO2 THOMAS: Yes, yes.

FLTLT ROSE: Where would the aircrewman sit then, if you had rows in front of you there?

45

WO2 THOMAS: We can still sit in row 7, but it's easier to sit in row 4, or in row 6.

5 FLTLT ROSE: So if the standard configuration is that the aircrewman is in row 7, are you in a seatbelt?

10 WO2 THOMAS: Yes, the majority of the time. There's times where we need to get on the harness, setting up the task, or to provide information to the pilots. We can't see down the back of the aircraft if we're strapped into a seatbelt.

FLTLT ROSE: How quick can you get on harness?

15 WO2 THOMAS: Roughly a second or two.

FLTLT ROSE: Is it your – can you independently decide to go on harness, or do you need to have permission from the pilots for that?

20 WO2 THOMAS: We need to get permission from the pilots if we want to move onto harness.

25 FLTLT ROSE: Tell me whether this is standard practice or not. Is it the case that if you're not transiting on a long haul but actually doing a short sortie, that you would be always on harness just in case you need to move around the aircraft?

30 WO2 THOMAS: No. We should only be on harness when we need to conduct a task that requires us to be on harness. For everything else we should be in the seatbelt and then we just manoeuvre on the harness as required. So in 5 Aviation the standard, I guess, sequence was that the pilot would give a one-minute call from the landing point on the pad, and that would be the aircrewman cue to then move onto harness.

35 FLTLT ROSE: What about on take-off? Are you in the seatbelt or in harness then?

40 WO2 THOMAS: We'd be on harness to clear the aircraft and to make sure that there's sort of no other aircraft flying overhead, and then once the aircraft is in safe, kind of, stable flight away from the pad – sorry – then we'd move back into our seatbelt.

FLTLT ROSE: What about if you're flying in formation?

45 WO2 THOMAS: Majority of the time we'd be in seatbelt, at 5 Aviation we'd be in seatbelt and then move onto harness if we needed to.

5 FLTLT ROSE: What can you see when you're sitting in the seatbelt in that row 7 forward-facing seat, what can you see outside the aircraft if the doors are open?

10 WO2 THOMAS: If the doors are open, a lot. I mean, the MRH door is quite large, so generally speaking it's – your main priority is to provide feedback or to watch the aircraft in front in formation. And then with a general – a glance back, if we loosen our seatbelt or loosen our shoulder straps, and we can sort of lean out and see the aircraft behind us. But ultimately our priority is the aircraft in front.

15 FLTLT ROSE: When you say "a lot", is there some sort of degrees that you can suggest how much you can see forward or back?

20 WO2 THOMAS: I guess at a stab, if I'm – sorry, at a guess – if I'm sitting in my seatbelt, it's probably – I think I wrote in my statement about 120 degrees that you would have view outside the door.

25 FLTLT ROSE: If the doors are open and you're flying at night in formation, is it that you have your NVGs on that whole time?

30 WO2 THOMAS: Yes.

35 FLTLT ROSE: What about if the doors are closed and you're in your seatbelt, how much can you see?

40 WO2 THOMAS: You cannot see a lot. Probably – there's a small window in the door, depending on if you're on the harness – sorry, you said on the seatbelt, didn't you? It's probably about 30 degrees that you can see out a window. But it's very sort of fixed as far as where you sit and where the window is and what you can see out of that window.

45 FLTLT ROSE: So if you're sitting in seat 7 in your seatbelt, how far away is the window from you?

WO2 THOMAS: Roughly, from memory, about two arms, arm-and-a-half sort of length away.

FLTLT ROSE: Is it the case that you're always leaning forward to look through that window if the door's closed?

WO2 THOMAS: Generally, yes. Yes. Depending on the task. If we're transiting from Brisbane to Sydney and we're under instrument flight conditions or something like that, then we'll have the doors closed and we'll

be sitting in our seatbelt because there's no real danger outside the aircraft and we're being monitored and flown by ATC.

5 FLTLT ROSE: And if you're not in that situation, you say you're flying at night in formation, what's the position that you pose, that you're adopting as the aircrewman?

10 WO2 THOMAS: Generally we'd be in a seatbelt with shoulder harnesses sort of loosened so we can lean out and see the other aircraft.

FLTLT ROSE: When you said before you can't see a lot?

WO2 THOMAS: Yes.

15 FLTLT ROSE: And you also said – you gave evidence that your job is to look for the aircraft in front?

WO2 THOMAS: Yes.

20 FLTLT ROSE: How confident are you that you're able to perform that duty in that situation in the seatbelt?

WO2 THOMAS: With the doors closed or open?

25 FLTLT ROSE: With the doors closed?

WO2 THOMAS: Not very confident.

30 MS McMURDO: I think it's time for lunch. You'll be a little while yet, won't you?

FLTLT ROSE: Yes.

35 MS McMURDO: Yes, we'll adjourn now till 1.45. Thank you.

**HEARING ADJOURNED**

40 **HEARING RESUMED**

MS McMURDO: Yes, Ms Rose.

5 FLTLT ROSE: WO2 Thomas, before the break I asked you – and excuse me if this is paraphrasing – how confident can you be when you’re in your seatbelt in row 7 that you can see outside of the window in the MRH-90, to see to the outside? And your response was, “Not very confident”.

WO2 THOMAS: Yes.

10 FLTLT ROSE: In 2022 and 2023 in 5 Avn, what was the policy, or in fact the instructions, that dictated when doors could and couldn’t be opened on various different sorties?

WO2 THOMAS: As far as a daily sortie or specifically in relation to formation, sorry?

15 FLTLT ROSE: Well, let’s be specific then to formation.

WO2 THOMAS: Yes.

20 FLTLT ROSE: And you can tell me whether there’s a difference between day and night sorties.

WO2 THOMAS: Yes. So formation, predominantly the doors would be open at 5 Aviation.

25 FLTLT ROSE: Is it – how many ships in formation in 5 Avn, generally?

WO2 THOMAS: It’s completely task-dependent. If we are doing specific formation training, it’s generally just two aircraft. If the user unit or if an infantry unit wants a certain amount of people on board an aircraft, then we may need three or four, or it may be a mixed type formation where we’ll have Chinooks and MRHs, so it’s just completely task-dependent.

30 FLTLT ROSE: When you said before, normally the doors are open?

WO2 THOMAS: Yes.

35 FLTLT ROSE: Is that the same for day and night flying?

WO2 THOMAS: Yes.

40 FLTLT ROSE: Is that a Standing Instruction that the doors are open? Is it policy? Where does that come from?

WO2 THOMAS: I think in the operator manual it says, “Where practical they shall be open”. So if we are – unless we were – and I think I’ve written

45

5 in my statement that if we are in transit and we've got a large amount of space in between aircraft, then we may close the doors with the aircraft Captain's permission. Ultimately, if we're in formation and we are close, sort of, I would say less than – than at 10 rotor diameter, because we work off a rotor diameter, then we would have the doors open so you can see the preceding aircraft.

10 FLTLT ROSE: When you say "flying in transit", is transit a particular type of sortie, or can you be in transit on a short sortie?

15 WO2 THOMAS: You can be in transit on a short sortie. It's just a – I guess it's just a – it's weighing up what the priority is and how far the transit is going to be. So for Townsville, for example, if we were flying from 5 Aviation Regiment or at Hamel Lines to High Range Training Area, the doors would be, generally speaking, would be open so that the crewmen can see out. And then if they wanted to, they would close them past departure. So we would leave – leave from – from RAAF Townsville and then once the aircraft Captain had kind of called "fly away", where we're outside of that general airport vicinity, then we may close the doors and transit up to  
20 High Range with the doors closed.

FLTLT ROSE: So when does the transiting cease to the point where you would then open those doors again?

25 WO2 THOMAS: Once we get into the training area. So once we hit – in 5 Aviation there's a place called Thorntons Gap, which is where we enter the range, and at that point we would start to move into low flying areas and those sorts of things. So we would open the doors at that stage.

30 FLTLT ROSE: So when you say "low flying", is it – was it the standard practice then in 5 Aviation at that time, for when you're low flying, to have the doors open?

35 WO2 THOMAS: Yes.

FLTLT ROSE: Was it standard practice at that time, when you were night flying at low levels, to have the doors open?

40 WO2 THOMAS: Yes.

FLTLT ROSE: When you're wearing the night-vision goggles, what impact does that have on the vision that the aircrewman has outside of the aircraft, compared to when you fly during the day?

5 WO2 THOMAS: It's just a reduced field of view. So I couldn't quote the exact field of view, but it's – due to the fact that the goggles are there and the light source or the illumination is there, you've got a reduced field of view, so you're looking through the goggle tube.

10 FLTLT ROSE: So if you were flying in formation at night and you were flying low and you had night-vision goggles on and the doors were closed?

15 WO2 THOMAS: Yes.

20 FLTLT ROSE: What's your expectation of how much you could see outside of the window?

25 WO2 THOMAS: Like I said before, it would be a complete guess, but maybe 30 degrees out the window at that point. The field of view of the window would be the obstruction also of the goggles, if that makes sense. Once the door's open, then you could see a lot more. But yes, just due to that window and the positioning, it's very limited.

30 FLTLT ROSE: You said just before that it was the aircraft Captain who decides whether doors can be opened or closed.

35 WO2 THOMAS: Yes. In an aircraft, yes.

40 FLTLT ROSE: That's the aircraft itself?

45 WO2 THOMAS: Yes.

FLTLT ROSE: When you're flying in formation, is there a decision that's made in terms of all of the ships flying with doors open or doors closed?

WO2 THOMAS: Well, the standard was to fly doors open. And the operator manual, I believe, says, like I said before, "Where practical, the doors should be open".

FLTLT ROSE: So when it says "where practical", in your experience as an aircrewman, what situations, if any, have you flown in where it wasn't practical to have those doors open?

WO2 THOMAS: Again, if I was in – if we were in a transit or something like that, where it's a – if we're going to be sitting in the aircraft for a long period of time and the – if it's cold or the weather's bad or it's just a – it's a matter of, I guess, assessing the priority at the time and saying, "What's the priority at the moment?" Because it is fatiguing to sit in the wind with the doors open, especially by night and when it's cold.



FLTLT ROSE: So in terms of balancing priorities, as you just explained, if you're on a short sortie – sorry, what do you consider to be a short sortie?

5 WO2 THOMAS: It's situation-dependent, again. I think if we go out to do a, say, two-hour sortie, but we're going to be waiting to pick up passengers or something like that, then it could be – you know, we might be sitting in a transit or we could be sitting in a hold somewhere. And in which case we may close the doors in that scenario. But it's just completely scenario and  
10 situation-dependent.

FLTLT ROSE: Have you ever flown on a mission where you've had the doors closed for the majority of the mission?

15 WO2 THOMAS: No. Except for a transit, like I said. So an airfield to airfield or if we are flying from Townsville – I'll give you an example. So we flew from Townsville to Western Australia for support to the region over there, and majority of the time during that transit we had the doors closed because it's – there's not a whole lot to see and we're sitting up at  
20 1500, 2000 feet.

FLTLT ROSE: So if you're flying in a sortie that's approximately about half an hour or less and it's at night in formation over water?

25 WO2 THOMAS: I would have the doors open.

FLTLT ROSE: Would that be discussed in the mission planning briefs before the mission or it just standard practice, doors are open and doesn't need to be discussed?

30 WO2 THOMAS: It was standard practice at 5 Aviation.

FLTLT ROSE: Would it be recorded anywhere whether the doors were opened or closed on a mission?

35 WO2 THOMAS: I don't think so. Unless there was a specific reason for it, I can't imagine that it would be recorded.

40 FLTLT ROSE: What exactly are aircrewman scanning for when they're sitting in their seat, row 7, flying in formation? What is it that you're looking out for?

45 WO2 THOMAS: Specifically closure rates. So we have a minimum and the minimum is two rotor diameter from the aircraft in front of us and that will be given in formation orders. So they would say, "This is the minimum

5 that we would sit". And then depending on the situation, because there's things that come into it as far as if we are upwind or downwind. Dependent on the approach, then we might get less or more than three or five rotors. But generally speaking, we are looking for closure rates to the preceding aircraft.

FLTLT ROSE: So if you're ship 2, you're looking for closure rates from ship 1?

10 WO2 THOMAS: Yes.

FLTLT ROSE: And same as if you were ship 3, you're looking for closure rates for ship 2?

15 WO2 THOMAS: Yes.

FLTLT ROSE: How do you judge the distance of the rotor diameters?

20 WO2 THOMAS: So during the skills log book and then I guess over time we look at lineup features of the aircraft. So we go through a presentation process or a theoretical process of what we line up with the aircraft and what we're looking for as far as sight picture is concerned. And then when we fly the actual sorties in the skills log book sequences, we talk to them about, "That is three rotors", "That is five rotors", "That is two rotors". And then, generally – and then we have terms, so we'll call "closure" to the pilot, which is a standardised term, which means that's our challenge to the pilot to say, "You're getting too close", and then the pilot would either say – would then move back.

30 FLTLT ROSE: If, for example, the pilot has lost the horizon, is that communicated to the aircrewman?

WO2 THOMAS: If they're aware of it, then yes.

35 FLTLT ROSE: What assistance can you provide to the pilots in that situation?

40 WO2 THOMAS: We might be able to just, I guess, provide them with assurance or provide them with the confidence that we can still see and still we are flying at a level. But generally speaking, if they lose the horizon and they're aware of it, then they would refer to instruments and they would say, "I'm on the clocks". And then they would move to instrument flight and we would conduct an inadvertent IMC drill, which again is given in orders, to say if that is the case then this is what you are going to do.

45

FLTLT ROSE: Inadvertent IMC, what does that stand for?

5 WO2 THOMAS: Yes, sorry. So it's basically in bad weather or if you are – you can't see the horizon and those sorts of things, then you're going to go to a – you're going to fly off the instruments and use the aircraft instruments.

10 FLTLT ROSE: Have you ever been in a situation yourself where you think the pilot has lost the horizon but doesn't realise it yet?

WO2 THOMAS: No, not from memory.

FLTLT ROSE: Are you trained what to say to pilots if that does occur?

15 WO2 THOMAS: We would just challenge them, and that's just a – it's just a challenge and response. So we might say, "You're turning left", or "You're turning right", or "You're descending", or "You're climbing". And then that's on them to say, "No, I'm not", or "This is what I'm doing".

20 MS McMURDO: Just while there's that break. Now, you told us about the doors opening and closing has to be at 80 kilometres or below?

WO2 THOMAS: 80 knots, ma'am, yes.

25 MS McMURDO: Yes, sorry. To travel with the door open, does it have to be at 80 kilometres per hour or below, or not?

WO2 THOMAS: No - - -

30 MS McMURDO: Or it can be over 80 kilometres?

WO2 THOMAS: It's just that transition between.

MS McMURDO: So it can be faster?

35 WO2 THOMAS: Yes. So there's different configurations, ma'am. So if the ramp is open, then that changes our speed limitation as well. Generally speaking, it was 140 knots with the doors open. If we wanted to go from the doors open to closed, we would stay – we would go below 80 knots,  
40 we'd close the door, and then they accelerate.

MS McMURDO: Yes, thank you. Yes, thank you.

45 FLTLT ROSE: You mentioned earlier in your evidence about there being a senior aircrewman and a junior aircrewman?

WO2 THOMAS: Yes.

5 FLTLT ROSE: Which side of the aircraft does the senior aircrewman usually sit on?

10 WO2 THOMAS: Situation-dependent. And I have written in my statement that majority of the time the junior would be on the right-hand side because it's the active side, so they get more exposure to calling the aircraft in or conducting a hoist or doing the external load work. And then probably every – roughly 25 per cent of the time I would go onto the right just to maintain my own skills and still be able to conduct the task. But again, that would be task-dependent. If there was a high-profile task or a more difficult task, then I might put the junior on the left-hand side and I'll sit on the right.

15 FLTLT ROSE: Why is the right-hand side more active?

20 WO2 THOMAS: Because the right-hand side is the aircrewman that's calling the aircraft into a pad. So the pilot will lose sight or at some point, if the pilot needs to manoeuvre the aircraft, then the right-hand crewman will be the person that calls the aircraft or manoeuvres or uses the hoist procedures to move the aircraft into position.

25 FLTLT ROSE: So is that the same for pilots, that the active side is the right-hand side?

30 WO2 THOMAS: No, not all the time. So they swap back and forward and sometimes the Captain will sit on the right, sometimes the Captain will sit on the left. It just – it's completely dependent on what they brief.

FLTLT ROSE: Feel free to have some water if you feel?

WO2 THOMAS: Yes. No, it's all right. Thank you.

35 FLTLT ROSE: Just some questions about your personal experience in flying MRH-90s. Have you ever experienced any serious emergencies?

40 WO2 THOMAS: Aside from things like bird strikes and those sorts of things, no, ma'am, I haven't experienced anything severe.

FLTLT ROSE: How common is a bird strike?

45 WO2 THOMAS: Bird, or bat strike, probably more specifically, just due to Townsville and night time flying, it's – roughly we probably get in a – in my time in Townsville I've probably struck two or three bats in the two

years that I was there. Granted, I wasn't flying as much as the people in the Squadron, but generally speaking, yes.

5 FLTLT ROSE: Is it an issue when they strike a particular part of the aircraft? Is it just the window for the pilots or is it an issue if it strikes anywhere on the aircraft?

10 WO2 THOMAS: Well, if it strikes anywhere, then we follow the checklist procedures and then land the aircraft as soon as practicable and have a look at the damage or assess the damage, and then it'd be assessed by a maintenance crew.

FLTLT ROSE: So what damage can a bird or bat do to the aircraft?

15 WO2 THOMAS: Honestly, it's completely dependent on where it hits, ma'am.

20 FLTLT ROSE: Have you ever experienced any illusions or limitations using the night-vision goggles?

25 WO2 THOMAS: Illusions, yes. Limitations generally get found because we do a pre-flight with night-vision goggles prior to going flying. So you would find any sort of, I guess, maintenance issues or issues with the goggles on your before flight. But, yes, I have seen illusions and those sorts of things.

FLTLT ROSE: What are the illusions for aircrewman wearing those ANVIS-9 goggles?

30 WO2 THOMAS: I'd have to look at – there's about – from the top of my head, there's sort of half a dozen or 10 different illusions that you can have. They're pretty well documented, and there's a ANVIS-9 book that goes through what the illusions are, and different sorts of illusions.

35 FLTLT ROSE: Is one of them that you can lose the horizon yourself?

WO2 THOMAS: Yes.

40 FLTLT ROSE: Or in fact, see false horizons?

WO2 THOMAS: Yes. I think it's more so false horizons than losing it because you can generally see it. It's more so if you've got a mountain range, or cloud cover, or something like that, the top of that, across the top of the sky, can sometimes give you the illusion that you're looking at a

horizon that's slanted when it's actually not, because you're looking at a mountain range or something like that.

5 FLTLT ROSE: You also mentioned in your statement, "autokinesis" at paragraph 44 and 45.

10 WO2 THOMAS: Yes. So that's just the light source – if I can refresh my memory of it – yes, it's just a light source. That generally a crewman or a pilot will see a light source in the distance, and then may change their attitude or their flying due to the light source, and thinking that that's moving when they're not, or when they are - - -

15 FLTLT ROSE: So is autokinesis that the light source doesn't actually exist? It's a phantom?

WO2 THOMAS: No, the light source does exist, but the light source may or may not be moving, so then they adjust their profile because of what they think they are seeing.

20 FLTLT ROSE: How common was it that you'd experience those illusions?

25 WO2 THOMAS: Pretty rare. Maybe once a year, if you're sort of lucky. Generally speaking, I think you sort of know when they're happening because you can cross-reference and you turn your head and go, "Oh, no it's not. It's still there, or it's moving somewhere else, or – again, that's - - -

FLTLT ROSE: And at that point do you then check – sorry, I cut you off.

30 WO2 THOMAS: No, that's fine, ma'am.

FLTLT ROSE: At that point, how – do you then check with your other aircrewman or the pilots whether you are in fact having an illusion?

35 WO2 THOMAS: Yes. Generally you would say, "Is that light moving?", or "What's that light over there?", or there'd be sort of a challenge and response, and then it would be, "Oh, that's X or Y".

40 FLTLT ROSE: I'd like to ask you some questions now about the personnel that lost their lives on 28 July last year.

WO2 THOMAS: Okay, ma'am.

45 FLTLT ROSE: Paragraph 47 of your statement, you say that you knew CPL Alex Naggs.

WO2 THOMAS: Yes, so I put Alex Naggs through course when he came through Oakey as an instructor.

5 FLTLT ROSE: Do you remember what year that was?

WO2 THOMAS: No. I'd have to go back and look at the sortie list.

FLTLT ROSE: Was this before you went to 5 Avn in your – sorry, the Standards Warrant Officer role?

10 WO2 THOMAS: Yes.

FLTLT ROSE: So prior to 2022.

15 WO2 THOMAS: Yes, it would've been at a rough guess sometime around 2018 to 2021. Somewhere in there.

FLTLT ROSE: Did you specifically train him?

20 WO2 THOMAS: Yes.

FLTLT ROSE: Did you have any concerns about his capabilities as an aircrewman?

25 WO2 THOMAS: Not at all.

FLTLT ROSE: Did you have to give him remedial training on anything at any point?

30 WO2 THOMAS: Yes, I did give him remedial training. Again, as I've written in my statement, I can't remember exactly what that was for. I could go back through the sortie profiles and figure out exactly what it was for. Whatever the issue was, we corrected the issue on course, and he then went out and subsequently finished the course with no further issues.

35 FLTLT ROSE: Is it fairly standard for trainees to require remedial training at some point in their training cycle?

WO2 THOMAS: So I was at Oakey for five years, and I think I did remedial on four different people. So it's not uncommon, no.

40 FLTLT ROSE: How large is generally a class of aircrewman at Oakey?

WO2 THOMAS: Generally, it's about four people per course.

45

FLTLT ROSE: How often are the courses run?

5 WO2 THOMAS: During – during the time that I was at SAA, we were running them more frequently because 6 Aviation were transitioning to MRH-90. But, generally speaking, it's two or three a year. Generally, two a year.

10 FLTLT ROSE: In paragraph 48 you said that you did know WO2 Phil Laycock.

WO2 THOMAS: Yes.

FLTLT ROSE: How did you know him?

15 WO2 THOMAS: I put him through course. I'd also met him previous to that, just through work, and then also I'd dealt with him on a semi-regular basis between our jobs as – because he was a Standards Warrant Officer at the same time, so we dealt with – or we discussed quite a lot to do with the gunnery gap training that existed when we were in the job.

20 FLTLT ROSE: When you say you were both Standards Warrant Officers at the same time, where was he posted at?

25 WO2 THOMAS: So he was at 6 Aviation Regiment as the Standards Warrant Officer, and I was at 5 Aviation Regiment as the MRH Standards Warrant Officer.

FLTLT ROSE: And he was the MRH Standards Warrant Officer, you said.

30 WO2 THOMAS: Yes, so 6 Aviation only had MRH-90, so due to the fact that Townsville had two different aircraft, we had two separate Standards Warrant Officers.

35 FLTLT ROSE: When you said you trained him, is that in terms of his conversion?

WO2 THOMAS: Yes, so he did his MRH transition in Oakey. So he came up to do the transition once he'd ceased flying Black Hawks.

40 FLTLT ROSE: You don't recall when that was?

WO2 THOMAS: No, I'd have to have a look at the - - -

45 FLTLT ROSE: Did you have any concerns about his capabilities as an aircrewman?



WO2 THOMAS: No. No.

5 FLTLT ROSE: In paragraph 49 you said that you knew LT Max Nugent.

WO2 THOMAS: Yes, so I briefly flew with him, I think maybe once or a couple of times, at Oakey and I think we did live hoisting together on one sortie, and yes, I flew with him there.

10 FLTLT ROSE: You didn't fly with him at 5 Avn?

WO2 THOMAS: No, so he was – I think he was there when I first got to 5 Aviation, and then from memory I think he left a few months after I got there, but I never flew with him.

15 FLTLT ROSE: Did you have any concerns about his capabilities as a pilot?

WO2 THOMAS: No.

20 FLTLT ROSE: At paragraph 50 you state that you did not know CAPT Danniell Lyon.

WO2 THOMAS: No, I didn't know him.

25 FLTLT ROSE: Those are my questions.

MS McMURDO: Thank you, FLTLT Rose.

30 Is there any application to cross-examine? Why am I not surprised.

LCDR GRACIE: I only have one question, ma'am. Thank you.

MS McMURDO: Okay.

35

**<CROSS-EXAMINATION BY LCDR GRACIE**

40 LCDR GRACIE: Warrant Officer, you were asked some questions by Counsel Assisting about a flight duration of 30 minutes at night over water, and whether you'd have the doors open, and you said "Yes".

WO2 THOMAS: Yes.

LCDR GRACIE: To that effect. But doesn't the standard operating procedure require the doors to be open for any flight of 20 minutes or less duration?

5 WO2 THOMAS: I would have to look at the document. Sorry, sir.

LCDR GRACIE: You don't know?

WO2 THOMAS: No.

10

LCDR GRACIE: Okay. No further questions there. Thank you.

LCDR TYSON: Ma'am, just about two or three questions.

15 MS McMURDO: Yes.

**<CROSS-EXAMINATION BY LCDR TYSON**

20

LCDR TYSON: Warrant Officer, I'm one of the representatives of CPL Alex Naggs. Warrant officer, I just want you to assume the scenario where you're an aircrew. You're on duty in an MRH-90. The aircraft is in transit. It's at night. The doors are shut. You're seated inside with your seatbelt. In that scenario, as one of the aircrew, do you have the NVD on and operating?

25

WO2 THOMAS: Generally speaking, yes.

30 LCDR TYSON: Even in that scenario, when you're inside the aircraft?

WO2 THOMAS: Yes, unless there was a reason to take the goggles off, and then we would communicate that with the pilot and say – we usually say, "Dead goggle", which is a direction given by the aircraft Captain.

35

LCDR TYSON: You gave some evidence about faults affecting NVD and also illusions that you can have.

WO2 THOMAS: Yes.

40

LCDR TYSON: Can also meteorological conditions like cloud cover and so forth impact on your ability to see through those night-vision devices at night?

WO2 THOMAS: Well, I guess they can create illusions, but a cloud is still a cloud, so you can't see through it with goggles. You can get light reflecting off cloud and those sorts of things, but it's just dependent on cultural lighting and those sort of - - -

5

LCDR TYSON: But there can be external environment impacts on your ability to see?

WO2 THOMAS: Yes, there can.

10

LCDR TYSON: You also gave some evidence about this phrase, "where practicable", the decision to open or close the doors of a helicopter. Can you explain who makes the decision, and when is it made, about whether or not doors are open? Is that made pre-mission as part of the planning, or is the decision made during the course of the mission, or is it a combination of the two? Can you just explain that, please?

15

WO2 THOMAS: Yes, it's a combination of the two. If we are – if the weather is really bad, or if it's super cold, we might say to the pilot, "Hey, look, you know, depart with the doors closed", or whatever the case is, and then that's just a communication thing between us and the pilots to make a decision, and say, "I'm making this decision, based on X, Y, Z". And it's ultimately up to the aircraft Captain, yes, but they will take, I guess, the value judgment from the person at the back.

20

LCDR TYSON: One of the factors that plays into that decision is something as simple as it's cold flying at night.

25

WO2 THOMAS: It can be, yes.

30

LCDR TYSON: Thank you. No further questions, ma'am.

MS McMURDO: Thanks, LCDR Tyson. Any other applications to cross-examine? No? Thank you. The witness can be excused?

35

FLTLT ROSE: Thank you. Yes, please.

MS McMURDO: Thank you very much, WO2 Thomas, for your assistance.

40

WO2 THOMAS: Thank you, ma'am.

MS McMURDO: You are free to go now. Thank you.

45

**<WITNESS WITHDREW**

5 COL STREIT: Thank you, Ms McMurdo. I call MAJ Michael Perkins.

**<MAJ MICHAEL RICHARD PERKINS, Affirmed**

10 **<EXAMINATION-IN-CHIEF BY COL STREIT**

15 COL STREIT: MAJ Perkins, there's a fresh glass immediately to your left. Feel free to use that one, and move that other glass away, and please, if you wish to pour yourself a glass of water.

MAJ PERKINS: Thanks.

20 COL STREIT: MAJ Perkins, I'm just going to commence by asking some preliminary questions, and then I'll draw your statement to your attention. First, can you just indicate to the Inquiry your rank, full name, and current unit.

25 MAJ PERKINS: MAJ Michael Richard Perkins, and I'm currently at the Australian Command and Staff Course at the Australian Defence College.

COL STREIT: You're undertaking at the moment a period of long-term schooling for 12 months; is that right?

30 MAJ PERKINS: Yes.

COL STREIT: In relation to your appearance here today, you were sent some documents by the Inquiry; is that correct?

35 MAJ PERKINS: Yes.

COL STREIT: One of those documents was a section 23 Notice which required your appearance here today to give evidence.

40 MAJ PERKINS: Yes.

COL STREIT: One document was an extract of the Inquiry's Directions.

45 MAJ PERKINS: Yes.

COL STREIT: One document was a copy of my Instrument of Appointment.

MAJ PERKINS: Yes.

5

COL STREIT: Another document was a Frequently Asked Questions, Guide for Witnesses in IGADF Inquiries.

MAJ PERKINS: Yes.

10

COL STREIT: I understand you've also received a Privacy Notice for Witnesses Giving Evidence in Inquiries.

MAJ PERKINS: Yes.

15

COL STREIT: In preparation for your appearance here today, you completed a statement. Is that correct?

MAJ PERKINS: Yes.

20

COL STREIT: I ask that you be shown this document. Just take a moment to look at that document, and I'll ask you some questions. Is that document a statement made by you?

MAJ PERKINS: Yes, it is.

25

COL STREIT: Is it dated 10 April 2024?

MAJ PERKINS: Yes, it is.

30

COL STREIT: That is the date you signed it electronically?

MAJ PERKINS: Yes.

35

COL STREIT: And it comprises 110 paragraphs.

MAJ PERKINS: That's correct.

COL STREIT: And 14 pages.

40

MAJ PERKINS: Yes, including the signature on this.

COL STREIT: In that statement, parts of the statement are highlighted in yellow font; is that correct?

45

MAJ PERKINS: Yes.

5 COL STREIT: Do those highlights in yellow font comprise the questions that you were asked by Counsel Assisting in the preparation of your statement?

MAJ PERKINS: Yes, so I was provided a kind of a draft document with those yellow sections highlighted as the questions that I was to respond to.

10 COL STREIT: In preparation for your statement, what appears under each highlighted part in your statement is your responses to the question immediately above; is that right?

15 MAJ PERKINS: That's correct, yes.

COL STREIT: Is there anything that you wish to add to your statement or amend?

20 MAJ PERKINS: Not at this stage.

COL STREIT: Thank you. I tender the statement.

25 MS McMURDO: MAJ Perkins' statement will be Exhibit 8.

**#EXHIBIT 8 - STATEMENT BY MAJ PERKINS DATED 10/04/24**

30 COL STREIT: Thank you. MAJ Perkins, feel free to refer to your statement as I move through questions in relation to particular areas, and I can see in your statement you've expressed in different areas where you considered something was beyond your subject matter expertise.

35 MAJ PERKINS: Yes.

COL STREIT: But when we arrive at those matters I may nonetheless ask you to express your opinion about certain things, based on your experiences.

40 MAJ PERKINS: Yes, okay.

COL STREIT: In order to set the foundation for that, I'm just going to ask you some questions about your background experience in the military.

45 MAJ PERKINS: Yes, no worries.

COL STREIT: Do you recall when you were first appointed to undertake officer training in the Army?

5 MAJ PERKINS: Yes, 31 August 2005.

COL STREIT: Sorry, Major, can I just ask you to maybe bring the microphone a little bit closer to you, if that's possible. I'm just having a little difficulty hearing you.

10

MAJ PERKINS: Sorry.

COL STREIT: Now, that was officer training conducted through the Royal Military College Duntroon.

15

MAJ PERKINS: Yes.

COL STREIT: When you completed that training, what happened next? As in, what training did you then undertake?

20

MAJ PERKINS: I went to basic flying training school in Tamworth.

COL STREIT: When did you, I suppose, first become aware that you were going to undertake training to be a pilot?

25

MAJ PERKINS: Sorry, I don't - - -

COL STREIT: When you went to Duntroon and commenced your officer training, did you already know that following Duntroon you were going to go and do pilot training?

30

MAJ PERKINS: Yes.

COL STREIT: You ultimately were trained on the Kiowa helicopter.

35

MAJ PERKINS: Yes.

COL STREIT: In paragraph – looking at paragraph 11 of your statement, you say you graduated on the Kiowa on 2 October 2009; is that correct?

40

MAJ PERKINS: Yes, that's correct.

COL STREIT: You subsequently posted to B Squadron, 5 Aviation Regiment in May 2011; is that right?

45

MAJ PERKINS: Yes, that's correct.

5 COL STREIT: In between graduating on the Kiowa in October 2009 and being posted to B Squadron, 5 Avn in May 2011, did you fly any aircraft during that period?

10 MAJ PERKINS: Yes. So there was a backlog of pilot trainees at the time so they generated a Kiowa Training Troop at Oakey, and so some of the aircraft there that were normally used for training, we used for basically keeping pilots current while they were holding and waiting to go to a subsequent type.

COL STREIT: I see. You transitioned to MRH-90 in 2014; is that correct?

15 MAJ PERKINS: Yes, that's correct.

COL STREIT: You then flew MRH-90 at 5 Aviation Regiment until about 2015.

20 MAJ PERKINS: Yes.

25 COL STREIT: You completed a Qualified Flying Instructor's course in 2015, and then instructed ab initio students on the Kiowa helicopter. Is that correct?

MAJ PERKINS: Yes, that's correct.

COL STREIT: Where was that? Where did you do that instructing?

30 MAJ PERKINS: In Oakey.

COL STREIT: You then, at paragraph 14 of your statement, say you moved back to MRH-90 in May 2016.

35 MAJ PERKINS: Yes.

COL STREIT: Did you post back to 5 Aviation Regiment at that time?

40 MAJ PERKINS: No. So that was into MRH-90 Wing in Oakey.

COL STREIT: So that was part of the Army School of Aviation?

MAJ PERKINS: Yes. Sorry, School of Army Aviation.

45 COL STREIT: School of Army Aviation. Thank you. You've been a



qualified – you’ve been an MRH-90 Qualified Flying Instructor since when? When did you first obtain that qualification?

5 MAJ PERKINS: I don’t have that information in front of me, I’m sorry.

COL STREIT: All right. But you were certainly – in 2016 you moved back into flying an MRH-90 at Oakey. Were you instructing at that time?

10 MAJ PERKINS: So I went back and did – I’m not sure if I did a refresher course or not, like, whether I was required to in terms of how much time I’d had away from the platform. If I didn’t do a refresher course, then I would’ve done the requalification training on MRH-90.

15 Then I subsequently did what’s called an MRH-90 instructor stand, which is kind of a post-graduate qualification for people that are already Qualified Flying Instructors, and teaching you how to instruct on the MRH-90, as opposed to another platform.

20 COL STREIT: I see. I appreciate this is some eight years ago, so thank you for your recollection of your evidence. In paragraph 14 of your statement, you say you were a Qualified Flying Instructor until the early retirement of the MRH-90 fleet on 29 September 2023; is that correct?

25 MAJ PERKINS: So that’s the date of the fleet retirement.

COL STREIT: Yes.

30 MAJ PERKINS: I exited 5 Aviation Regiment in early August to take long service leave.

COL STREIT: I’ll return to that shortly. At paragraph 15, you say you were posted to the 5th Aviation Regiment in January ’22 as the Regiment Standards Officer.

35 MAJ PERKINS: Yes.

COL STREIT: Can you just explain, in broad terms, what is the Regiment Standards Officer?

40 MAJ PERKINS: So the Regiment Standards Officer is the senior flying instructor for the Regiment. So my job is to support the Commanding Officer in the provision of capability, through the technical control of the unit instructors; oversight of unit training and checking functions; providing advice to the Commanding Officer on, kind of, technical publication type

issues; and assessing pilots and flying instructors in the Regiment, with the appropriate delegation.

5 COL STREIT: We'll return to that topic of your role shortly, but just very briefly: did you have people reporting to you directly at 5 Aviation, in that role?

10 MAJ PERKINS: Yes. So I had WO2 Karl Thomas; and same rank, Rob Nelson as the two Regiment Standards Warrant Officers.

COL STREIT: Did you have any MRH-90 QFIs, Qualified Flying Instructors, at 5 Aviation Regiment; did they report to you as well?

15 MAJ PERKINS: No, they don't report to me directly. They are in the Squadron, so they report to the Squadron OC.

COL STREIT: Yes.

20 MAJ PERKINS: I have technical control over them, in terms of how flying instruction is done; and I have the ability to influence that, but they don't report to me.

25 COL STREIT: I see. At paragraph 14, you set out in a number of subparagraphs, your experience in terms of hours as a pilot.

MAJ PERKINS: Yes.

30 COL STREIT: At the time of the date of the statement, you've got a total of 2856 total hours as a pilot.

MAJ PERKINS: Yes.

35 COL STREIT: And 705 night; is that a reference to 705 night sorties or flights?

MAJ PERKINS: Night hours.

40 COL STREIT: Night hours. At paragraph 16(c) you say "522 NVD". Is that a reference to 522 hours operating night-vision devices?

MAJ PERKINS: Yes, that's correct.

COL STREIT: 428 hours in the simulator.

45 MAJ PERKINS: Yes.

COL STREIT: You then say, at 16(e), you say you have 1265 hours on the MRH-90 aircraft. So given your total hours of 2856, at 16(a), that's a reference to hours on all aircraft, is it?

5 MAJ PERKINS: Yes, that's all types.

COL STREIT: All types. Thank you. So returning then to 16(e), 1265 hours on MRH-90 aircraft?

10 MAJ PERKINS: Yes.

COL STREIT: And in relation to that total number of hours, 338 hours in the simulator.

15 MAJ PERKINS: That's two separate things. So 1265 in the aircraft, and 338 in the simulator.

COL STREIT: Thank you for clarifying that. Then at 16(g) you say, 708 hours as an instructor, MRH-90.

20 MAJ PERKINS: Yes.

COL STREIT: So is that a reference to you being in the aircraft instructing another pilot during a flight?

25 MAJ PERKINS: Yes. So they're not cumulative. So an hour flown in the aircraft can either be flown as an instructor or not as an instructor.

COL STREIT: I see.

30 MAJ PERKINS: So some of those 1265 plus 338 were flown as an instructor; 708 of those were flown as an instructor.

COL STREIT: I see. 1133 hours as an aircraft Captain on MRH-90.

35 MAJ PERKINS: Yes.

COL STREIT: And 1453 hours as a Captain total; so that's a Captain on all aircraft?

40 MAJ PERKINS: Yes.

COL STREIT: So given that significant quantity of hours, particularly in relation to MRH-90, would you regard yourself as an experienced MRH-90 pilot?

5 MAJ PERKINS: Yes.

COL STREIT: Your qualifications in terms of category, at 17(a) you say you have a Category A Qualified Flying Instructor Rating. Is that on MRH-90?

10

MAJ PERKINS: Yes, it is.

COL STREIT: And you are a Category A pilot. Is that on MRH-90?

15 MAJ PERKINS: Yes.

COL STREIT: If I'm doing my maths correctly, that experience gained in relation to MRH-90 was something you started back in 2014 when you transitioned to MRH-90. Is that correct?

20

MAJ PERKINS: Yes, that's correct.

COL STREIT: So up until the time you left – well, ceased flying MRH-90, your experience starts in 2014 and finishes when, which year did you stop flying MRH-90?

25

MAJ PERKINS: In August 2023.

COL STREIT: Right, thank you. At paragraph 17(d) of your statement, there's a couple of acronyms: UMTP/NTS facilitator. Can you just explain what that means?

30

MAJ PERKINS: Yes. So UMTP is Unit Maintenance Test Pilot, and NTS facilitator is a Non-Technical Skills facilitator. So I facilitated training on Non-Technical Skills, or human factors, in aviation.

35

COL STREIT: In relation to Unit Maintenance Test Pilot, what aircraft was that in relation to, or is not aircraft - - -

40 MAJ PERKINS: MRH-90.

COL STREIT: MRH-90, thank you.

MAJ PERKINS: The NTS facilitator is platform-agnostic. That's a separate qualification, not related to flying.

45

COL STREIT: I see.

MAJ PERKINS: Yes.

5

COL STREIT: So a Unit Maintenance Test Pilot on MRH-90 qualification, what does it qualify you to do?

10 MAJ PERKINS: So you can perform certain check flights after maintenance; so if maintenance is conducted, it may or may not require a check flight to be conducted. Then once you have the Unit Maintenance Test Pilot qualification, then you are capable of conducting those check flights as aircraft Captain.

15 COL STREIT: Conducting a check flight in that circumstance, is that really saying that maintenance undertaken on an MRH-90, you, as a qualified maintenance test pilot, would then take that aircraft out for a flight, to check as to whether the maintenance issue has been fixed?

20 MAJ PERKINS: Yes. So there's a very long list of check flights, and they all have a schedule that you conduct. So depending on what the maintenance was, then you would conduct those steps to confirm that whatever had been done had been done correctly, or was performing the function that it was supposed - - -

25

COL STREIT: But if you formed the view that it was conducted correctly, then is it the case that that aircraft then would just be returned to normal flight service within the Regiment?

30 MAJ PERKINS: Yes, so that aircraft would then become serviceable, provided that was the last maintenance item required.

35 COL STREIT: Yes. And if you had identified something in the maintenance test flight that you conducted, which reflected the maintenance had not been attended to satisfactorily, what, the aircraft would be returned to have that issue addressed, would it?

40 MAJ PERKINS: Yes. So you would say whatever the issue was, which part of the check flight it had failed, and then return it to maintenance and they would seek to rectify.

COL STREIT: In 5 Aviation, were you undertaking that role as a maintenance test pilot when you were at 5 Aviation in 2022?

45 MAJ PERKINS: No, I was not.

COL STREIT: Have you ever undertaken that role for MRH-90 at 5 Aviation Regiment?

5 MAJ PERKINS: No.

COL STREIT: So where did you undertake that role?

10 MAJ PERKINS: At Oakey.

COL STREIT: At Oakey?

MAJ PERKINS: Yes.

15 COL STREIT: And that's in relation to the MRH-90 aircraft that are used to train ab initio pilots?

MAJ PERKINS: Yes, that's correct.

20 COL STREIT: I see. I just want to take you to paragraph 20 of your statement, please. You say:

25 *On completion of UTAP progression, in combination with some RCC/RPL, my mission assessment was conducted by the Commanding Officer and OC A Squadron, which resulted in an upgrade to pilot Category A.*

MAJ PERKINS: Yes.

30 COL STREIT: Can you just explain what you mean by "On completion of UTAP progression"? What does that mean?

35 MAJ PERKINS: It's the Unit Training and Assessment Program; so it's the way that we trained pilots from when they march into the Regiment, to when they left the Regiment. So I conducted some of those UTAP. Because I hadn't flown MRH-90 in 5 Aviation Regiment under that version of the UTAP, I was required to conduct some tasks in the UTAP, and some of the tasks that were allocated to pilot Category A were recognised from my previous experience on either MRH-90 or Black Hawk. Then the  
40 assessment was made to upgrade me to pilot Category A.

COL STREIT: I see. One matter I overlooked is, in fact, you are also qualified on the S-70 Black Hawk as a pilot; is that correct?

45 MAJ PERKINS: Yes. Well, I'm no longer; I was qualified, yes.

COL STREIT: You were qualified. So was that the aircraft you were qualified on, that is the S-70 Black Hawk, your aircraft you were qualified on before you transitioned to MRH-90?

5

MAJ PERKINS: Yes.

COL STREIT: So the last time that you flew a Black Hawk, was that prior to, or was that in 2014?

10

MAJ PERKINS: 2014, yes.

COL STREIT: I see. I'm just going to turn now to governance of Army Aviation standards, which commences at paragraph 27 of your statement. And you provide some evidence to the Inquiry in relation to, several paragraphs, up to about paragraph 35, and you refer to a number of policy documents.

15

Just in broad compass, in terms of governance that affected your day job as the Regiment's Standards Officer in 2022, can you just explain what were the key documents you had to have regard to in doing your job, as the Regiment Standards Officer?

20

MAJ PERKINS: So generally, my job was to distil any requirements out of SI Avn, so Standing Instructions Aviation. That pertained directly to 5 Aviation Regiment, so if there was a particular way that we needed to fulfil the requirements in the parent publication, then I would write those publications for the CO and then he would authorise them.

25

COL STREIT: I see. So is it fair to describe – and if you don't agree, please say so – but is it then fair to describe your role in that matter is the subject matter MRH-90 Regiment Standards Officer, preparing documentation for the Commanding Officer in relation to how an MRH-90 is to be flown? And if the Commanding Officer signs that document, it becomes an instruction from the Commanding Officer to the unit?

30

35

MAJ PERKINS: No. So I wrote publications that referred to all the platforms that 5 Aviation Regiment operate: so that's CH-47, MRH-90 and AW139. So my role was to write how we would do that, for all platforms, not for MRH-90 specifically.

40

COL STREIT: I see, so we'll return to that in a moment. But, in essence, you're giving a document to the Commanding Officer, for the Commanding Officer's consideration in relation to the operation of aircraft within 5 Aviation Regiment. Is that correct?

45

MAJ PERKINS: If there was something specific that we needed to direct at the Regiment level.

5 COL STREIT: So when the Commanding Officer just adopts what you write and doesn't change anything, and signs it, what then is the effect of the document that's been signed, what is it used for?

10 MAJ PERKINS: It becomes an Order for the Regiment. So everybody is required to comply with that publication.

15 COL STREIT: Right. In terms of the preparation of that type of documentation for the Commanding Officer, were you required to speak to anyone else in assisting to create the documents for the Commanding Officer's consideration?

20 MAJ PERKINS: I wasn't required to do so; I did do so. I consulted with a wide range of people in the Regiment to make sure that what I was doing was going to be suitable for what I was trying to achieve.

COL STREIT: I just want to take you, if I may, to paragraph 39 of your statement. The question immediately preceding that was:

25 *Describe the interaction between unit Standards Officers and the Standards Office.*

And in paragraph 39 you give a response. So you describe in 2022, the Brigade Standards Officer, MAJ David – just a moment.

30 MS McMURDO: Well, I - - -

MAJ PERKINS: I was about to ask the same question.

35 MS McMURDO: Pool.

COL STREIT: Yes, I was just checking something, Ms McMurdo.

MS McMURDO: All right.

40 COL STREIT: MAJ David Pool, who you say was the link between the Regiment Standards Officer and Aviation Command Standards. Can you just explain what you mean by that sentence?

45 MAJ PERKINS: Yes. So I was at the Regiment level. The level above me was the Brigade. The level above that is Aviation Command. So the people



who write SI Avn are Aviation Command Standards. That is then complied with by the Brigade and contextualised, if required, for SI Brigade, noting that there are very few Brigade SIs.

5 And then I, as the Regiment Standards Officer, would then convert that to whatever we needed to offer the Regiment. So in keeping with the chain of command in the military, I would speak to the Brigade Standards Officer and he would speak – just in case there was similar issues across the Regiments.

10 So if I was experiencing something that 6 Aviation Regiment was also experiencing, operating the same type, rather than all of us contacting Aviation Command Standards, that was kind of collated at the Brigade level and then that would go up to Aviation Command Standards.

15 COL STREIT: So is that another way of saying that – tell me if you agree or not – but it is essentially to engage with the high headquarters and to then contextualise or distil the information they're providing to you, so it's relevant to what 5 Aviation Regiment has to do?

20 MAJ PERKINS: As in the Brigade Standards Officer?

COL STREIT: Yes.

25 MAJ PERKINS: No. I think it was more up than down.

COL STREIT: I see.

30 MAJ PERKINS: I think the liaison happened more from the Regiment level up. The publications, when they were published, didn't have to go through the Brigade Standards Officer before they'd get to us. They would be consulted about them before it got published, but then – yes.

35 COL STREIT: At paragraph 40 onwards you describe matters concerning 5 Aviation Regiment and its mission.

MAJ PERKINS: Yes.

40 COL STREIT: You set out, at paragraph 43, the Squadrons in 5 Aviation Regiment.

MAJ PERKINS: Yes.

COL STREIT: And then at 44 and 45, you go on to describe the standards team, and some aspects of your role as the Standards Officer. I just want to turn to that aspect now, at paragraph 45 of your statement.

5 MAJ PERKINS: Yes.

COL STREIT: You say there that you reported directly to the unit Commanding Officer. That's correct?

10 MAJ PERKINS: Yes, that's correct.

COL STREIT: In 2022, who was that?

15 MAJ PERKINS: That was LTCOL Chris McDougall.

COL STREIT: You say you provided training and oversight to Troop Commanders and QFIs, in accordance with an Aviation policy that is set out in your statement.

20 MAJ PERKINS: Yes.

COL STREIT: So what does that mean? Are you able to describe what you mean when you say, "Training and oversight to the Troop Commanders and QFIs"? How did that look on a daily basis?

25 MAJ PERKINS: So there's a couple of aspects to it. Any assessments that were conducted in the Regiment were required to be notified to me, so that allowed me to kind of keep it - keep any eye on any assessments that were happening in the Regiment. So that was a form of oversight, I guess, to see  
30 what was going on, and on occasion I would sit in the aircraft when those assessments were conducted just to make sure that they were in keeping with the publications.

35 In terms of the Troop Commanders, there was an element of the Unit Training and Assessment Program that required me, directly, to train them on how to mentor, and train and assess if required, certain tasks that were allowed to be trained and assessed by Troop Commanders in accordance with the Standing Instruction Aviation publication.

40 So I interfaced with those Troop Commanders and that kind of allowed me to build quite good rapport with the Troop Commanders across the Regiment, and also keep the lines of communication open between them and I directly to make sure that I had a good idea of how everything was going in the Regiment.

45

COL STREIT: In 2022, in undertaking that role in providing training and oversight to the Troop Commanders, were there any particular standout issues that you can indicate to the Inquiry?

5 MAJ PERKINS: Not that I recall, no.

COL STREIT: Paragraph 49, the second-last line of that paragraph, you use an acronym, PIRR. What does that stand for?

10 MAJ PERKINS: Putting me on the spot here.

COL STREIT: Sorry.

15 MAJ PERKINS: I think it's Publication Improvement Request and Response.

COL STREIT: I see. The bottom line is that the things you were engaged in and might prepare document for the CO's consideration – the bottom line is, is that the CO – if the CO agreed, the CO was endorsing those publications for the unit? So you didn't have the function of authorising instructions relevant to the unit, did you?

20

MAJ PERKINS: No. I had, like I said previously, the guidance, I guess, aspect, and then the Commanding Officer had the authority to endorse those.

25

COL STREIT: In paragraph 52 of your statement you're asked a question about the simulator at 5 Aviation Regiment. You say you personally conducted a number of assessments in the simulator, including instrument flight assessments and mission skills assessments. Are you able to say to what regularity you were using the simulator on a weekly basis or a monthly basis, or was it something longer than that?

30

MAJ PERKINS: Me personally?

35

COL STREIT: Yes, you.

MAJ PERKINS: It would be generalising but maybe a couple of times a month.

40

COL STREIT: Did you experience, in 2022, a need to use the simulator more regularly because of lack of availability of aircraft due to serviceability issues?

45 MAJ PERKINS: Not that I recall, but that's not to say it didn't happen.

COL STREIT: I want to turn now to pilot proficiency, and particularly paragraph 56 of your statement which is a response to issues concerning formation flying. You say, “There was no currency requirements on low flying or formation flying”, and you mention a publication which you say required formation to be flown at least annually to provide assurance to the CO that all aircraft – aircrew had flown formation at least once in the preceding year. Just in relation to your response there to the Inquiry, so first off, as of 2022, am I right in understanding your evidence that there was no currency requirements on low flying in formation flying in SI Avn Ops? Is that right?

MAJ PERKINS: So, no, there were no currency requirements on low flying or on formation flying.

COL STREIT: I see. Formation flying at 5 Aviation Regiment in 2022, to your experience, how many aircraft – if an MRH is being flown, how many aircraft are involved in formation flying?

MAJ PERKINS: I don’t recall. I recall being on exercise and there being multiple aircraft, but I can’t recall the number.

COL STREIT: In terms of the requirement that formation be flown at least annually to provide assurance to the CO that all aircrew had flown formation at least once a year, does that mean it could be a formation of two or three or more aircraft it didn’t matter? As long as they’d flown one sortie of formation flying that was enough for the tick in the box?

MAJ PERKINS: I would have to refer to the publication, but the line in there that says, “Providing assurance to the CO that all aircrew had flown formation at least once in the preceding year”, I pulled that directly out of the Unit Training Assessment Program event instruction for that formation event. So that formation event was very specific in the items that it required people to conduct, so it wasn’t just going and flying a formation. It was basically the same sortie that you would fly on an operational-type transition on one of your first formation sorties. So it was like station keeping, changing, et cetera, et cetera. I can’t recall the entire content of it, but it basically provided the CO with some assurance that all of the formation tasks were conducted once a year at least.

COL STREIT: I see. Paragraph 59 in – I’m sorry.

AVM HARLAND: Sorry, I have a follow-on question from there.

Do you consider formation flying to be a difficult skill to master?

MAJ PERKINS: Personally, no. No, I don't think it's a particularly difficult task to master.

5 AVM HARLAND: In terms of maintaining currency for crews when they're flying, again, do you think, in your opinion, it requires a number of evolutions to maintain currency in that, particularly when you're flying in more complex environments like exercises?

10 MAJ PERKINS: Can you please state the question again?

AVM HARLAND: Yes. In the general case of people who are flying, do you consider that formation flying is sufficiently complex that you need to practice it before you would do it in a more challenging environment like  
15 Exercise TALISMAN SABRE, for example?

MAJ PERKINS: I think there was a general consensus that, yes, in order to fly formation at night in a mission scenario, you would graduate that in the kind of crawl, walk, run fashion; that you would start out flying day  
20 formation missions, potentially with less aircraft, to – sorry, to larger day formations before going into night formations and so on and so forth.

AVM HARLAND: Okay. Given, by my understanding of SI Avn Ops and 5 Avn Ops ESIs – and correct me if I'm wrong – the sum total of the  
25 requirement is that you need to fly formation at least once a year. Is that correct?

MAJ PERKINS: Yes, that's correct.

30 AVM HARLAND: So if you were leading into an exercise, like a large, complex exercise where you would be flying at night in NVD formation, would there be a requirement for the crews to work up towards that, or would that singular, in the last 12 months, formation event satisfy in terms of being able to authorise that flight?  
35

MAJ PERKINS: There was not a requirement to do so. We generally tried to do so. So we would try and graduate the training to arrive at the exercise, having done those more easy formation tasks beforehand, but that wasn't a  
40 requirement in the publication, in SI Avn.

AVM HARLAND: Okay, great. Thank you.

COL STREIT: I was taking you – before that question by the Air Vice-Marshal, I was drawing your attention to paragraphs 59 and 60 of  
45 your statement. I'll return to that now. Paragraph 59 and 60 – on the face

of it, you appear to be referring to the impact on the disruption to MRH-90 training affected by 5 Aviation Regiment being tasked to provide humanitarian assistance and disaster relief. Is that correct?

5 MAJ PERKINS: So, yes, humanitarian assistance and disaster relief, and Defence aid to the civil community.

COL STREIT: Yes, Defence aid to the civil community. Paragraph 59 you refer to “Operational tasking for Tonga/FLOOD ASSIST disrupted the training program and the affected Squadrons”. You then go on to say that it’s beyond your subject matter expertise to say whether there was a critical disruption or a disruption that gave rise to a safety risk. Is the bottom line of your evidence that the Squadron being tasked to participate in an operational matter for FLOOD ASSIST disrupted the training program – that is the Unit Training Program – for MRH-90 pilots?

MAJ PERKINS: Yes. So as per my testimony that I just spoke to the Air Vice-Marshal about, the intent was that we arrived at the exercise having done those things. If we get tasked to go to Tonga or on FLOOD ASSISTS, for instance, then that training program that we intended to conduct may or may not have been conducted or got shortened, which then would lead into the exercise itself, and I can talk more to that if - - -

COL STREIT: Sure. Paragraph 59, is that a reference to something occurring in 2022?

MAJ PERKINS: So, yes, in 2022 the Regiment was tasked to go to Tonga, and in 2023 the Regiment was tasked to go on FLOOD ASSIST.

COL STREIT: Now, in paragraph 60, where you talk about these disruptions for humanitarian assistance, disaster relief, and Defence assistance to the civil community, that’s not a reference, is it, to some other operation? Is that a reference to Tonga and FLOOD ASSIST?

MAJ PERKINS: That’s correct.

COL STREIT: The disruptions as a result of participating in those no doubt important operations was necessarily a disruption to training for the unit; is that correct?

MAJ PERKINS: Yes, that’s correct.

COL STREIT: And you say at paragraph 60 that the disruption – and this is me paraphrasing – that the disruption primarily related to the absence of night flying on these kinds of operations.

MAJ PERKINS: That's correct.

5 COL STREIT: What did you mean when you said, "These kinds of operations", and night flying?

MAJ PERKINS: So on operations such as the TONGA ASSIST and FLOOD ASSIST, those sorts of taskings were generally conducted by day. So they might be away for a period of months and not flying at night.

10 COL STREIT: This is not a memory test by any stretch, but are you able to recall how long the Regiment was involved in the tasking to Tonga?

MAJ PERKINS: I think it was a couple of months; I'm not sure.

15 COL STREIT: Paragraph 60, third line from the bottom of that paragraph, you refer to the Regiment Aviation Safety Officer doing something with you. First, what role did the Regiment Aviation Safety Officer have?

20 MAJ PERKINS: So that is outside of my subject-matter expertise, but I have an understanding that his responsibility involved managing aviation safety risk on behalf of the CO.

25 COL STREIT: In your role as a Regiment Standards Officer, did you have any – was there any requirement for you to engage with the Regiment Aviation Safety Officer in preparation of any policy or instructions?

30 MAJ PERKINS: He had safety related publications that would be included in SI 5 Avn Operations, and we – if we needed to we would consult on the impact of certain things that he might write or I might write in each other's lanes, and then we would take that publication to the Commanding Officer.

35 COL STREIT: Do you remember who that person was in 2022, without identifying his name, Regiment Aviation Safety Officer?

MAJ PERKINS: Yes, I do.

40 COL STREIT: Can you turn over that document there and just check to see whether his name appears in that list please?

MAJ PERKINS: No, it's not on this list.

45 COL STREIT: All right. Thank you. Can you tell me, who was the Regiment Aviation Safety Officer in 2022 at 5 Avn?

MAJ PERKINS: It was MAJ Jordy Keating.

COL STREIT: I want to take you to paragraph 71 of your statement.

5 AVM HARLAND: Just before we do, COL Streit, can I just ask you, during  
that 2022/2023 period where you were doing HADR and DHCC tasking,  
was there any conversation at the Squadron as to, you know, what the  
impact of that was and whether you needed to adjust your training and  
exercise program as a result of that?

10 MAJ PERKINS: I'm not sure if there was discussion at the Squadron level,  
but there was discussion at the Regiment level about that, yes.

15 AVM HARLAND: At the Regiment level, sorry.

MAJ PERKINS: Yes.

20 AVM HARLAND: Yes, and could you describe the nature of that  
conversation? Were you involved in it?

25 MAJ PERKINS: Yes. So the CO – it's in my statement as well, but the  
Commanding Officer and myself and MAJ Keating discussed the potential  
impact on not having conducted the training that we'd intended to do, and  
so when we commenced Exercise VIGILANT SCIMITAR in 2022 we  
liaised with the people that were directing that exercise and made sure that  
we wound everything right back to ensure that we kind of started out with  
totally non-technical missions, and then we kind of conducted that training  
program that I spoke about before, but we did it on the exercise, so that the  
outcomes of the exercise were not – and I'm not sure; is this outside of the  
30 security classification that I can speak to or not? Does anybody know?  
Like, what we did on exercise, if that's okay to speak about.

35 COL STREIT: I'm unsure, so in those circumstances it's probably best not  
to answer. You can address the matter at a later stage, and if necessary  
recall the witness in a private session.

40 AVM HARLAND: Yes, I understand that, and a follow-on question, again  
with the same caveat in mind, did the same conversation and approach  
happen after the FLOOD ASSIST? Did you have similar conversations  
about concerns you might have had and how to mitigate those concerns?

MAJ PERKINS: I don't recall, but I imagine that we probably would have.

45 AVM HARLAND: Yes, okay. Thank you.



COL STREIT: Can I take you to paragraph 71 of your statement, please? You say there, or give evidence to the Inquiry to the effect that you believe the frequency of emergency training and assessment more than sufficient. What emergency training and assessment are you referring to in that paragraph?

MAJ PERKINS: So the emergency training and assessment that are required are an annual category assessment and an annual simulator development training event. So they're offset by six months, plus or minus two months.

COL STREIT: Yes.

MAJ PERKINS: So the annual category assessment contains emergency assessment, and the annual simulator development training also, sorry, contains emergencies, and like I said, they're offset, so every single months, basically, you are conducting some form of emergency assessment.

COL STREIT: So in a good year, where time – you know, where available time is sufficient, you're doing your category assessment and your emergency assessment offset by six months. So you're having an emergency assessment, in effect, every six months; is that correct?

MAJ PERKINS: Yes, that's correct.

COL STREIT: So that means in any 12-month period you're doing a minimum two emergency assessments?

MAJ PERKINS: Sorry, I need to correct my statement there. The annual simulator development training is not assessed. It's to regain or retain proficiency, but it's not necessarily assessed, and I would have to refer to the publication for the exact wording, but yes.

COL STREIT: I see. Perhaps if we could look at it this way: if it's to regain or retain proficiency, does that imply you can also lose that proficiency and have to undergo a further assessment?

MAJ PERKINS: If you – I guess so, yes.

COL STREIT: So my question is, I suppose, this, to put it directly: minimum two emergency sessions a year for MRH-90 pilots, and you say at paragraph 71 that – that in effect the frequency of that emergency training and assessment is more than sufficient. I'm just wondering why you expressed that view. Why did you hold that view?

45

MAJ PERKINS: Because throughout the pilot training continuum there's significant focus on emergency training, and I guess the intent or – sorry, I'm lost for the word – but the expectation of all of the pilots is that they maintain their professionalism, and so in order to be able to go and fly an aircraft where you may have an emergency, you would expect that anybody who's flying that aircraft is competent in performing those emergencies. So whilst it's directed to be assessed every year or six months, there is an expectation that they are at that level or above throughout the entire year, and if they go flying with somebody else, another pilot or another flying instructor, and they do some sort of emergency and they're not up to scratch, then there's mechanisms to get further training or reassessment and whatnot.

COL STREIT: So there may be circumstances in 2022 in 5 Avn where pilots were doing other types of training that effectively amount to emergency training, but the minimum requirement that they had to comply with was one emergency training in a simulator once a year. Is that right?

MAJ PERKINS: Yes, that's correct. That's not a 5 Avn Regiment rule, that's an Aviation Command rule.

COL STREIT: Yes. So that's an Aviation Command rule.

MAJ PERKINS: And that, as per my statement, is directed from Defence Aviation Safety Regulations, so that kind of currency requirement is across the ADF, not across Army.

COL STREIT: I just want to take you now to experiences flying an MRH-90, which commences at paragraph 77. I appreciate in response to several questions that you've identified that some matters are beyond your subject-matter expertise. I understand that, but what I'm going to do is ask you to answer questions based on your experience flying an MRH-90, and the fact that you are a Qualified Flying Instructor, and a CAT A pilot on MRH-90, and that's the basis upon which I will ask you questions.

In terms of your experience flying the MRH-90 compared to flying the Black Hawk, for example, did you regard the MRH-90 as a more complex aircraft to fly, or an easier aircraft to fly?

MAJ PERKINS: It was a different aircraft to fly. It had some things that were more difficult and some things that were easier. So the Black Hawk, for instance, didn't have the same ability in the automatic flight control system that the MRH-90 did, so whilst there were some complexities in adapting to the new aircraft system, once you had a good understanding of

how to operate the aircraft then it became much more easy to fly than the Black Hawk did – sorry, was.

5 COL STREIT: In terms of flying the aircraft itself, would you accept that there were multiple ways to fly the aircraft, including by hands-on? That is, on the collective and the cyclic?

MAJ PERKINS: Yes.

10 COL STREIT: You could also use the aircraft's automatic flight control systems to fly the aircraft. Is that right?

MAJ PERKINS: That's correct.

15 COL STREIT: And subject to what you might be doing in terms of a flight or a sortie or a mission, it might be a combination of using hands-on flying as well as the automatic flight control systems of the aircraft.

MAJ PERKINS: Yes, that's correct.

20 COL STREIT: In terms of low flying – that is, flying below 500 feet – if you just accept from me that low flying is below 500 feet.

MAJ PERKINS: That's what it's defined as in the FIHA, yes.

25 COL STREIT: Yes. Ordinarily was it your experience that low flying would be done more with a hands-on approach? Hands on the controls, flying the aircraft, as opposed to using the automatic flight control system. Was that your experience?

30 MAJ PERKINS: In certain situations, yes.

COL STREIT: Your experience at 5 Aviation Regiment in 2022, was there a particular side of the aircraft that the flying pilot would be seated in?

35 MAJ PERKINS: They would generally sit on the left of the aircraft because they had more screens on the left-hand side, but there's no direction as to whether they need to sit on the left or the right.

40 COL STREIT: Where would, in your experience, the aircraft Captain generally sit in 2022 in 5 Aviation Regiment?

MAJ PERKINS: I think it almost varied fifty-fifty, whether they would sit on the left or the right.

45

COL STREIT: In terms of going on a sortie or a flight, who makes the decision about where the aircraft Captain would sit?

5 MAJ PERKINS: The aircraft Captain makes that decision, but it has to be briefed to the authorising officer.

COL STREIT: Why is that requirement necessary? What's the reason for that requirement?

10 MAJ PERKINS: Which requirement?

COL STREIT: The requirement you've just spoken about; that is, the aircraft Captain needed to brief the authorising officer as to where they were going to be seated on the aircraft.

15 MAJ PERKINS: Because there's a DASR requirement that requires you to do so, that then cascades down through the publications to that point.

COL STREIT: I see. Do you have any understanding as to the reason why that requirement exists though?

20

MAJ PERKINS: No.

COL STREIT: Can I just turn to – ask you some questions about your experiences in formation flying? I've said that on the basis that you do have experience in formation flying MRH-90. Is that correct?

25

MAJ PERKINS: Yes, that's correct.

COL STREIT: What's the – can you recall the maximum sortie size of aircraft that you've flown in?

30

MAJ PERKINS: In MRH-90?

COL STREIT: Yes.

35

MAJ PERKINS: I think four. Sorry, of exclusively MRH-90s?

COL STREIT: Yes.

40

MAJ PERKINS: I've flown in larger combined formations where there may have been 10 aircraft in the formation. Four of those were MRH-90s, plus Black Hawk and CH-47 and Taipan.

COL STREIT: In 2022, in 5 Aviation Regiment, formation flying of MRH-90 aircraft, to your recollection how many aircraft were generally involved in formation flying during that year?

5 MAJ PERKINS: If I was to generalise, I would say between two and four.

COL STREIT: With formation flying, if you're in a packet of four, can you describe the types of controls that are in place to ensure aircraft keep distance from other aircraft in the sortie? In other words, who's watching who in that sortie?  
10

MAJ PERKINS: In what respect?

COL STREIT: I suppose if I could put it this way: what controls are in place for a sortie of a packet of four that imparts information to each pilot as to their responsibilities of keeping a watch out for another airframe?  
15

MAJ PERKINS: So there's a minimum separation requirement between the aircraft, and then so the final aircraft in the formation avoids the preceding aircraft, and so on and so forth, to the lead.  
20

COL STREIT: If we were to look at dash 4 in a packet of four – dash 4 being the last aircraft in the sortie – dash 4 is watching all aircraft in front of it; is that correct?  
25

MAJ PERKINS: Well, yes, they're watching all, but their responsibility is to avoid 3, because 3 is avoiding 2, who is avoiding 1.

COL STREIT: I see. Can you just explain that a little bit more, that requirement about 4 is avoiding 3, 3 is avoiding 2? Where does that come from?  
30

MAJ PERKINS: I believe it's in the STANMAN, but I don't recall.

COL STREIT: Can you just explain a little bit more about that protection that exists?  
35

MAJ PERKINS: That you don't hit the aircraft in front of you?

40 COL STREIT: Yes.

MAJ PERKINS: So the fourth aircraft in the formation avoids the aircraft in front of them, and then that aircraft avoids the aircraft in front of them, and they avoid the lead aircraft.  
45

COL STREIT: Is that something that is just accepted as knowledge for all pilots, or is it specifically briefed in relation to a plan for a sortie?

5 MAJ PERKINS: I don't recall if that's in the minimum briefing requirements for formation. If it was, it's in the MRH-90 STANMAN, and that of other types. Yes.

10 COL STREIT: I'm just going to move to a different topic now concerning your experiences with TopOwl. In 2022, was the TopOwl that you used the version that was software version 5.10?

MAJ PERKINS: I believe so, yes.

15 COL STREIT: Can you describe in 2022, when you were using TopOwl, can you describe when you're flying an aircraft at night, the information that the device provides you as the flying pilot?

20 MAJ PERKINS: So the information that it provides you is no different, whether that's day or night, other than the fact that you have a night-vision image projected over the top of your HMSD symbology. So the symbology is the same by day and night, and it has a number of different parameters of information in there: power setting, air speed, altitude, and the flight vector it's called.

25 COL STREIT: If you were looking ahead, flying straight and level at 500 feet, travelling at 80 knots, and you were looking ahead as the pilot at night, and if you turned your head to the right to look out the window on the right-hand side of the cockpit, did anything happen to the symbology in the TopOwl projection in your helmet?

30 MAJ PERKINS: So I, like many other people, have watched the 60 Minutes episode on this, and so I am aware that there is apparently some difference between the information displayed at the 12 o'clock and that displayed at the 3 or 9 o'clock, but I've never actually experienced that myself.

35 COL STREIT: Have you ever turned your head – I'll start again. So flying an MRH-90 with TopOwl in 2022, have you ever turned your head to look out the window and experienced any change or difference to the TopOwl information?

40 MAJ PERKINS: No. So the way that the attitude information is derived in the HMSD, if you were to call it attitude information, is that there is a pitch line at 10 degrees above the horizon, and a pitch line at 10 degrees below the horizon, both of which are at the extremes of the view, and are rarely

5 both visible at the same time. The only way that you can derive attitude information from that is the difference between that pitch line and the horizon. So one of those pitch ladders, or pitch lines, needs to be congruent with the horizon line for you to be able to derive attitude information. It's not like the wings, as you would imagine in an AI. So it's very difficult to derive attitude information from that, and I've never used it personally to derive attitude information.

10 COL STREIT: Some evidence has been given to the Inquiry earlier where an individual described an experience of when you turn your head to the right wearing TopOwl, and you look out the window, he described experiencing a washout of some information. Is that something that – a term you've heard before?

15 MAJ PERKINS: As in that it becomes more difficult to see the information, or what? Like, what do you mean by that?

20 COL STREIT: That there's an error in relation to some information. Have you ever heard that before?

MAJ PERKINS: I've heard it on the episode that I described, but no, I haven't.

25 COL STREIT: So your evidence is you haven't experienced any error occurring in the use of the TopOwl system while flying an MRH-90 when you've turned your head to look out the side of the aircraft.

MAJ PERKINS: I have not, no.

30 COL STREIT: Were you aware of any training that was being conducted at 5 Aviation Regiment in '22 to ensure new pilots conducted a familiarisation sortie using TopOwl version 5.10?

MAJ PERKINS: Was I aware of that happening in 2022?

35 COL STREIT: Yes.

MAJ PERKINS: No, I believe that that software update came in before 2022, and so that training package was conducted prior to my arriving there.

40 COL STREIT: I see. Did you undertake that training package; do you recall?

45 MAJ PERKINS: I recall having to do some training for it; I don't recall what it was.

COL STREIT: Paragraph 92 of your statement, you were asked a question about in your experience is it more difficult to maintain horizon when the doors are shut because the ACM have reduced visibility to assist the pilots.  
5 Your answer was:

*No, we don't manoeuvre the aircraft based solely on verbal inputs from the aircrew. If a pilot is unable to maintain visual reference while operating in VMC by day or night on an NVD, then they should execute a UA recovery drill.*  
10

And then you go on to say as described in a particular policy. First of all, just dealing with the acronyms in that evidence, in the second line you say, "VMC". What is that a reference to?  
15

MAJ PERKINS: Visual meteorological conditions.

COL STREIT: NVD, night-vision device?

20 MAJ PERKINS: Night-vision device, yes.

COL STREIT: What's a UA?

MAJ PERKINS: Unusual attitude.  
25

COL STREIT: Do you recall what a unusual attitude recovery drill is, as described in the policy you've identified?

MAJ PERKINS: From my recollection, it is to roll the aircraft wings level: attitude, heading, power, airspeed. So roll wings level: initiate a climb, turn into a safe heading, and then make sure that you have an appropriate airspeed to conduct that.  
30

COL STREIT: All right. Let's just break that down. The first thing you said was "roll wings level".  
35

MAJ PERKINS: Yes.

COL STREIT: So that's essentially to bring the aircraft back to level.  
40

MAJ PERKINS: Mm.

COL STREIT: And then do what?



5 MAJ PERKINS: So it's AHPA, is the acronym. So attitude, heading, power, airspeed. But that may not be done in order if it's required that you apply power to climb before you can turn to a safe heading. So you would roll wings level. Initiate the climb. Once you're climbing, turn to a safe heading and then ensure that you don't decelerate below 80 knots.

COL STREIT: So an unusual attitude recovery drill is to bring the wings/aircraft straight and level, to climb; is that correct?

10 MAJ PERKINS: Yes.

COL STREIT: And then do what?

15 MAJ PERKINS: So this is applicable across multiple different scenarios, right.

COL STREIT: Yes.

20 MAJ PERKINS: So this is the same recovery that you use in an unusual attitude in instrument flight, as well as if you are flying at any level and go into what's called inadvertent instrument meteorological conditions. So you roll wings level, initiate the climb. And then you may be somewhere low where there's mountainous terrain, or something higher than you, and so you would turn to a safe heading, or if they're in a formation and the whole formation goes up, then you turn to your assigned heading, and then  
25 continue the climb.

COL STREIT: So roll wings level, climb, and turn to a safe heading.

30 MAJ PERKINS: Yes, so the idea is that you get the aircraft stabilised before you start turning again. If you're already in an unmanageable attitude you don't want to turn the aircraft while you're not kind of aware of what's going on. The idea is that you've kind of lost situational awareness there, and you regain it, and then continue.

35 COL STREIT: Okay. Thank you. Just in relation to the deceased members, you knew, and flew with, CAPT Danniell Lyon, LT Max Nugent, and WO2 Laycock. Is that correct? I'm sorry.

40 MS McMURDO: Would you like a break? We'll have a break now. Thank you.

MAJ PERKINS: Thanks.

45

## HEARING ADJOURNED

## HEARING RESUMED

5

MS McMURDO: Yes, COL Streit.

10

COL STREIT: Thank you, Ms McMurdo. Thank you for that time.

15

MAJ Perkins, I'm just going to ask you some questions in relation to what actions you would perform, being an MRH-90 pilot, in the circumstances I'm just going to describe to you. So it'll assist the Inquiry in understanding things that pilots need to do to get the aircraft to do certain things. If you're travelling at 500 feet above ground level and it's – the ground is level, you're travelling and 80 knots, and you wanted to climb to 300 feet, as the flying pilot what inputs do you need to do to the aircraft to get it to climb to 300 feet?

20

MAJ PERKINS: Sorry, sir, you said you were at 500 and we climb to 300.

25

COL STREIT: I apologise. Well, that's impossible, isn't it? So 500 feet and you want to climb to 600 feet, what inputs do you need to do to the aircraft to get it to go to 600 feet?

30

MAJ PERKINS: If you're using your hands to fly the aircraft you would just raise the attitude and increase the power.

COL STREIT: Can you get to 600 feet by engaging the automatic flight control system of the aircraft?

35

MAJ PERKINS: Yes. So, I mean, you can do this multiple, multiple ways, right? If you're at 80 knots, you can just – it's only 100 feet that you're climbing you can just pull back on the attitude and climb the 100 feet, which would result in you slowing down. You could just increase the power and climb to – climb the 100 feet, which may increase your air speed, or if you do them coordinated and you want to maintain the 80 knots then you would climb at 80 knots using coordinated power and attitude to climb. And then in the situation that you're describing, using the automatic flight control system you would couple the aircraft to altitude and then – or you can just set an attitude – sorry, an altitude in the central control panel. On the MRH-90 you can just set 600 feet on that and press the button and the aircraft will climb to 600 feet.

40

COL STREIT: Can you just explain to the Inquiry what the radio altimeter does on the MRH-90? What is it?

5 MAJ PERKINS: So it tells you what your height is above ground level.

COL STREIT: Are you able to set the RADALT to a particular height above ground level?

10 MAJ PERKINS: Yes. So you can either couple the aircraft to the RADALT or to a barometric altitude.

COL STREIT: If you set the RADALT to 500 feet, you then climbed to 600 feet, and then took your hands off the collective and the cyclic, what would the aircraft do?  
15

MAJ PERKINS: It would maintain that altitude.

COL STREIT: Would it return to the 500 feet that you'd set the RADALT at?  
20

MAJ PERKINS: It depends how you've done it.

COL STREIT: I see.

25 MAJ PERKINS: So if you press the trigger on the collective and then climb and then release the trigger then it will capture that new altitude. If you're just pulling against the controls and don't disengage the automatic flight control system then it will return to the previously set datum.

30 COL STREIT: And if we did the latter, that is the aircraft returned at the previous set RADALT, 500 feet, and you to get to 600 feet, it goes to 500, is there a particular speed that the aircraft returns to the – descends to the 500 feet?

35 MAJ PERKINS: The default rate of descent is 700 feet per minute, so I imagine it would be 700 feet per minute, but I haven't been out there and tested this myself to check, you know?

40 COL STREIT: Thank you, MAJ Perkins. That's my questions.

MS McMURDO: Can I just ask you, MAJ Perkins – thank you for giving evidence – you did mention that you saw the 60 Minutes program.

45 MAJ PERKINS: Yes, ma'am.

MS McMURDO: Having seen that, is there anything that you wanted to – that you feel the Inquiry should know, that you're able to tell us?

5 MAJ PERKINS: I found it to be – I'm trying to be respectful, ma'am. I found it to be factually incorrect, sensationalist, and I disagree with the sentiment that's in that article.

10 MS McMURDO: That's fine. Are you able to give specifics about what you disagreed with? Let's not worry about the sensationalist aspect of it, but is there anything that you think that you could actually help the Inquiry with in our investigation, as a result of that program, from your very deep knowledge of this aircraft?

15 MAJ PERKINS: My personal perspective on it is, as I spoke to the Air Vice-Marshal about before regarding the attitude information derived from the HMSD, it's actually quite difficult to derive attitude information from that, and so that's not something that we use to set the attitude of the aircraft with, and I think it's unlikely that somebody would look out the side and be disoriented by the attitude information that was displayed because  
20 it's very hard to get it. So if you look to the side it's hard to be disoriented by something that you don't perceive, I guess.

25 So it's not that, you know, even in a turn, for instance – excuse me. It's not easy to derive that turn or that attitude information when you'd look to the side of the aircraft. So I've never actually personally used that system to derive attitude information at all. I derive my attitude information out the front from the visual horizon, and if I'm unable to use the visual horizon then I use the aircraft instruments, which is not the HMSD, the aircraft instruments in the aircraft, to derive attitude information, and if that was at  
30 low level that would be a very quick procedure, using that attitude, heading, power, airspeed drill that I spoke about before, if I was required to use the attitude information inside the aircraft.

35 MS McMURDO: Thank you. And anything else you wanted to tell the Inquiry about, as a result of that program and - - -

MAJ PERKINS: Not that I recall, ma'am.

40 MS McMURDO: Thank you for that.

45 AVM HARLAND: I just have one question. It's regarding just the process for updating SIs in response to changes to DASRs, and I just wanted to get a bit of a sense of where you play a part in that process. In February '23 there was a change to DASR SPA.55 Night-vision Imaging System, and that was given a nine-month implementation period, so that was still

underway at the time of the accident. As the STANDO at 5 Avn, were you involved in considering that DASR change and putting together an implementation plan and timeline for it?

5 MAJ PERKINS: No, I was not. So that's an Aviation Command function from Aviation Command Standards. I became aware of that DASR change because I was making some changes to the way that we worded some of the 5 Avn publications regarding low light, and so I became aware of terminology that was used in the DASR, and therefore I used that in the 10 5 Aviation Regiment publication, but I didn't have any input into the amendments that were made.

AVM HARLAND: Okay. And were you a part of the process of adjusting the 5 Avn SIs?

15 MAJ PERKINS: Yes. Yes, that's my job.

AVM HARLAND: For those who aren't aware, the DASRs, sorry, are the Defence Aviation Safety Regulations which sit above the SIs, and they 20 drive what Standing Instructions are written at the various flying units.

MAJ PERKINS: Can I just make some further comment about the DASR?

25 AVM HARLAND: Please.

MAJ PERKINS: So Defence Aviation Safety Regulations are written by the Air Force, and they're – the delegations that are written in DASRs speak to operating unit COs and their airworthiness requirements. When it speaks to an operating unit CO it's talking about an operating unit CO across the 30 three services, but the size of the unit that they're describing is very different between the Air Force and the Navy and the Army.

So the Air Force and the Navy, an operating unit CO operates at the Squadron level. In the Army that's the Regiment level. So in the 35 5th Aviation Regiment that person is responsible for five times the airworthiness burden that a person in the Air Force and the Navy is responsible for. So there's five Squadrons in 5 Aviation Regiment, but that one person still has the same airworthiness delegations as a result of Defence Aviation Safety Regulations, and I think that that's probably 40 something that should be looked at.

AVM HARLAND: Okay. That's great. Thank you.

45 MS McMURDO: Thank you very much. Are there applications for cross-examination?

LCDR GRACIE: Ma'am, only on - - -

MS McMURDO: Yes.

5

LCDR GRACIE: Ma'am, I only want to ask some questions about Exhibit 2 that I touched on earlier.

10 <CROSS-EXAMINATION BY LCDR GRACIE

LCDR GRACIE: Major, I represent the interests of CAPT Lyon in these proceedings. Could I ask the Major to have access to Exhibit 2 if that's possible, please?

15

MS McMURDO: That's the diagram of the left – heavy left formation?

LCDR GRACIE: Yes. Major, my understanding of the evidence that we've heard so far in relation to this is that this comes from, I think, the SOP. It's a nothing to scale, but on its face it's showing aircrafts 1, 2, 3, and 4 in a four-package heavy left formation.

20

MAJ PERKINS: Yes.

25

LCDR GRACIE: Do I understand that when the pilots are dealing with separation and taking those visual clues they're effectively determining separation by reference to distance of the rotor blades? Is that one of them?

MAJ PERKINS: Yes, the visual cues are from the aircraft. So the distance measuring that we use is in rotor diameter, yes.

30

LCDR GRACIE: It's called rotor di's, is it?

MAJ PERKINS: Yes.

35

LCDR GRACIE: Yes, okay. Just correct me here if I stray out of any areas of accuracy, but my understanding is that you might be flying at two, five, or 10 rotor di's. It varies.

40

MAJ PERKINS: Yes. It's generally a "no closer than" a particular measurement.

LCDR GRACIE: Okay. And is that put into the mission plan?

45

MAJ PERKINS: It's in the flight auth, yes. So there's a section in the flight auth in PEX that stipulates what the no closer than distance is.

5 LCDR GRACIE: So in the particular formation we're talking about back on 28 July last year, it would have prescribed somewhere whether they're flying at two, five, 10 rotor di?

MAJ PERKINS: It would have described the no closer than distance, yes.

10 LCDR GRACIE: Does that distance vary depending on whether you're aircraft 1, 2, 3, or 4, or is it a consistent separation?

15 MAJ PERKINS: So like I said, the no closer than distance is across the formation. They may be further than that, but they can't be any closer than that. So the distance between 4 and 3, 3 and 2, 2 and 1 is no closer than two rotor di's.

LCDR GRACIE: Okay. So it can be greater depending on the pilot's discretion?

20

MAJ PERKINS: Depending on the mission scenario and what's been briefed in orders, I would say.

25 LCDR GRACIE: So again, in Exhibit 2, if on a heavy left aircraft 2 was to transit across for that hard left behind aircraft 1, is aircraft 3 already meant to have dropped back or reduced speed to maintain that separation?

30 MAJ PERKINS: Why? They're already no closer than two rotor di's from the – so if you scribe an arc across where two is, if you put a piece of string between 2 and 1 and go like that, the distance between 3 and arc is two rotor di's consistently, so that allows that aircraft to move across in front without 3 having to do anything. So they maintain their position referenced to.

35 LCDR GRACIE: So if aircraft 2 transits across to the left behind aircraft 1, it doesn't stay at the 6 o'clock position, it keeps moving through, doesn't it?

MAJ PERKINS: Well, it can, yes.

40 LCDR GRACIE: For a heavy left, would it be transiting to the left of aircraft 1?

45 MAJ PERKINS: So heavy left means that their formation is stacked heavy on the left-hand side. So the first aircraft is on the right and the rest of the aircraft are generally on the left.

LCDR GRACIE: So 2 has got to come across?

5 MAJ PERKINS: No, 2 doesn't have to come across. Why is 2 going across?

LCDR GRACIE: Transiting through to get onto the left.

10 MAJ PERKINS: But for what purpose? Why are they going to the left?

LCDR GRACIE: All right. So aircraft 2 can stay where it's depicted there?

15 MAJ PERKINS: Yes. So the formation manoeuvres in that formation. All of those aircraft have an arc of freedom reference 1 that allows them to move plus or minus 45, I think it is, between the line of beam – sorry, directly behind number 1. So the aircraft can manoeuvre within that arc of freedom, it's termed, but generally they would stay in that, plus or minus a bit for manoeuvring.

20 Lcdr GRACIE: So we'll just put a couple of scenarios, and just deal with them if you can. So there's no need for aircraft 3 in this scenario of a heavy left in these positions, to slow down?

25 MAJ PERKINS: If they're going to stay in that – exactly as they're depicted here, the way that I describe this to students is like you're water skiing. So if you're being a boat on a rope, if you're on the inside of the turn, you get slower, right? If you're on the outside of the turn you go faster. So in order to maintain those positions you either need to slow down or speed up, depending on which side of the formation you're on, or you can  
30 close in to the – you still have to speed up or slow down, but not quite as much.

So generally if you're going to conduct a turn, the formation will kind of close – I'm sorry if this can't be depicted by hand movements, but the  
35 formation will kind of move in towards the – the term is escaping me, but directly behind the aircraft. But that just means that you're further out on your – sorry, you're not as far out on your water skiing journey; you're closer to the centre line of the formation, which just means that you don't have to accelerate or decelerate as much.

40 So generally when I'm teaching this to somebody, it's counterintuitive to the student that generally the first manoeuvre that they make in number 3 – if you're in a left-hand turn, the first thing that aircraft will do is turn to the right to come in closer on the formation and then turn left just to make it  
45 easier to manoeuvre from.



5 LCDR GRACIE: So in this scenario there is no need for aircraft 2 to – to use a word, or some words that I’ve heard – collapse into the 6 o’clock position behind aircraft 1?

MAJ PERKINS: So like I was talking about before, they would come skinny on the formation, but not generally directly behind the aircraft.

10 LCDR GRACIE: And aircraft 2 doesn’t transit across to the left of aircraft 1?

MAJ PERKINS: They can if they need to manoeuvre to avoid obstacles. You need to remember this: formation is applicable across different scenarios, so you could be at 50 feet doing this, and so each of the aircraft

15 has to manoeuvre so that they don’t hit terrain.

LCDR GRACIE: I understand, but if the aircraft are in this staggered formation as we’ve got here in Exhibit 2, aircraft 2 is having to increase speed to maintain this spatial separation and aircraft 3 may need to slow

20 down?

MAJ PERKINS: If they’re maintaining that exact position, yes, they’ll have to slow down.

25 LCDR GRACIE: And would they do that to pitch up – by pitching up, or how would - - -

MAJ PERKINS: So it’s a coordinated power and attitude adjustment to maintain level flight and decelerate. So the way helicopters work, it’s kind

30 of like pointing a lift vector and you make the lift vector bigger or smaller depending on what you’re trying to do. So in order to slow down you tilt the lift vector aft of where it is, and if you don’t want to climb then you need to make that lift vector smaller because you’re tilting it more vertically, if you know what I mean.

35 LCDR GRACIE: All right. Thank you. I don’t know if it’s helped anyone else but it has helped me. So thank you, Major.

MAJ PERKINS: It’s relatively complex.

40 LCDR GRACIE: Well, not now, so thank you.

MS McMURDO: Thank you, Lieutenant Commander. Any other applications for cross-examination? No.

45

Thank you very much for your assistance. You're free to go.

MAJ PERKINS: No worries, ma'am.

5 MS McMURDO: Thank you, MAJ Perkins.

**<WITNESS WITHDREW**

10

MS McMURDO: The next witness, I think, is Mr Nugent. Is Mr Nugent now happy to commence his evidence this afternoon? Thank you.

15 COL STREIT: Yes. FLTLT Alexandra Rose will take Mr Nugent. Thank you.

MS McMURDO: Thank you. Just before you get in view of the camera, Mr Nugent, I think there's an application to be made. Yes, FLTLT Rose.

20 FLTLT ROSE: Thank you, Ms McMurdo. Before I call Mr Nugent to give evidence, I do seek to make an application on his behalf because he is unrepresented, and that is to restrict the media or any other person from using the footage from the livestream of his evidence. The reasons for that is that Mr Nugent is a police officer in the New South Wales Police Force, and he is concerned that further publication or broadcasts of his image and  
25 evidence may have adverse impacts on his past roles in the police force, and indeed on any future potential roles he may have, or be considered for.

30 On that basis, he seeks the Inquiry's leave to make a non-publication order prohibiting the recording, transmission or distribution of the footage of his evidence from the livestream, and that's pursuant to the Inquiry's powers under section 28M of the IGADF Regulation 2016 on the basis that it is necessary to do so in the interests of fairness to Mr Nugent.

35 Counsel Assisting does not oppose the making of that application.

40 MS McMURDO: Does anybody want to be heard on that application? Well, in the circumstances I accept, and I am satisfied that I should make that order under section 28M of the IGADF Regulation, and restrict the media and all others from using the footage from the livestream of this Inquiry whilst Mr Nugent gives evidence.

FLTLT ROSE: May it please the Inquiry. I call Mr Daniel Nugent.

45 MS McMURDO: Thank you.

**<MR DANIEL JOHN NUGENT, Affirmed**

5

**<EXAMINATION-IN-CHIEF BY FLTLT ROSE**

10 MS McMURDO: If at any stage you want a break, Mr Nugent, just let us know.

MR NUGENT: Thank you, ma'am.

15 FLTLT ROSE: Can you please state your full name?

MR NUGENT: Daniel John Nugent.

FLTLT ROSE: You are LT Max Nugent's father.

20 MR NUGENT: I am.

FLTLT ROSE: And you refer to him as Max.

25 MR NUGENT: Correct.

FLTLT ROSE: Can you please confirm that you received the following documents prior to giving evidence today. There's the section 23 Notice requiring your appearance to give evidence?

30 MR NUGENT: I did.

FLTLT ROSE: Extract of the Inquiry's Directions?

35 MR NUGENT: I did.

FLTLT ROSE: A copy of my appointment as an Assistant IGADF?

MR NUGENT: Yes.

40 FLTLT ROSE: The Frequently Asked Questions Guide for Witnesses in IGADF Inquiries?

MR NUGENT: Yes.

45 FLTLT ROSE: And a Privacy Notice for witnesses giving evidence.

MR NUGENT: Yes.

5 FLTLT ROSE: Can I please hand you a document. If you take a look through that document, is that your statement that you signed on 31 March 2024?

MR NUGENT: Yes, it is.

10 FLTLT ROSE: Is it 14 pages with 101 paragraphs?

MR NUGENT: It is.

15 FLTLT ROSE: Is that your signature on page 14?

MR NUGENT: Yes.

FLTLT ROSE: And there are two annexures.

20 MR NUGENT: There are.

FLTLT ROSE: Are there any amendments you wish to make to your statement?

25 MR NUGENT: No.

FLTLT ROSE: I tender that statement.

30 MS McMURDO: That will be Exhibit 9.

**#EXHIBIT 9 - STATEMENT OF MR NUGENT DATED 31/03/24**

35 FLTLT ROSE: Mr Nugent, I'd like to ask you some questions about your background and qualifications. You are married to Marianna Nugent.

MR NUGENT: I am.

40 FLTLT ROSE: That is Max's mother.

MR NUGENT: Correct.

45 FLTLT ROSE: She is here today.

MR NUGENT: She is.

FLTLT ROSE: You and Marianna have a daughter, Samantha.

5 MR NUGENT: Yes, we do.

FLTLT ROSE: Who you call Sami.

MR NUGENT: Yes, we call her Sami.

10 FLTLT ROSE: She is Max's sister.

MR NUGENT: Yes.

15 FLTLT ROSE: Is she here today as well?

MR NUGENT: Yes, she is.

FLTLT ROSE: What is your occupation?

20 MR NUGENT: I'm an inspector of police with New South Wales Police Force.

FLTLT ROSE: How long have you been a police officer for?

25 MR NUGENT: Thirty years.

FLTLT ROSE: Where are you currently stationed?

30 MR NUGENT: I've recently been moved to the Northern Beaches Local Area Command.

FLTLT ROSE: How recent is that?

35 MR NUGENT: Two weeks.

FLTLT ROSE: When you made your statement where were you stationed?

MR NUGENT: Parramatta Local Area Command.

40 FLTLT ROSE: Have you ever served in the ADF?

MR NUGENT: No, I haven't.

FLTLT ROSE: At paragraph 11 of your statement you state you don't have any specific aviation experience, but you do have some familiarisation with aviation with your role in the New South Wales Police Force. Are you able to describe what that is?

5

MR NUGENT: Yes, I was given a limited opportunity to be the operations manager for the Police Air Wing, known as PolAir, just controlling and managing operational deployments across New South Wales.

10 FLTLT ROSE: When you say limited opportunity, was that in time or role?

MR NUGENT: It was in time. So I was only there for a short period of time. It was a little bit of a try before you buy scenario.

15 FLTLT ROSE: And you didn't buy?

MR NUGENT: I think the outcome of this incident probably made helicopters a bit of a no-go zone for me.

20 FLTLT ROSE: In terms of paragraph 9 of your statement, you were in that operations manager role with PolAir from 17 October 2022 to 12 November 2022.

MR NUGENT: That's correct.

25

FLTLT ROSE: And they had helicopters in that unit.

MR NUGENT: Yes, five helicopters and three fixed wing planes.

30 FLTLT ROSE: In the operations role you said that you were responsible for tasking those aircraft.

MR NUGENT: Yes, broadly speaking on a day-to-day basis the tasking of aircraft outside of the Sydney basin, so on larger scale operations such as flood assistance, or search and rescue, or operational deployment.

35

FLTLT ROSE: Was there any reason for you to actually be in the aircraft at all?

40 MR NUGENT: No.

FLTLT ROSE: I want to ask you some questions about Max's background.

MR NUGENT: Yes.

45

FLTLT ROSE: What year was he born?

MR NUGENT: 1998.

5 FLTLT ROSE: What age was he when he died?

MR NUGENT: He was 24 years old.

10 FLTLT ROSE: How old was Max when he joined the Australian Army?

MR NUGENT: He was 19.

FLTLT ROSE: Had he shown interest in joining the Army as a youth?

15 MR NUGENT: Yes. So Max was fortunate enough to have a Cadet program at the school that he attended. He thrived in that environment, and he basically told myself and his mother in about year 10 that he intended to join the Army as an officer.

20 FLTLT ROSE: When you said the Cadet program at school, was that the Army Cadets?

MR NUGENT: Army Cadets, yes.

25 FLTLT ROSE: When did he first try to join up?

MR NUGENT: So he went through his YOU session, or his application, basically as soon as he was old enough to do so. So he was still in high school at the time, in year 11.

30 FLTLT ROSE: Was he accepted after that YOU session?

MR NUGENT: So from that YOU session he was basically told that he was eligible for any job that Defence had to offer, and from there, they sent him to further screening, or flight screening, which he did in Tamworth.

FLTLT ROSE: What was the result of the flight screening?

40 MR NUGENT: The flying part was good, but he needed to get a little bit of life experience.

FLTLT ROSE: And he was still 17.

45 MR NUGENT: He was 17, turning 18, yes.

FLTLT ROSE: Did he take that advice and get some more experience?

5 MR NUGENT: Yes, so he finished – when he graduated school, he deferred his university education and decided that he would go and get some life experience by working. He joined the Rural Fire Service. He undertook Toastmasters, and just things that would stand him in better stead for future Officer Selection Boards.

10 FLTLT ROSE: When was the Officer Selection Board that he nixed?

MR NUGENT: He did that almost a year after he was unsuccessful the first time. Sorry, I'm going to have to – I'm not very good at years here. But basically - - -

15 FLTLT ROSE: If you need to refer to your statement for years, then you can.

MR NUGENT: I think it was about, you know, within a year or within about eight months of him finishing school.

20 FLTLT ROSE: So he was successful at that second Officer's Board.

MR NUGENT: Yes, he was.

25 FLTLT ROSE: Then I understand that he went to the Royal Military College Duntroon.

MR NUGENT: Yes.

30 FLTLT ROSE: Do you remember what year that he went there?

MR NUGENT: So he went in July 2018.

FLTLT ROSE: How long was he at Duntroon?

35 MR NUGENT: 18 months as a direct entry officer.

FLTLT ROSE: Did he know before he went to RMC that he wanted to do pilot training, or did that develop, that interest developed at RMC?

40 MR NUGENT: Yes, so Max was not one of those kids that had the burning ambition to be a pilot. His ambition was to join the Army as an officer. It was really his exposure at the YOU session in Tamworth was his opportunity to look at becoming a pilot, and then he was sort of streamed that way, and he was sort of medically screened and whatnot prior to going

45



down to Duntroon. And then it was a matter of him successfully, I suppose, completing his training down there and then selecting aviation as one of his choices of corps.

5 FLTLT ROSE: Did he go through further flight screening at Duntroon?

MR NUGENT: Yes, he did. Yes, and that was – if my memory serves correctly, it was when he was in the second class down there. So he was in his second six months at RMC; that they then moved them – you know, he  
10 did the initial – or, sorry, the further training or assessment for pilot capability.

FLTLT ROSE: Was aviation his first choice, his first preference?

15 MR NUGENT: Yes, it was.

FLTLT ROSE: Where did Max then commence his pilot training?

MR NUGENT: In East Sale on the fixed wing planes.

20 FLTLT ROSE: That's in Victoria.

MR NUGENT: Correct.

25 FLTLT ROSE: How long was he at East Sale for?

MR NUGENT: He was in East Sale for six months for his basic pilot training, and then he was moved to his basic helicopter training at Nowra, or HMAS *Albatross*.

30 FLTLT ROSE: Where did he get his provisional wings? Was that after East Sale?

MR NUGENT: Yes.

35 FLTLT ROSE: Did Max talk to you about his experiences at East Sale?

MR NUGENT: Yes, he did. Max and I communicated very, very, consistently and regularly, either by phone or by text, and always when he  
40 had something interesting, or he was going to fly, he would let us know. OneCheck technology allows you to follow planes in the air, so he'd let us know that I was going to fly today, and his call sign or the number, and we could, you know, look at it on the computers or whatnot. Mainly of him going in circles.

45

FLTLT ROSE: Did he enjoy his time at East Sale?

MR NUGENT: He loved it. Yes. He was really - with a really good cohort, and his classmates, they, you know, developed a strong relationship, primarily I suppose because of the COVID experience, and they were either  
5 locked down on base or they were limited for travelling, so they certainly were a tight group.

FLTLT ROSE: I want to take you to Annex A of your statement.  
10

MR NUGENT: Yes.

FLTLT ROSE: What is this a photograph of?

MR NUGENT: It's a photograph of the award Max got for the most  
15 proficient – I think these are my words probably – most proficient pilot on his basic pilot's course, and he was quite shocked to receive that award. It's not something he expected.

FLTLT ROSE: If I just read it out, it says:  
20

*This is to certify that LT Maxwell Nugent is awarded the Clark  
Mayhew Memorial Trophy ADF 109 Basic Pilot's Course,  
awarded to the member who is the most proficient ARA pilot,  
25 achieving the highest average score for Air Training. Signed at  
RAAF East Sale this 31st day of July 2020 by  
WGCDR Chris Pouncey -*

who was the CO of 1 Flying Training School.  
30

MR NUGENT: That's correct.

FLTLT ROSE: And did he – was he awarded this at the end of the process  
of training at East Sale?  
35

MR NUGENT: Yes, that's correct. When they were awarded their  
provisional wings before they went to Nowra.

FLTLT ROSE: Was there a graduation ceremony from that school?  
40

MR NUGENT: There was, but the family didn't attend and whatnot  
because of the COVID lockdowns and whatnot.

FLTLT ROSE: Where was he posted to? You have mentioned it. I think  
45 he went to – you said he went to Nowra next.

MR NUGENT: Yes.

5 FLTLT ROSE: Was that at HMAS *Albatross*?

MR NUGENT: Correct.

10 FLTLT ROSE: Do you remember when he was there – vaguely what months or year? If you look at paragraph 30.

MR NUGENT: Thank you. Yes, August 2022 he went down to *Albatross*.

FLTLT ROSE: Is it August 2020?

15 MR NUGENT: Sorry, 2020, yes.

FLTLT ROSE: How old was Max roughly around this time?

MR NUGENT: Twenty-two.

20 FLTLT ROSE: Sorry, was that a question for me, or were you answering he was 22 years old?

MR NUGENT: Yes.

25 FLTLT ROSE: Is this where he commenced his helicopter training?

MR NUGENT: Yes, it was.

30 FLTLT ROSE: What helicopters – do you recall what helicopters he was - - -

MR NUGENT: EC135.

35 FLTLT ROSE: Did Max talk to you about his training in Nowra?

MR NUGENT: Yes, we spoke regularly about it. You know, he loved every minute of that.

40 FLTLT ROSE: At paragraph 31 of your statement you state that you and Marianna spoke to one of Max's instructors at his graduation from Nowra.

MR NUGENT: Yes, we did. The graduation wasn't a formal graduation. Again, we were about to go into the second COVID lockdown so the actual

45 formal graduation was cancelled and this was at a function afterwards.

FLTLT ROSE: Do you recall what the instructor told you about Max?

5 MR NUGENT: I recall that basically there's three things you need to be to be a good pilot: natural hands and feet, be a good bloke – and there was one other. So Max, out of that one, he got the good bloke award.

FLTLT ROSE: Where was Max posted to after Nowra?

10 MR NUGENT: From there, he went up to Oakey.

FLTLT ROSE: That's near Toowoomba in Queensland.

MR NUGENT: Toowoomba, Queensland, yes.

15 FLTLT ROSE: I take it that was when he converted to the MRH-90?

MR NUGENT: That's correct.

20 FLTLT ROSE: Did he choose to fly that, or was he directed to?

MR NUGENT: They're directed to, or allocated, yes.

FLTLT ROSE: Had he ever talked to you about a preference of aircraft?

25 MR NUGENT: He wanted to do air assault or Troop lift, so I think he was quite happy getting a job.

FLTLT ROSE: How often would you talk to Max when he was at Oakey?

30 MR NUGENT: Weekly, at minimum. By text message, more consistently.

FLTLT ROSE: What did Max discuss with you, if anything, about the MRH-90 training he was receiving at Oakey?

35 MR NUGENT: He just basically – you know, it was obviously an extension of their training from the 135, and aircraft-specific. He talked in general terms about the MRH-90; you know, that it was a highly, highly capable and technical aircraft. He didn't find it difficult to learn to fly. He just said

40 that, you know, it's a very, very technical, big machine.

FLTLT ROSE: Did he ever talk to you about using the simulator at Oakey?

MR NUGENT: Yes, he sort of – you know, basically that, you know, it was a fifty-fifty type thing. They had to practice on the simulator and then go out and do it live, particularly for their assessments and whatnot.

5 FLTLT ROSE: Did he ever talk to you about unavailability of aircraft and how that affected his training?

MR NUGENT: Yes, it frustrated him at times and, you know, there was groundings of aircraft for various reasons, or there was a lack of aircraft because of mechanical – or it might have been weather conditions that prevented them from flying. You know, he certainly – his preference would have been to fly live, as opposed to in a simulator.

10  
15 FLTLT ROSE: At paragraph 35 of your statement you state that Max told you at some stage while he was at Oakey that Defence had – and this is a quote – “Bought us Ferraris when a Commodore would have done”.

MR NUGENT: Yes. So that’s a direct quote from Max, and we talked a bit about – around that, and it’s – he described the MRH-90 as a, you know, highly capable aircraft that does multiple things, but not all of them well, and that, you know, he was basically saying that the MRH-90 was the Ferrari; you know, a fly-by-wire, highly technical aircraft as opposed to something like a Black Hawk, which was an older platform with a proven, I suppose, ability and capability.

20  
25 FLTLT ROSE: In this scenario, in his analogy, the Commodore is the Black Hawk?

MR NUGENT: Yes.

30 FLTLT ROSE: So in a sense was he sort of complaining to you about the capability of the aircraft?

MR NUGENT: Yes, so I suppose he wasn’t – I wouldn’t say it was a complaint. It was more of a limitation that, you know, the MRH-90 did, say, Troop lift of infantry soldiers particularly well because of the number of soldiers it could take on board, as opposed to in a counter-terrorism role of trying to fast-rope Special Operations soldiers onto buildings or something similar.

40 FLTLT ROSE: Was Max interested in the engineering aspects of the MRH-90?

MR NUGENT: Max, like a lot of pilots I suppose – and Max was a bit of a nerd, so he really, you know, embraced all of those sorts of things, and

had a very, very, strong understanding of the mechanics and the physics and whatnot of the aircraft, definitely.

5 FLTLT ROSE: What did Max tell you, if anything, about the type of assessments he was undergoing at Oakey?

10 MR NUGENT: Just that he would let me know that, “I’m going to do an assessment tonight”, or “I’ve got an assessment flight”. He certainly, you know, took it all, you know, in his stride. It was part of the requirements that he pass things to progress to the next phase. So he didn’t find anything  
overly difficult. He’d tell us if he was unsuccessful or failed one, or whatever he had – you know, he had a really good flight.

15 FLTLT ROSE: What was his attitude if he’d failed at a particular assessment?

20 MR NUGENT: He’s a very – was a very resilient person by nature, so he would’ve just taken that in his stride, and he’d ring and tell me, “How – I’ve had a great flight tonight”, or “I’ve had a dud and I’ve got to do it again tomorrow”, or something like that. It was part of the – part of the job, I would suggest.

25 FLTLT ROSE: Did Max ever talk to you about TopOwl, which is the helmet that the pilots wore?

30 MR NUGENT: Yes, he did. He described TopOwl to me as being just the fantastic addition to flying the helicopter because of the instrumentation that comes onto the visor. He found that it was excellent flying during the day. He wasn’t as much of a fan of it at night-time. He felt that the night-vision  
componentry of it just wasn’t – the clarity just wasn’t as good as the traditional night-vision tubes that he had flown using the EC135. He sort of tried to explain it to me in very layman’s terms that because the night-vision tubes are on the side of your helmet, it’s almost like your vision’s sort of not here, it’s sort of separated as it comes back on to your  
35 visor. Yes, we talked about that sort of thing.

FLTLT ROSE: Did he ever talk to you about the symbols that were on his visor and whether he found them distracting or helpful?

40 MR NUGENT: No, certainly during the day he said that it’s fantastic having all that capability there and he just said that at night-time you’ve really got to concentrate.

FLTLT ROSE: Did he ever say that there were incidents whilst he was being trained on the TopOwl that he found disconcerting at night, flying at night?

5 MR NUGENT: Not that I recall, other than I suppose the clarity issue that he mentioned to me.

FLTLT ROSE: Was Max involved in any flying incidents when he was at Oakey?

10

MR NUGENT: He was. He was forced to – and I’ll use the – emergency landing. He said they had to call a Pan when they had fumes in the cabin, so they had to put the aircraft down at the airfield and in his words, “I’ve never got out of the thing so quick”. Now, Max was six-foot-four so it would have been quite the sight scrambling out.

15

FLTLT ROSE: Was he the flying pilot during that incident?

MR NUGENT: He was, yes.

20

FLTLT ROSE: So he had to conduct the emergency landing?

MR NUGENT: Yes, from my understanding.

25

FLTLT ROSE: Was he flying with an instructor?

MR NUGENT: He would have been, yes.

FLTLT ROSE: You said that was a night flight, did you?

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MR NUGENT: That was a night flight, yes.

FLTLT ROSE: What was the result? What was the damage to the aircraft that he reported to you?

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MR NUGENT: There wasn’t any damage to the aircraft, from what I understand. There was just something in the ventilation system, from what I gather.

40

FLTLT ROSE: Did he go back to flying quite shortly after that?

MR NUGENT: I think probably the next day. I don’t recall him saying that there was any break in doing that.

45

FLTLT ROSE: Was he rattled by that incident?

MR NUGENT: Not by that incident, no.

5 FLTLT ROSE: I want to ask you some questions about Max's posting to 5 Aviation Regiment.

MR NUGENT: Yes.

10 FLTLT ROSE: Do you recall when Max posted to Townsville to 5 Aviation Regiment?

MR NUGENT: You're going to have to - - -

15 FLTLT ROSE: Paragraph 46.

MR NUGENT: Thank you. Yes, May 2022.

20 FLTLT ROSE: At the same paragraph of your statement, you state that Max told you that he had to do his apprenticeship at 5 Avn.

MR NUGENT: Yes.

FLTLT ROSE: What do you think Max meant by that?

25 MR NUGENT: That that was his first posting to an operational Regiment on the MRH-90 and he expected to be there for three years.

30 FLTLT ROSE: Did he have a choice in that posting or was he directed to 5 Avn?

MR NUGENT: No, he said to me that all junior pilots on that cycle, they'll go to 5 Aviation and then potentially down to 6 Aviation from there.

35 FLTLT ROSE: Do you recall how many pilots were on his training course at Oakey?

MR NUGENT: On MRH-90?

40 FLTLT ROSE: Yes.

MR NUGENT: Three.

45 FLTLT ROSE: Sorry, you said then – could you just remind me how long he thought he was going to be at 5 Aviation?



MR NUGENT: Three years he thought he'd be there, three years.

FLTLT ROSE: Three years, okay. Then in the end, how long was he there for?

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MR NUGENT: Six months.

FLTLT ROSE: I'll ask you some questions about that subsequent posting in a moment. Is it the fact that during that time, the six months that he was in Townsville, Max met his partner?

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MR NUGENT: Yes, that's correct.

FLTLT ROSE: What was her name?

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MR NUGENT: Chadine.

FLTLT ROSE: Is she here today?

20

MR NUGENT: Yes, she is. There she is, yes.

FLTLT ROSE: Did Max ever tell you about any flying incidents he was involved in at 5 Avn?

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MR NUGENT: Yes, he had a bat strike over Proserpine that forced them to put the aircraft down and then they had to basically do an assessment on the aircraft to see whether it was able to be returned back to Townsville.

FLTLT ROSE: Was he the flying pilot?

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MR NUGENT: Yes.

FLTLT ROSE: So he conducted the emergency landing?

35

MR NUGENT: Yes.

FLTLT ROSE: Was he rattled by that incident?

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MR NUGENT: No, I have a memory of one of his colleagues saying he held the record for the most birds hit at East Sale, so he was used to bird strike or bat strike. But he shared some photos with me that I no longer have of some blood splatters down the side of a part of the fuselage.

45

FLTLT ROSE: Where did he deploy to, or did Max deploy while he was in 5 Avn?

MR NUGENT: Yes, he went out on to the exercise off – I can't even think of the name of it now but basically up through Indonesia and to India and whatnot off the Navy ship.

5

FLTLT ROSE: How long was he on that deployment for, or exercise?

MR NUGENT: I'm going to say about six weeks, possibly eight; I can't remember.

10

FLTLT ROSE: What did Max tell you about how much flying experience he got whilst he was at 5 Aviation Regiment, and that's in terms of how often he had the opportunity to be the flying pilot on sorties?

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MR NUGENT: He basically said, as the junior pilot, he's flying pretty much all the time, unless it's the long transit stuff where they might be swapping between pilots just for a fatigue type maintenance.

FLTLT ROSE: Did you have any understanding of how often he was – how many missions, for example, he might be conducting per week?

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MR NUGENT: It was a combination of aircraft availability and also where they are on a training cycle or whether they were on some sort of operational cycle, but in short, he couldn't get enough flying, I suppose.

25

FLTLT ROSE: Was he doing lots of flying on this exercise in Asia?

MR NUGENT: Not as much because obviously the ship's transiting between countries. But then when they were in – he talked me through a number of times where he flew supplies between Navy ships and whatnot.

30

FLTLT ROSE: Did Max ever mention having any secondary duties whilst he was at 5 Avn?

MR NUGENT: Yes, just a watch keeper or log keeper or overnight on call as the duty officer, things like that.

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FLTLT ROSE: Did he ever complain to you about that being distracting or tiring?

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MR NUGENT: No, it was the nature of his job, that was part of his duties.

FLTLT ROSE: Did he ever complain to you about generally being fatigued by the job at 5 Avn?

45

MR NUGENT: No, Max was – he was professional in that. He knew how to manage his own fatigue and whatnot, yes.

5 FLTLT ROSE: What do you mean by that? What would he do?

MR NUGENT: Well, he was a good sleeper, and he also took his work-life balance seriously. So, no, he never complained about being overly tired or fatigued.

10 FLTLT ROSE: You mentioned before that he was only in 5 Avn for six months.

MR NUGENT: Yes.

15 FLTLT ROSE: Where was he posted to after that?

MR NUGENT: To 6 Avn.

FLTLT ROSE: Was he surprised that he was posted there?

20 MR NUGENT: Yes.

FLTLT ROSE: What did he talk to you about that decision?

25 MR NUGENT: So he basically went for a flight with the Commanding Officer just around the general area and he was under the guise that he thought it was the CO just maintaining his accreditations. Then he got back that night and then the following day he got called to the Commanding Officer's office when he was told he was moving to 6 Aviation. I jokingly  
30 said to him, "What, was the boss hosting an audition for you?", and he goes, "No, I've got no idea why", and he was moving to 6 Aviation. Having said that, that was his stated goal, was to go to 6 Aviation, so he was happy about that.

35 FLTLT ROSE: Was he aware that there was – the MRH-90 was being phased out from 5 Aviation?

MR NUGENT: Yes, he was aware of that. He just wasn't sure of the time  
40 line. Again, he's a junior officer, he just said, "I'll do what I'm told, when I'm told".

FLTLT ROSE: Had he actually put in an active application to move to 6 Aviation, or you're not sure?

MR NUGENT: No, it would have been something that he discussed with his superiors I would imagine. It's certainly something he discussed with me.

5 FLTLT ROSE: Was – Max understood that he would have to transition away from the MRH-90 in due course and convert to the Black Hawk?

MR NUGENT: Yes.

10 FLTLT ROSE: Was he aware of that?

MR NUGENT: Yes, and he was looking forward to that.

15 FLTLT ROSE: Do you understand when he would have started that Black Hawk training?

MR NUGENT: I believe it would have been late last year.

20 FLTLT ROSE: Ms McMurdo, I'm turning to a different topic now. I note the time. Would this be an appropriate - - -

25 MS McMURDO: Yes, 4.30. Yes, I think it would be. Unfortunately, we won't be able to – even if we sat on for another half an hour, I don't think we could be sure to finish you. So if it's all right with you, we'll adjourn now.

MR NUGENT: Absolutely fine, ma'am.

30 <WITNESS WITHDREW

35 MS McMURDO: Just before we adjourn, could I mention, we saw earlier today the vulnerability of many Defence witnesses. I understand there is a psychologist from the Defence here to support people. Could I just ask that if the psychologist or anyone in Defence is aware that a witness that we're calling from Defence is vulnerable, to let us know so that we can handle things as sensitively as possible. Thank you.

40 Thank you. We'll adjourn now until 10 o'clock tomorrow morning.

**PUBLIC INQUIRY ADJOURNED UNTIL  
TUESDAY, 30 APRIL 2024 AT 1000**