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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 and MAJ L CHAPMAN, Counsel Assisting

LCDR M GRACIE, representing CAPT D Lyon
SQNLDR J GILES, representing LT M Nugent
MAJ H PEROTTET, with LCDR M TYSON, representing CPL A Naggs
SQNLDR C THOMPSON, representing WO2 J P Laycock
COL N GABBEDY, representing MAJGEN Jobson
SQNLDR M NICOLSON, representing D10
COL S THOMPSON, representing BRIG D Thompson
MR D WELSH, representing the Commonwealth

1000, TUESDAY, 13 AUGUST 2024

DAY 18

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

Signed	.....	**Date**	.....	(Chair)
Signed	.....	**Date**	.....	(Recorder)
Signed	Epiq Australia Pty Ltd	**Date**	28/08/24	(Transcription)

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EXHIBIT LIST

Date: 13/08/2024

Number **Description** **Page No**

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WITNESS LIST

Date: 13/08/2024

Name Of Witness **Page No.**

MS McMURDO: Yes, COL Streit.

COL STREIT: Good morning, Ms McMurdo, AVM Harland. Before I resume the examination of D2's evidence, can I just say something in relation to witnesses. Can I make clear, in the clearest terms, no person who is a witness is to be present in this hearing room or any other hearing room until they're called to give evidence. So, in other words, they're not permitted to be here to listen to the evidence of other witnesses. This includes a witness is not permitted to watch or listen to the livestream of the evidence of other witnesses unless and until they, themselves, have given evidence.

MS McMURDO: Or I have permitted it.

COL STREIT: Or you have permitted.

MS McMURDO: If it's specifically permitted. And if I do that, I'd be saying it publicly.

COL STREIT: Yes. That brings me to, if I refer interested parties' attention to paragraph 23 of the Practice Note that addresses this very issue. The Practice Note was carefully constructed and a considered document. It provides guidance to everyone involved in the proceeding, Ms McMurdo, as to what your requirements are in the conduct of these proceedings.

A witness not being present in a hearing, or present watching other evidence on a livestream, is about protecting the integrity of evidence that's called before the Inquiry. I may, if I see fit, ask a witness when they're called to give evidence, as to whether or not they've watched the livestream. I may explore that issue with that witness to the extent to which they've watched the livestream, and then I may ask them why they've watched the livestream, noting the Inquiry's requirements in this matter.

MS McMURDO: Yes. Well, if there was any confusion beforehand about the responsibility of future witnesses in this Inquiry, those doubts should now be very clear – should now have been clarified very well. To repeat what you have said, future witnesses should not be either present in the Inquiry hearing room or watching the livestream without permission from me to do so.

COL STREIT: Thank you. One very small further point is that if a person who considers they might have relevant information to provide to the Inquiry but is yet to be contacted by the Inquiry, and if they have a doubt about whether or not they are a witness, the simple issue or response is to

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reach out to the Inquiry and ask that very question and it will be confirmed one way or another very quickly.

MS McMURDO: Thank you.

COL STREIT: Thank you for that time. May the witness please have his two statements.

MS McMURDO: Yes, 52A and B.

COL STREIT: Thank you.

<D2, on former affirmation

<EXAMINATION-IN-CHIEF BY COL STREIT, continuing

COL STREIT: D2, can I just take you to paragraph 86? We left your evidence yesterday dealing with a couple of matters. In particular, in relation to your experiences in your civilian role, flying greater hours than what you were in your military role, but otherwise feeling, comparatively speaking, a lot less fatigued, if fatigued at all, in your civilian role.

Can I just turn to paragraph 86? You deal with some matters about some processes that the Regiment – that is, 6 Aviation Regiment – was considering during your time there to deal with this issue about workload and fatigue associated with a significant workload and, in attempts to separate out the training burden of managing a Special Operations Qualification Course against the unit's requirement to maintain an operational capability.

You go on at paragraph 87, and paragraphs after that, to deal with that issue. Can I just ask you, in your words, just to explain some attempts by the unit to manage that particular issue?

D2: Yes. So, as you've stated, we identified that at that point in time – and it's specific to the introduction of MRH into the Regiment – that we had one operation Squadron that was responsible for the introduction of MRH into the Regiment; the Force generation of the pilots and aircrewman that we would need, or aircrew in general, that we would require to meet our requirements to the ADF and government; and we were also responsible for maintaining that operational Force throughout the calendar year.

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It was identified in the second half of 2021, using examples that are existing within the ADF, that perhaps that's not best practice to have a Force that is self-generating and being operationally capable, and it might be better to divide the requirements for that unit within the Regiment, and then sort of divvy out the annual workload and sort of isolate people from those tasks.

COL STREIT: Ultimately, did any of those discussions that you had which are identified at 85 of your statement and the individuals concerned, did they manifest in any change at a later stage, to your knowledge?

D2: So at the time, with the manning that we had and the rough availability of assets, so MRH that were available to us to fly each day, we encountered a few problems with effecting that immediately. The people at the time that held the operational qualifications, including myself, were also the people that can create new aircrew.

So it's hard to extract us from the operational side of things, remove us from that until we've created enough people that can backfill those positions. Then, additionally to that, if we were to completely separate that training from the online Squadron but leave the online Squadron able to continue training throughout the year, we would need additional resources, online MRH, which would place an additional burden on the maintenance workforce and the fleet to be able to effect that immediately.

So it wasn't something that we could put into place into 2023. It was sort of more of a vision that the CO and the rest of us had for where the Regiment could go with that, then also with the main intent to isolate the fighting Force and just allow them to be able to train and get on with it.

COL STREIT: Prior to your departure from the Regiment – that was approximately at the end of 2023, was it?

D2: Yes, October 2023.

COL STREIT: October. To your observation, had any other changes occurred?

D2: So to pre-empt the restructure, we were also looking at the Learning Management Packages around the Special Operations Qualification Course, and if we were to go down that path, how do we structure the Learning Management Packages so that they facilitate that course being conducted outside the Squadron? What are the needs and requirements that that aviator would need to complete and then march into the Squadron?

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Then how could we restructure subsequent upgrade Learning Management Packages, so Captain and Aircrewman senior, so that they could be more effectively run? Or there were some options on how the Squadron could export and run those courses in their calendar year. That was probably not traditionally how the Regiment had done it. The Regiment in the past had done them in quite large blocks and if you do two to three of those, say, six weeks blocks throughout the year, you're effectively taking up 12 to 18 weeks of the online Squadron's time generating those courses, running them, doing all the post-activity requirements around the course.

In that time, it's continuation training for the Squadron, but they're not necessarily focusing on the pointy end; that's the basic end of Special Operations flying. So we looked at those LMPs. We endeavoured not to remove anything from the LMPs. Just move stuff – most of it was actually just changing some of the assessments and putting a bit more of an onus on the co-pilot and what they were actually assessed and qualified against in the early stage.

The training was effectively the same, if not more, from a flying standard. And we were looking at trying to create a more linear progression between the co-pilot qualification and the Captain qualification, because it was identified that it wasn't quite a linear progression between the co-pilot qualification in terms of the Special Operations approach.

They didn't get to fly it a lot in between their initial qualification and their upgrade, and we assessed that it would be better to have a more linear development across roughly two years that they are gaining experience in that world, to also be flying those approaches in a controlled environment. So that was the sort of basis around the changes to the LMPs.

COL STREIT: Did you then get to experience the changes occur whilst you – or before you departed? That is, you got to experience the benefit of those changes?

D2: So we – the delay in running the first SOQC in 2023 was to allow that process to be carried to completion and the Learning Management Packages be signed off, and then exported those Learning Management Packages for the first SOQC which was run in May, I believe, of that year. And LT Nugent was a trainee and graduated from that course.

COL STREIT: We'll return to that point shortly. But just in relation to, for example, paragraph 92 of your statement, you say that in 2022/2023 CAPT D6 and you were –

monitoring the level of flying proficiency within the Squadron, and

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the OC was receptive to changes in complexity of planning, tasking, if he thought things needed to be simplified. Both the OC and CO were supportive of us when we suggested changes.

You also say the OC –

cancelled night flying on an occasion in 2022 and would change night flying plans or timings where he assessed the Troops were too fatigued to complete the tasking.

Just in relation to your evidence there, you say the OC cancelled night flying on an occasion in 2022. Is that, to your knowledge, the only time that he cancelled night flying in 2022?

D2: That's the example that I can specifically recall.

COL STREIT: Sure. And just to clarify some use of language, where you say, the last sentence –

where he assessed the Troops were too fatigued to complete the tasking –

does that mean the Troops were fatigued but not sufficiently fatigued to complete the tasking, or did you mean something else when you said that?

D2: Yes. So it might mean that at the end of Wednesday or Thursday – at the end of the week, as we've been flying all week, where we – we always separate day and night flying and have a break, and we'll re-brief night sorties for the night plan and, if we assessed that we'd had a big week, and we were looking at how many serials we were going to go out and fly that night, we had the option to reduce those serials or move the timings forward so we weren't flying too late, et cetera. So it was in our wheelhouse, I guess, to make adjustments based on what we were sensing around the Squadron, and that's been standard the whole time I've been at 6 Avn.

COL STREIT: There was a level of flexibility then in the training tempo?

D2: Yes.

COL STREIT: You could test and adjust, depending on what you'd done in the previous couple of days?

D2: Yes, correct. And there's certain minimums that you need to meet for the qualifications. And then, to increase a level of proficiency beyond that, you can add serials. But it was a balancing act between, "Well, how long

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do we keep the guys in the air?" versus meeting requirements for qualifications.

COL STREIT: You mentioned conducting a Special Operations Qualification Course, which LT Nugent participated in, in about May 2023. If I can take you to paragraph 106 of your statement, please. So, first, can you just explain the leadup to that Special Operations Qualification Course? How was it planned into the unit training program?

D2: So we were off the back of the build-up phase that I discussed yesterday, where we were doing sort of more individual training events, sometimes a couple of different ones a week. And then the SOCQ was set for a period where it was to be placed in the calendar, I guess. And that SOQC, as a natural progression there's some pre-requisite LMPs around insertion/extraction techniques that has to occur before anyone can go onto the next course. So that's worked into the program. And then the program was set for – I believe it was about two, two and a half weeks at the time.

COL STREIT: And did something occur that then compressed the program from what was planned?

D2: So I don't now fully understand the driving forces or the reasoning behind it, but the course, in its state – the LMP, in its present state for that course, should take approximately two weeks, or eight nights, of flying. And instead it was designed around an experimental live-in week where the trainees and Flying Instructors also were given the option to stay on base and have the course run from commencing on Friday night, Saturday off, flying Sunday, and it was meant to end on the Thursday. And then we lost a night due to weather, so it ended up ending on the Friday night.

So rather than have the weekend between – I think they were – a different approach to minimising the impact of that course across the annual calendar, potentially, was to try and reduce the time that that course was actually planned over, so it only takes a week and a bit out of the program instead of two to three weeks.

But, yes, it resulted in a high flying rate for the instructors. And then, by the Friday night, we had worked a lot, and when we did a countback, we had exceeded the threshold of, at the time, I believe, 55 hours to submit a Sentinel fatigue report. And so we ended up submitting that report. And then, in addition to that, provided feedback to the course that – or the course design, that it's probably not the best in terms of workload for instructors and we wouldn't prefer that as a course of action going forward.

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COL STREIT: So in short compass, it was an attempt to reduce what otherwise would be a two to three-week course to a period of, what, nine to 10 days – or eight to nine days?

D2: Yes, I'd say that particular LMP would be about two weeks, across a weekend. So, yes, I'd say eight days.

COL STREIT: Eight days. So an attempt to reduce the course to a lesser period of time – conduct the same qualification course – in order to free-up more time in the unit training program that that course might otherwise have taken up?

D2: I believe that to be the reasoning, yes.

COL STREIT: So that other training can be undertaken in that free space. You've got a couple of extra days now. But the consequence of that was a greater workload for you, as a Qualified Flying Instructor, and another QFI running the course, than otherwise you'd previously experienced?

D2: Yes, I'd agree with that.

COL STREIT: And that exceeded what you've explained was the minimum – or the maximum work period of something like 55 hours of work across that period of time. And that – is that correct?

D2: It's not a "maximum work period"; there was just a threshold. And, I apologise, I don't know where the advice had come down from. I know there's some document that came down from somewhere that specified, I think it was 55 hours. So that was what I was working on at the time.

If you exceeded that in a work week, you were to submit a Sentinel report in the workplace – it's a Workplace Health and Safety Tracking Tool. And then I guess that gives, across the year, how many of these reports are actually being submitted. So, yes, we submitted it.

COL STREIT: Your fellow QFI in this course was D6.

D2: Correct.

COL STREIT: And he completed, did he, a Sentinel report recording the issue of fatigue that you and he had experienced in conducting, effectively, a compressed Special Operations Qualification Course?

D2: That's correct.

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MS McMURDO: Those participating in the course, did they exceed the hours as well, or not?

D2: They would have in terms of contact hours. The trainees would have, yes, ma'am, in terms of contact hours.

MS McMURDO: So it wasn't just you and D6, it was also everyone else who - - -

D2: No, and we probably – because we work quite closely with each other, and have most of our careers, it was probably more managing it in between us in terms of a conversation that, "Hey, we need to do this", and we probably should have done it on behalf of the whole course.

AVM HARLAND: What was the maximum duty day set at the time?

D2: Well, the SI requirement is 14 hours for a maximum duty day, if I can go into that here, if - - -

AVM HARLAND: Was that at barracks or on exercise?

D2: That's a flight duty day. So that's – well, that's extant throughout the whole year. And within the Regiment we would try and manage that, that our programming, particularly for a course like this, wouldn't exceed 12 hours. We liked 11 hours. It seemed to fit the training requirements. We would try and keep it below 12 hours.

And then outside of those periods of sort of higher tempo, we were having discussions on how to reduce it even further and try and get it back to an eight-hour workday, but sometimes training requirements sort of exceed your ability to just get that done in a day. So if you step from a – typically we'd do two day sorties and two night sorties, and then that's a certain number of trainees.

If we wanted to go to an eight-hour workday, we'd have one day sortie and one night sortie, and you'd halve your trainee output. And in an environment where we weren't getting through enough people, it sort of – from a QFI standpoint, or a QAI standpoint, because we're the people in the aircraft the whole time, trainees aren't, we thought we might just have to wear it for a certain amount of time, just to get the trainee numbers through, I guess.

MS McMURDO: You're constantly looking to do more with less.

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D2: Well, yes. It's just a balancing act of meeting government requirements across multiple calendar years and posting cycles, and just using the time you have available to achieve that. Yes.

MS McMURDO: Who else, apart from you and D6, was involved in that exercise? Using the pseudonyms where appropriate, please.

D2: Sure. Another Flying Instructor was D14. D15 was the OPSO that planned and – helped plan and execute it. D10 as the OC, as he flew in the course, and then the trainees were – from a co-pilot's perspective, was D9, D5 and LT Nugent. And then, simultaneously, there's a front-seat component of the course, and then there's a back seat.

So Aircrewman Junior Course, which is just – it's run at the exact same time with similar events, and the Aircrewman Instructors for – I'll have to go to the alphabetical one, sorry – D8, Aircrewman Instructor, and it would've been Phil Laycock. And I don't see the other one on the pseudonym list, and it might have been the case that he wasn't there at the time. He might have been in the US. Yes, they should be able to provide more.

MS McMURDO: So not Alex Naggs?

D2: I believe he was qualified at that point, and he would have participated in the course as a qualified member, and so qualified aircrewman would sit in a pilot instructional aircraft, and then qualified pilots typically would fly an aircraft that had aircrewman instructional sorties in the back.

MS McMURDO: What about Dan Lyon?

D2: Yes, CAPT Lyon would have participated as a qualified member.

MS McMURDO: So he participated. So all these people then participated, and the aircrewman and pilots who participated all would have had the same 55 hours, and would have exceeded the - - -

D2: Potentially, ma'am. The whole Squadron participates in the execution of the activity, just to bolster the amount of aircraft that we have online, but not every qualified member flies every sortie. And if they only fly the first night sortie, they don't necessarily hang around until the completion. So we allow them to leave early, just so they can go home and get some rest.

MS McMURDO: So that's what I was just trying to work out.

D2: Sorry.

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MS McMURDO: No, don't apologise. In particular, the hours worked by the crew of Bushman 83, that's really what I'm wanting to know.

D2: Okay.

MS McMURDO: As to the crew of Bushman 83, are you able to tell us the hours that they would have done in this revised LMP?

D2: I would say that Phil and Lieutenant – or Max would have been a part of the entire course. Dan, I can't remember if he helped run the course as the Troop Commander, but it's pretty likely he would have been there as the Troop Commander a fair bit during the course, even if he wasn't flying. And Alex probably would have participated in a fair bit of it, but I honestly don't know, ma'am. Sorry.

MS McMURDO: Would we have those? Those records would be available? Would they have been kept?

D2: I think their logbooks would indicate how much they flew, which would indicate if they flew day/night throughout the entirety of each day, is probably the only record I could - - -

MS McMURDO: But it might not reflect the full hours that they worked.

D2: It might not. Yes, we don't log duty time in terms of start/stop.

MS McMURDO: Thank you.

AVM HARLAND: Just with respect to the duty time, you talked about the 14-hour days. That was at work, I'm assuming? So present at Holsworthy Barracks?

D2: Yes, so at least at 6 Avn – I can't speak to the other Regiments – but we would always indicate a start time that was your, effectively, flight duty period start time, and everyone was on the same start time. And then we kept everyone to that. And it was, effectively, a Troop brief that would start everybody, or an op sync. And then, so if someone wants to go to the gym, for example, that's considered on their own time, even if they turn up to work and use the work gym, because we just – you can't manage 30 people and different – he turned up two hours early, kind of thing.

AVM HARLAND: Yes, I understand.

D2: Yes.

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AVM HARLAND: So, I guess, I just wanted to establish that the 14 hours is time at work, and then on top of that there's transit time to and from home.

D2: Correct.

AVM HARLAND: What's the rough transit time, just for the general – is there a rough average between - - -

D2: I mean, people lived from Holsworthy anywhere out to – anywhere in the shire, out to the eastern beaches. So anywhere from, say, 20 to 40 minutes.

AVM HARLAND: Twenty to 40 minutes.

D2: Maybe longer in traffic. I lived at Maroubra for six years, and would often hit an hour, yes.

AVM HARLAND: Okay, great. Thank you.

COL STREIT: Is the Special Operations Qualification Course that was conducted – noting paragraph 106 of your statement, in June 2023 was that to ensure certain people had the qualifications so they could participate in Special Operations missions?

D2: Yes, that's the – it used to be called the Junior Co-pilot Course. We dubbed it the Initial Course because it's the baseline qualification to participate as aircrew in a Special Operations mission.

COL STREIT: I'm not being critical of you in any way in suggesting this to you, but is conducting the course in that way, which is compressed in terms of time and working so many hours to get people over the line, is that an example of pushing the limits to get the job done?

D2: That course encroached on the limits and that's why we reported it. And, yes, it's just an example of the pressures or perceived pressures of the annual training cycle and us trying to find ways to manage that.

COL STREIT: You can't fly missions for government in the Special Operations space unless you have qualified people; correct?

D2: Correct.

COL STREIT: And you can't get people qualified unless the unit itself conducts the requisite qualification courses?

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D2: Correct.

COL STREIT: And that burden was placed on 6 Aviation Regiment alone, wasn't it?

D2: In my time, it's been that way.

MS McMURDO: So there was some rush to get these qualifications sorted before the Exercise TALISMAN SABRE started the following month; is that - - -

D2: We were trying to complete the course before TALISMAN SABRE, yes, ma'am, because the TALISMAN SABRE is a good follow-on activity for people who have just completed the course to further their proficiency in the mission set. But we did have two weeks off the back-end of that course for flow-over. So we were happy that the course could have pushed into the next week if it didn't get done. It just happened that we did actually achieve the goals of that shorter timeline that was allocated to us.

MS McMURDO: And in that timeframe, are you able to assist us as to whether the crew of Bushman 83 worked 14-hour days or longer than 14-hour days?

D2: I don't recall anyone working 14 hours days or longer. It was probably around 11 to 12 hours each day.

COL STREIT: You deal with some matters at paragraph 109 and 110 and 111, the detail of which I won't lead from you other than by way of summary that your experience is organisational change across Aviation Command, for all different reasons, has been an impact, has it, on the management of workload, from your experience?

D2: Yes. Introducing the operational types will increase everyone's workload in that Regiment. And then you effectively end up splitting your workforce across all elements, across two different platforms while you're trying to maintain a capability. So, yes, it's difficult to manage. And then on top of that, people at the individual level are trying to manage their individual careers and what that looks like.

And what we have experienced, just in the MRH transition, is that a lot of those individual careers, for certain people who are trying to achieve certain milestones, effectively, were put on hold while they then chased those again on a new type. And now the Regiment's introducing another new type. And so those people are still caught in that vortex of no progression. And

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that, in my observation, can create a lot of personal angst, trying to work out where your career is going – and we're talking about three or four years for some people.

And now the same people are going through it again. And so I think that when people address fatigue potentially in snapshot surveys, it's not necessarily just physical fatigue that they are reporting, it's an overall sense of their environment and their interaction with it, and their satisfaction that they are getting from that and where that's going, and trying to project their lives. That change has been quite difficult for people.

COL STREIT: At paragraph 111 of your statement you touch on some of those things, and you say:

> *Couple this with a progressive increase in governance relating to the workplace* –

and from your observation –

> *people were probably experiencing increased levels of mental and emotional fatigue and occasional burn-out.*

Is that correct?

D2: Yes, that's correct.

COL STREIT: Now, at paragraph 112 you say after the Special Operations Qualification Course, you had a relatively low-speed period at work for two weeks and then deployed to TALISMAN SABRE.

D2: Correct.

COL STREIT: You didn't go into Exercise TALISMAN SABRE fatigued. You say:

> *Looking back, the work was fairly consistent around the Squadron leading up to it.*

Just in relation to your observations of people potentially being fatigued in the Regiment, I note at paragraph 108 you say this:

> *I was aware that people in the Squadron were feeling fatigued in 2023 – like MAJ D20 – and I would check in on her from time to time.*

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Just in relation to that, what was the reason – it might seem obvious as a question, but what was the reason you checked in on her?

D2: Well, I think she was the classic example of someone who's caught up in the lack of progression through no fault of her own, it's just purely a timing and circumstantial thing. And she would have been close to certain upgrade milestones on Black Hawk, and had to repeat that on MRH and was on the cusp of achieving it again and then looking at a posting out at the end of that year. And then doing certain courses to achieve that next posting and be ready for that next posting, which would be taking her away from certain flying milestones. So I think she was the example of the mental and emotional strain that that environment was placing on people.

COL STREIT: She also, to your observation, had to deal with the requirements of being a Troop Commander and the burden that's associated with that responsibility.

D2: Yes, correct.

COL STREIT: Can I take you now to paragraph 113? We'll move to your evidence in relation to Exercise TALISMAN SABRE. This will require me to move between your Defence statement and your addendum statement, and I'll identify that process where I transition.

You deployed with the rest of the aircrew in 6 Avn for TALSIMAN SABRE on 24 July 2023; is that correct?

D2: That's correct.

COL STREIT: Now, at paragraph 114 you say on the week days and some of the weekends prior to the deployment you went in to conduct planning for the first full mission profile that was going to be conducted on TALISMAN SABRE. Is that correct?

D2: Yes, that's correct.

COL STREIT: And on that weekend prior to the deployment – so you deploy on Monday, 24 July – so the Saturday and Sunday are 22 and 23 July, respectively. Would you agree with that?

D2: I agree.

COL STREIT: Did you go in both days, or was there only one day you went in?

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D2: I don't believe I went in on the Sunday. I was trying to recall. I believe I was planning on the Friday afternoon and the Saturday morning, and then I think we were released from that planning sometime in the afternoon on Saturday. And then I don't believe I went in again on Sunday.

COL STREIT: Just before you deploy – I just want to ask you in relation to any conversations you've had with CAPT Lyon in relation to the issue of workload and fatigue close in time – well, at any point in time prior to the deployment on Exercise TALISMAN SABRE. You touch on this a little bit at paragraph 45 of your addendum statement.

Did you recall CAPT Lyon saying anything along the lines to you about him feeling fatigued as a result of the workload that he was experiencing at the Regiment?

D2: The conversations that I recall centred around a – Dan, I believe was allocated to plan the Papua New Guinea trip that was to be executed later in the year after TALISMAN SABRE. The Troop Commanders tend to leap frog each other in terms of exercises. And so, I think, Dan was not the active Troop Commander for TALISMAN SABRE but he was looking, you know, two months forward. And Papua New Guinea is an international deployment and it has a fair bit of administration around getting that many people overseas, and he was working on that at the time.

But I don't recall, at least in conversation with me, him expressing how fatigued he was at that time. But he did spend some significant hours at work trying to work through that at the time.

COL STREIT: Prior to TALISMAN SABRE, do you recall whether CAPT Lyon – and I'm not suggesting you said this; I'm just exploring your memory, do you recall whether or not CAPT Lyon said anything to you about his concerns about maintaining flying proficiency on the MRH-90, given the burden of administration and command responsibilities that he had as a Troop Commander.

D2: It wasn't prior to TALISMAN SABRE, but Dan had expressed that to me. Given my experience as a Troop Commander in 2017 and 2018, we had a conversation around that, effectively, when you take over as a Troop Commander, you're almost a bit reliant on your proficiency level at that point in time. It's unlikely during that time in that position that you're going to advance your proficiency level, particularly for a family man that's got small children at home.

If you are unable to open the technical publications while you're at work due to your requirements, it's unlikely that you're going to go home and

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ignore your children and read a Flight Manual or a Standardisation Manual, unless you thought it was particularly pertinent to an event that was coming up and you needed to do it, then you would.

Yes, so we had had a conversation around where you can build in time each day to go over the basics, the stuff that's important as an Aircraft Captain. But it's not going to get better for you until this position is finished, and I'd say most people in that position would say it's a similar experience.

COL STREIT: That was your experience on Black Hawk, when you were first at the Regiment?

D2: Yes, I would say that my mastery of the mission set got better and I advanced that, but we were doing very regularly. But my technical mastery of the aircraft, I was a bit more reliant on my previous knowledge than being able to build on that knowledge. It was more of a try and maintain it as best I can.

COL STREIT: Can I return now to your addendum statement. At paragraph 15 you say you arrived at Proserpine late afternoon on Monday the 24th of 2023, and that you went to bed about 2300 or 2400. Can I just take you to – now focusing on your Defence statement and, in particular, can I take you to paragraph 15 and we'll move from there forward in your Defence statement. So at paragraph 15 you identify three full-mission profile missions that were to be conducted. Is that right, what you refer to?

D2: That's correct.

COL STREIT: You say that a full mission profile is a training scenario that allows all elements involved to exercise realistic planning and execution timelines. They often involve multiple assets from different Services, government agencies and, in the case of Exercise TALISMAN SABRE, other nations and armed Forces. You say the incident – that is, the incident on 28 July 2023 – you say that the incident occurred during the second full mission profile.

D2: That's correct.

COL STREIT: So was the plan on Exercise TALISMAN SABRE for the deployed Force to transition to night flying?

D2: Yes, that's correct. So it was a day deployment up to the airfield, and I believe we needed to get into the airfield before another exercise happened at the airfield that evening. So our options were to either wait for that exercise to occur and then go in the next day, which would have compressed

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the timeline for the week, or do a day deployment up there to get in before that event occurred. Effectively, be set up and out of the way, then transition over the next two or three days from the day into afternoon, into a night cycle, then be set for the later FMPs in the week to be a bit of a later cycle.

COL STREIT: Just taking a step back. The Monday to Friday before the deployment on the 24th, that week, were you on night routine that week, or day routine?

D2: I don't recall, sorry. It might have been an afternoon routine, but I don't recall, sorry.

COL STREIT: When you went into the base on the weekend – which I understood you to consider might have been the Saturday – was that during the day or was that at night?

D2: It was during the day. It was a late morning start, I think 10 am-ish.

COL STREIT: So the fly up on the Monday was during the day?

D2: Correct.

COL STREIT: Then the plan was to do that night transition to – well, to undertake the transition period for night flying the next day?

D2: Yes, across, effectively, three nights before: the Monday night, Tuesday night, Wednesday – I believe was the first full mission profile. So that's – I believe I said we went to bed about midnight, so that's a long day. However, we were looking to go to sleep later and just begin that transition.

COL STREIT: At paragraph 16 you say:

> *During the week of the exercise, aircrew were based at the back end of the camp, slept on stretchers, with 17 to 18 people to a tent.*

In terms of the number of people in a tent, had that been your previous experience on deployment with that number?

D2: These were newer tents and they were far bigger. The make up of them was a fair bit thicker canvas and a far nicer tent. But, no, in previous exercises we were eight to – probably eight to 10 aircrew per tent.

COL STREIT: The tent that you were in, was it a combination of aircrew and other persons supporting the deployment, or was it just all aircrew?

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D2: It was a combination in my team.

COL STREIT: Was it a combination of people both on night duty and day duty?

D2: There were some elements in the tent that were on an earlier shift, a day shift, for want of a better term to use.

COL STREIT: Now, you say you were sleeping next to a heavy snorer – and I won't get you to identify who that person is, to save them from embarrassment – but you were sleeping next to a heavy snorer, so you used earplugs to get to sleep. Is that right?

D2: That's correct.

MS McMURDO: Were they effective?

D2: They were, although on occasion would – they're Softear plugs, so on occasion would fall out and I'd have to find it and put it back in.

MS McMURDO: So you slept okay with the earplugs?

D2: Yes, ma'am.

COL STREIT: At paragraph 17 you deal with a matter concerning the offer of sleeping medication. Did you take any medication on the first night?

D2: Yes, I accepted the Temazepam on the first evening, and took that for that sleep cycle.

COL STREIT: Had you undergone a process before the deployment that identified that you were a suitable candidate to receive Temazepam?

D2: I had, yes. And it's unable to be prescribed, to my knowledge, unless that process has been undertaken.

COL STREIT: Is that called a ground run?

D2: A ground trial, yes.

COL STREIT: A ground trial, thank you.

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AVM HARLAND: With respect to the ground trials, when you're approaching an exercise where you're going to have some challenging sleeping conditions or might be working off-cycle, does the Squadron get briefed to go and do this ground trial or is it just one of those things that's assumed?

D2: It would be a good idea, sir, I think. But it's assumed.

AVM HARLAND: So if somebody didn't happen to know about, or hadn't clicked about, doing the ground trial, then when they deployed, they'd be unable to use sleeping aids. Is that a true statement?

D2: That's a true statement.

MS McMURDO: Would it make sense with the tents to have the people who were getting up earlier in the morning in one tent, so that they didn't disturb those who were sleeping later?

D2: Yes, if it's possible, ma'am, it would be.

MS McMURDO: Do you know if that was possible here? It just seemed to me a little curious.

D2: Not to my knowledge, ma'am, no.

MS McMURDO: It wasn't possible?

D2: Well, not to my knowledge, if it was possible. The camp was very full when we turned up, and I believe we were briefed when we arrived that the camp was going to be quite full.

AVM HARLAND: Were you briefed pre-deployment on what to expect in terms of the sleeping conditions in Proserpine?

D2: We were. We were briefed that it would be tents.

AVM HARLAND: Thank you.

COL STREIT: Do you recall, by looking at your statement, at paragraph 17, what time you went to bed that night on the 24th?

D2: Paragraph 17? I believe I went to bed somewhere between 11 and midnight. I think that's in 115 of my addendum statement.

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COL STREIT: And you had started duty that day – on Monday, that is – at 6 in the morning?

D2: Each aircraft had a slightly staggered duty start time for that morning but, yes, it was roughly – it would've been somewhere between 6 and 7. It was roughly somewhere in there.

COL STREIT: At paragraph 18 you say you felt you had shifted your body clock by mission night on Friday 28 July as you did not feel over-fatigued that day. So, long day Monday, sleep Monday night, transition to night routine from that Monday night/Tuesday morning, and did it take until Friday the 28th for you to feel that your body clock had shifted to night routine?

D2: I'd say by Wednesday or Thursday I would have been comfortable in that night routine.

COL STREIT: You also say – at paragraph 18 you say your fatigue was light to moderate at times. How did you assess your level of fatigue?

D2: It's just a – at the time, it was a self-assessment, just based on my usual baseline of how I feel. I have small children at home, so a field environment, or an away-from-base environment, can often mean that I get better sleep, and so I felt like I was sleeping pretty well on that.

COL STREIT: What I want to do now is turn to the mission planning for the mission for 28 July 2023. So at paragraph 20 you say that D1, who was the co-pilot of Bushman 81, was the Mission Lead Planner. Is that correct?

D2: That's correct.

COL STREIT: Was he undergoing an assessment process that you were managing?

D2: Yes, so that – as part of the SO Captain upgrade process, we just look at a member's ability to plan and articulate that plan in conjunction with a customer Force, articulate that plan in a manner, and then see if they're at a suitable level to, if they were sent on their own, to be able to replicate that, and that's part of their upgrade. So that's what he was doing.

COL STREIT: CAPT Lyon was involved in the planning, wasn't he?

D2: He was.

COL STREIT: As well as a couple of junior pilots.

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D2: Yes. It was at least half of the aircrew, half of the pilot cohort that was up there.

COL STREIT: At the top of page 6 of your Defence statement you say:

> *D10 and D9 were in the planning area during the evening, working on Squadron-related governance. They were available to answer questions relating to the mission if needed.*

Correct?

D2: Correct.

COL STREIT: When you say "during the evening", is that the evening of 27 July?

D2: Correct.

COL STREIT: The full mission profile for 28 July; is that right?

D2: Correct.

COL STREIT: At paragraph 21 you say you left the planning area around – well, 30 minutes past midnight on 28 July, and you went to get ready for bed.

D2: Correct.

COL STREIT: What was your planned get up time in the morning on 28 July?

D2: I was aiming for 8.30, 9 o'clock – longer, if I could.

COL STREIT: Yes. When you left the planning area, D1 was still at a computer, touching up some orders, and that Dan was helping him to finish it up.

D2: Yes, we basically tried to usher everybody out at that point, and they had a couple of things they were going to touch up, and they basically remained behind just to fix some orders things.

COL STREIT: So you say at 21, second sentence:

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I recall being asleep around 01 to 0130 hours, which is around the normal time to go to sleep during a night routine.

Is that correct?

D2: Yes, that's correct.

COL STREIT: At that time, that time period, 01 to 0130 hours, before you went to sleep, CAPT Lyon was not yet back at the tent when you got into your stretcher; is that right?

D2: So I'm assessing that sometime between, yes, 0030 and 0100 I got into my stretcher and started to try and go to sleep, and at that point Dan was not back in the tent.

COL STREIT: And he was staying in the tent with you?

D2: Correct.

COL STREIT: You say at paragraph 22, on the morning of 28 July 2023 you woke up between 8 and 8.30; is that correct?

D2: That's correct.

COL STREIT: You say you felt well rested, but with light to moderate accumulative fatigue.

D2: Yes, correct.

COL STREIT: What do you mean by "accumulative fatigue"?

D2: Just that my baseline was not at a fully rested state.

COL STREIT: You say that you felt pretty good because, well, in effect, you have small children at home and you felt you were getting more sleep on the exercise.

D2: Yes, correct.

COL STREIT: Now, you say when you woke, at paragraph 23, you remember seeing only three or four members still in the tent, and that CAPT Lyon was one of the last people out of his bed in the morning – or from his stretcher. You recall seeing him in his stretcher, awake, on his phone, when you left the tent. Is that correct?

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D2: Yes, I believe so.

COL STREIT: You say he emerged from the tent when you were shaving, approximately 15 minutes later.

D2: Yes.

COL STREIT: Do you remember what time roughly that was? Would that have been around 8.45 or thereabouts?

D2: 8.45 to 9 am.

COL STREIT: You then describe at paragraph 24 and 25 a routine in relation to what you then did. You mounted duty at 1300 hours that day; is that correct?

D2: Yes, that's correct.

COL STREIT: So until that time, effectively, time was your own to manage as you needed.

D2: Yes, correct.

COL STREIT: And the mounting duty time was important because that then permitted for planning purposes a projection forward in time from the 1300 as to when you might hit that maximum duty availability time. Is that correct?

D2: Yes, that's correct. And that's always briefed in orders, and it's conveyed to the customer Force as well, that that's the max, that's the limit that the mission can go until.

COL STREIT: Para 25, second sentence, you say:

At 1300 I had a coffee and I walked over to –

I take it that wasn't a barista-made coffee.

D2: There was a coffee machine in the same tent where we signed for the aircraft, so it was convenient.

COL STREIT:

I walked over to sign for an aircraft we were going to be flying that day.

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Can you just explain for the Inquiry's assistance, signing for an aircraft, what does that mean?

D2: So there's a system called CAMM2 which tracks the serviceability status of the aircraft and all the parts that are attached to that particular airframe. And a Maintenance Manager, who is responsible for providing the online aircraft to the aircrew, will conduct their own checks, including the before-flight – well, their subordinates will conduct the before-flight checks and certain things will happen to make that aircraft serviceable. And then at a – so a pre-specified point, the Aircraft Captains can show up and go over the aircraft for that mission.

And depending on your seniority within the mission, you might look at four or five aircraft. So if I'm a flight lead and that position is essential for the mission, I will get a brief from the Maintenance Manager on all five, potentially six, aircraft that are involved in the mission, and their status, and any limitations associated with those aircraft. And then I have my own login details that I sign for, and accept that I'm satisfied that that aircraft is serviceable, and I'm going to now go and fly it, and that's now in my custody as the Aircraft Captain.

COL STREIT: Once you sign for an aircraft does that mean no further maintenance occurs on that aircraft because you have signed for it?

D2: Correct, without my knowledge. Sorry, that's probably not the best phrase for that. No maintenance will occur on the aircraft without the Aircraft Captain's knowledge. There are certain levels of maintenance that can be conducted on the aircraft with the Aircraft Captain's acceptance, but they are very limited in nature.

COL STREIT: Now, at paragraph 25 you reflect that the OC, D10, gave you a brief that CAPT Lyon was taking over as the Troop Commander for the exercise. Do you recall that conversation with D10?

D2: I recall.

COL STREIT: Was it explained to you that that was a consequence of D20 being in the process of leaving the exercise?

D2: It was.

COL STREIT: Did that then cause a need to restructure who was going to be on what aircraft for the mission on 28 July?

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D2: I don't recall that there was a requirement to restructure. I believe the conversation occurred, about crewing, the night before the mission.

COL STREIT: And had you participated in any of those conversations about the crewing of Bushmans 81 through to 84?

D2: I did.

COL STREIT: And just in relation to Bushman 83, what's your recollection of the discussions in relation to the crew that was ultimately selected for Bushman 83?

D2: So we were discussing a couple of changes to the formation crewing and D20, while we were at the board, queried if the crewing within Bushman 83 was appropriate to the – effectively, to the level of complexity of the mission. And, looking at the rest of the formation and who we had on our deployment with us, we were keen, on this relatively simply mission, to get the newer guys, who had just qualified, out on the mission.

And we had options within the formation of how to crew that, and we decided that Dan and Max, given that they were both quite adept and good hands and feet pilots, were, like, a good, sound crewing choice for that level of complexity for that mission.

COL STREIT: Now, just in relation to the morning of 28 July and as matters progressed during the day in terms of getting ready for the mission, did you have any concerns about any fatigue levels associated with any of the aircrew?

D2: Not that I noticed, no.

COL STREIT: Now, can I just take you back to your addendum statement, at paragraph 117. At paragraph 117 you say:

D6 got up early in the morning of 26 July to go to the bathroom.

Now, Monday's the 24th. The 25th is Tuesday. The 26th is Wednesday? Do you accept that?

D2: I accept that.

COL STREIT: So he was up in the morning of 26 July to go to the bathroom.

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And observed a bunch of junior aircrewmen from another tent drinking coffee and having breakfast. He told me he'd had a conversation with them about managing their sleep/rest routine. D6 then reported this matter to D10 and D20.

Correct?

D2: I'll just clarify, it was junior aircrew. So it probably included pilots and aircrewman, not just aircrewman.

COL STREIT: Sorry, did I say "aircrewman"? "Junior aircrew". Thank you for clarifying that. At paragraph 118 you say - - -

MS McMURDO: Do you know what time it was? You said it was in the morning, but the morning's a big timeframe.

D2: Sorry, ma'am, I don't. You'd have to ask D6.

MS McMURDO: Okay.

COL STREIT: And what's the concern about junior aircrew – pilots and aircrewmen being up in the morning, drinking coffee and having breakfast?

D2: It just relates to, from – your time of wake to the end of completion of a mission obviously affects fatigue later in that mission. And if a mission blows out and we go to the back-end of a mission window – which can happen – and we will use what – the tools available to us. If we know that people have been awake earlier, then we're going to end up risk-mitigating that at the end of the evening.

However, if we know – if we observe that people are being a bit more strict with their routine and they're waking up a bit later, then that allows us to, you know, manage and go a little bit longer. And in terms of waking up and drinking coffee early, that coffee or the caffeine is going to have less of an effect later on in that evening. And the more you drink coffee throughout the day, it has a lessening effect as well. So you need to be a bit strategic with caffeine intake as well.

COL STREIT: And, at least by Wednesday, the aircrew – pilots and aircrewmen were well and truly into the night routine workload, aren't they?

D2: Well, I'd say, yes, we were transitioning into that night routine. And that would be part of it, is expecting that you wake up a bit later.

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MS McMURDO: So, presumably, it was earlier in the morning rather than at 11 am, because D6 was concerned about it?

D2: I'd say, yes, it was – it would've been earlier in the morning.

MS McMURDO: Thank you.

COL STREIT: In para 120 of your addendum statement you say:

> *In terms of fatigue management on the exercise, there was a distinct difference between how the senior aircrew were managing their sleep cycle and how the junior aircrew were doing it.*

In relation to that aspect of your evidence, what was their – how did you arrive at that view? Was there something that - - -

D2: Well, at times when I would wake in the later part of the morning, within our tent I could hear a group of people outside and adjacent to our tent, which was the sort of breakfast routine area of the adjacent tent, which was the more junior aircrew.

AVM HARLAND: Do you have protocols in place when you're operating in tents, given that they're generally not very soundproof, to, I guess, have the communal areas where people would be talking away from the sleeping areas?

D2: In my experience on TALISMAN SABRE, no. And, no, we don't have protocols, sir. And, yes, it probably stems a little bit from a cultural – I'm not saying it's a bad cultural thing within Army, but Army is about the soldier, and that's a lot of the messaging, and everything is done for the soldier. And, as aircrew, we're a bit of an outlier, in terms of our capability, and how we exist, and how we need to manage our fatigue, and it's probably not very well understood.

And so there's probably an education piece, when people come into the unit, where we try to get, every couple of years, new people on board, and bring them into the mission, and understand the mission, to try and understand how we need to be managed. And I think wider Army just probably doesn't understand that as much.

AVM HARLAND: Yes. Just one question while I'm talking to you directly. The temperature in the tents: when you were there, were there temperature gauges or anything that – an indicator in the tents?

D2: Not that I - - -

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AVM HARLAND: Or, if not, how did the tents feel? Were they cold, warm, or comfortable?

D2: They were comfortable of an evening. And I believe we were opening the doors up during the day, to let air through, when it wasn't raining.

AVM HARLAND: So during the period that you were expected to sleep, would you say they were on the warm side, or on the cool side?

D2: I was comfortable.

AVM HARLAND: You were comfortable. Okay. Thank you.

COL STREIT: In relation to the crewing of CAPT Lyon and LT Nugent together, you say, at 125 of your addendum statement that LT Nugent had performed really well on the Special Operations Qualification Course; that you don't usually put a junior co-pilot in a flight leads aircraft, so D1 was placed in there as the co-pilot with you.

You go on to say a few other things, and then you say that:

> *Left LT Nugent to fly with CAPT Lyon in Bushman 83.*

At 126, over the page, you say:

> *Both CAPT Lyon and LT Nugent were good hands and feet pilots so we thought that was a pretty good pairing for the complexity of the task.*

That's correct?

D2: Yes, that's correct. And I'd probably expand on that to say that the experience level of both of the pilots was probably adequate for the complexity of the task as well.

MS McMURDO: Did you have any concerns at all about that pairing?

D2: No, ma'am.

MS McMURDO: Thank you.

COL STREIT: Now, I'll just return back to your Defence statement, if we can, please? Paragraph 27, you say the mission plan had changed since you

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departed the Planning Room the night before. The night before being the night of 27 July 2023; correct?

D2: Yes, correct.

COL STREIT:

> *Originally, the plan was to have only three aircraft to go to Lindeman Island for the extraction, and another aircraft would remain airborne in a holding pattern.*

Is that right?

D2: Correct.

COL STREIT: You say, at paragraph 27, you learned that On-duty Planner, D14, had altered the plan in conjunction with the Ground Force so that all four aircraft would go to Lindeman Island. Is that correct?

D2: Correct.

COL STREIT: You say that D14 updated D1 in relation to those changes; is that right?

D2: Yes, when we arrived at the start of our duty cycle, we got a brief on the changes and shown the mission product that had been updated for us while we were off duty.

COL STREIT: That then required, did it, an update briefing to the other aircrew participating in the missions. They would understand that there was a change?

D2: We hadn't delivered formation orders at that point.

COL STREIT: I see.

D2: The change was just amongst ourselves. They would be unaware of it and it would largely be – it wouldn't affect anything for them because they hadn't received orders yet.

COL STREIT: Now, paragraph 28, your role during the mission was the aircraft formation flight lead. You say:

> *The formation flight lead is the senior pilot at the front of the formation that executes the mission as per the plan. When I –*

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and you refer to "the formation", you mean the four MRH-90 aircraft and crew that would execute the mission. That's correct?

D2: That's correct.

COL STREIT: At 29 you say your co-pilot, D1, was in the process of upgrading to Special Operations Aircraft Captain. And that was the process you were assessing, was it?

D2: Yes, myself, D6 and D14, I believe. Yes, D14.

COL STREIT: Now, at paragraph 30 onwards you describe, essentially, mission planning. D1 gave orders to the assembled aircrew, I take it?

D2: Correct.

COL STREIT: Now, you say at paragraph 30 of your Defence statement, you remember discussing that "the cloud base was around 1800 to 2000 feet, with the potential to reduce to 1000 to 1200 feet in a temp", by which you mean a forecast 60-minute duration of reduced weather conditions further to the baselined forecast weather. We'll just pause there. Was that an important discussion about the cloud base?

D2: Yes. Well, we assess a go/no go criteria for the mission based on visibility and cloud base.

COL STREIT: Yes.

D2: So that's always briefed in every Aviation mission orders, the weather that we're expecting for the mission and any potential changes during the mission window.

COL STREIT: Paragraph 31 you set out that:

> *Visibility during the mission window was forecast to be at least 10 kilometres with south-easterly wind of 15 to 20 knots.*

And so was the weather something that was kept a close eye on leading up to departure from Proserpine?

D2: I was keeping a close eye on the weather, yes. Because the weather brief, as it was given and as I recall, didn't quite align and the terminal area forecast that I was using at Hamilton Island on my AvPlan app didn't quite align with what I was seeing outside in the real world. And we had passing

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showers coming through the area and it was sort of intermittent small showers, and so I was keeping an eye on it.

The forecast was planned to improve throughout the evening and my observation was that those showers did eventually dissipate, but those showers had the potential to interfere with the mission, so I was keeping an eye on it.

COL STREIT: Now, at paragraph 32 - - -

MS McMURDO: I'd just say, look, that's the thing about showers, isn't it, that they are very intermittent, scattered? So you can be flying in formation, one person might have okay visibility, one aircraft might have okay visibility, another aircraft could be in a shower and have much lesser visibility.

D2: If we pass through a shower and, you know, potentially, as we're exiting or entering we might have different visibility but also the roles within the formation and the immediate tasks of each pilot within the formation – in my aircraft, we're coupled-up, using full AFCS function. I'm staring directly out the front and constantly assessing weather conditions and how the mission is tracking, and probably have a lot of situational awareness. But the aircraft behind me are looking at the other aircraft and flying formation.

And someone who's actually flying will be quite task-focused and, depending on their level of experience and seniority, might not necessarily be as aware of the environment. And also, the direction they're looking is, you know, across the formation, so what they're looking at might not necessarily be what I'm looking at.

MS McMURDO: That's right. Yes, I understand that.

D2: Yes.

MS McMURDO: Yes, thank you.

AVM HARLAND: You've talked about weather conditions. Can you describe the considerations you went through for illumination and how those weather conditions might impact on that in terms of forecasting looking forward?

D2: Yes. I believe the moon illumination – the moon was projected to be up during the mission – and it was, from what I recall – to be about 55 per cent – 55 to 60 per cent illume, which it's a fair bit. That's more

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than enough, and that's quite a good illumination level. However, I was considering that the cloud base, depending on how overcast or scattered it was, potentially will affect how much of that illumination gets through to the formation.

AVM HARLAND: Yes. So did you hold concerns about the illumination you might encounter on the mission?

D2: No, I didn't, sir.

AVM HARLAND: Thank you.

MS McMURDO: But the weather conditions were very unstable that evening?

D2: In terms of the passing showers, ma'am, yes.

MS McMURDO: Yes.

COL STREIT: There was a discussion, wasn't there – I'm referring to para 32 of your Defence statement – in relation to whether or not the doors on the aircraft should be open or closed during the mission. Is that right?

D2: Correct.

COL STREIT: And this occurred – questions were asked after D1 finished the brief; that is, the brief to the aircrew about the mission.

D2: The orders brief, yes.

COL STREIT: Orders brief. Your recollection, the main question that stood out was when WO2 Laycock asked about the cabin doors with words to the effect of, "What are we doing with the doors?", you say you remember saying, "Open", which is in accordance with the Standard Operating Procedure, that if the transit time is less than 20 minutes, the doors of the aircraft should be configured for landing, which means having the doors open. You say WO2 Laycock expressed that the doors should be closed due to the windchill.

And then there's a short discussion between you and he, which you've recorded in your statement about that matter, where you say he said, "No doors closed". You say, "Is it really that cold?" He says, "Yes, it's always cold at night". What was the ultimate outcome of that discussion with the crew?

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D2: That doors would be closed from departure.

COL STREIT: And that would be uniform across the four ships?

D2: Yes. But we're verging into territory that's probably not appropriate for this hearing.

COL STREIT: All right.

D2: But I will say that we had experienced on the SOQC, and in previous exercises down in Victoria, that the aircrewman, when we were flying around with doors open, would experience significant cold weather effects given the windchill. And we, in the past, had had to amend our procedures to account for that, which meant keeping the doors closed more often than we normally would. And that's a bit more specific to MRH and their seating position. And a fix to that would be cold weather gear, and that I believe Phil was using post-activity reports where we need to amend procedures, to bolster an argument to get better cold weather gear for the aircrewman that are operating MRH.

So in this instance I understand what he's saying. My logic was, we're in North Queensland, so maybe – I just assumed, in my initial response, that it's probably not as cold. But I'm not an aircrewman and I don't sit in that door and I don't experience that, and so I based – I went with his judgment as he's the senior aircrewman in the Regiment, and I respect that.

MS McMURDO: So you don't recall it being a cold evening. It was wintertime in Proserpine, but - - -

D2: I don't recall it being overly cold. But windchill can have quite an effect on people.

MS McMURDO: And was there any discussion about the rain as well as the cold?

D2: In the walkthrough rehearsal, we did discuss potential rain effects and localised cloud effects and how we might alter the plan.

MS McMURDO: But I mean, in the conversation about the doors being open or shut, was there any discussion about rain?

D2: No, ma'am.

MS McMURDO: No. Thank you.

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COL STREIT: Now, just swapping back to your addendum statement, you say at paragraph 127 that Bushman 81 and 82 were loaded with flares which were planned to be armed during phases of the mission, and that it was briefed in orders and in the Rehearsal of Concept drill that afternoon that you would fly seven rotor diameters apart from each other when the flares were armed. Is that correct?

D2: That's correct.

COL STREIT: That's consistent with the requirements in STANMAN 4, that flare that was being used at the time?

D2: Correct.

COL STREIT: Does that mean that Bushman 81 and 82 would be seven rotor diameters apart, but 83 and 84 didn't need to be seven rotor diameters apart?

D2: It means that any aircraft that's trailing, immediately trailing, or formating off an aircraft that's loaded and armed with flares, needs to respect the seven-rotor diameter. 84, in that instance, was probably the only aircraft that could fly closer to 83 because 83 didn't have any flares, and 83 would be respecting that distance off 2, so compensating for both.

COL STREIT: You say at paragraph 129 there's a tendency for formation to pinch in darker conditions if the weather deteriorates, so they can formate off each other more easily. When you say "pinch", does that mean that the aircraft start flying closer to each other?

D2: Reduce the spacing, yes, sir.

MS McMURDO: "Pinch in" is the term, isn't it?

D2: Pinch in/reduce, yes.

MS McMURDO: Pinch in, yes.

COL STREIT: Pinch in. Pinch in, in darker conditions, so at night?

D2: At night, sir.

COL STREIT: Or if the weather deteriorates?

D2: Yes, if the visibility deteriorates.

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COL STREIT: So weather can deteriorate during the day as well?

D2: Correct.

COL STREIT: So your observation is that there's a tendency for a formation to pinch during the day if the weather deteriorates, so they can properly formate off each other?

D2: Yes, it gets easier. If you're quite a distance apart but there's rain within the formation, it's easier to judge the attitude of the aircraft you're formating off by getting closer.

COL STREIT: So if you're flying at night where – obviously you're at night and if the weather deteriorates, then it's even more likely that the formation would pinch, would it?

D2: Yes, if the weather deteriorates or if the illumination level is lower, but then it's a scale. But if the illumination level is lower, people will hunt for the cues that they need off the preceding aircraft, and so it's not uncommon for people to either try and get closer to that aircraft if they're fighting for that attitude information or just start drifting further away, just to separate themselves from the aircraft.

COL STREIT: Is it a fairly dynamic process in this sense, in that as you're flying in formation, depending on where you are in a formation – if you're not the flight lead and you're not the last aircraft – if it is the case that you've got a bit too close to the aircraft that you're formating off, you just simply make adjustments to slow down.

D2: Yes, correct.

COL STREIT: If you get too far away from the aircraft, you make adjustments to speed up. So it's a dynamic process.

D2: Yes, there's always an error developing. And as experience gets better for someone flying formation, they'll detect the error faster and make the adjustment faster, and probably make a smaller, more appropriate adjustment. Inexperienced pilots will tend to come in and out a little bit more than more experienced formation pilots. So their formation is sort of constantly shifting in and out away from each other. And even just air effects – air moving up and down – can change that as well.

COL STREIT: Yes. Can I return now back to your Defence statement, please?

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AVM HARLAND: Just before we finish off on that, you have a requirement under the STANMAN to maintain seven rotor diameters separation when the flares are armed on the aircraft. So as the formation lead, if, due to weather or illumination conditions, or any other conditions, the formation does pinch up, what is your expectation from the wingman?

D2: So I would expect that if they are struggling in conditions to maintain that rotor diameter, that someone in the formation would just speak up and say, "Hey, we need to pinch the formation", and in that case it's just a training outcome for the exercise. We would just disarm the flares and then bring the formation closer together to assist with visibility.

AVM HARLAND: Understood. Is it fair to assess that if the formation were to maintain that seven rotor diameters separation as required by the STANMAN, that it wouldn't have been able to operate itself around the weather conditions in the hold?

D2: The formation would have been more spread out and would take up more of a footprint in that hold, and it would probably be more difficult to consistently hold for a long period of time, I think, yes.

AVM HARLAND: So I guess there's two parts to that question. One is that the formation could physically operate itself in really good conditions in the hold because at that seven rotor diameters, the formation is bigger but it would still be a viable hold. Is that a correct statement?

D2: Yes, it would, sir.

AVM HARLAND: In the conditions that you encountered, the weather conditions that you encountered, if the formation maintained seven rotor diameters separation, would they have been able to operate that hold in those weather conditions, or do you think they would have lost contact?

D2: Well, at the time of the hold, we weren't in any rain. There was a rain shower off to the west of us that we were clear of. I would assume that we could maintain that hold, but then I'm not in the back of the formation trying to fly form at that time. So my experience is different to the guys in the formation. So if they were struggling, then they have the option to say so and we would adjust the spacing.

AVM HARLAND: Understood. And that didn't happen?

D2: Well, we didn't complete a full hold at that point so may not have even had time to make that assessment.

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AVM HARLAND: Were you aware of whether the formation did in fact pinch in or not at the time?

D2: At the time, no.

AVM HARLAND: And afterwards?

D2: That was the conversation that I discussed yesterday. When we got back to the airfield, I had just flown until 5 am and I had no idea what had happened behind me. My initial questions was to people that I thought had the capacity to – that that was, "What happened?", and "What was the spacing? What did the aircraft do?" It was indicated to me that the aircraft were closer than the seven rotors.

AVM HARLAND: Thank you.

MS McMURDO: But you don't recall any direction to change from the seven-rotor spacing to a closer flight pattern?

D2: It didn't happen, ma'am, no.

MS McMURDO: Thank you.

COL STREIT: Can I just take you back to your Defence statement, please. I just want to deal with briefly matters that occurred prior to departure on the mission. The first is, if you look at paragraph 46 of your statement. So you were sitting on the runway from 1955 hours until about 2115; is that correct?

D2: That's correct.

COL STREIT: Then a hot refuel plan was implemented.

D2: Correct.

COL STREIT: Now, what happened next, if I understand paragraph 46 correctly, is that there was an issue with the RADALT with the aircraft you were in. Is that right?

D2: That's correct.

COL STREIT: Just explain what the RADALT is, please?

D2: So the radar altimeter uses a radio frequency and measures the time that it takes for that frequency to be returned, so it bounces off objects.

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Particularly useful overwater where it functions well in a smoother surface environment and that gives us our height above the terrain in feet. And it's quite accurate and it's mandatory for overwater – or it's mandatory for night flight on ANVIS.

COL STREIT: What were you going to set the RADALT to be for the mission you were about to undertake?

D2: So for that mission we had authorised "not below 200 feet", is my recollection. And we set – the standard is 10 per cent below that height, which in this case is 180 feet.

COL STREIT: Do you recall that being briefed in orders; that is, "not below 200-feet; RADALT to be 180 feet"?

D2: We don't brief the RADALT setting because that's assumed that an Aircraft Captain will set that. But we briefed the "not below" height.

COL STREIT: So the briefing of the "not below" height then tells the Aircraft Captain, based on their training, that they need to set the RADALT at what?

D2: At 10 per cent below "not below" height.

COL STREIT: And that would be 180 feet.

D2: 180 feet, in this instance.

AVM HARLAND: Is that documented in SIs or SFIs?

D2: That's a STANMAN requirement, I believe, sir.

AVM HARLAND: STANMAN. Okay, thank you.

MS McMURDO: And what happens if it goes below 180 feet?

D2: If the aircraft goes below 180 feet?

MS McMURDO: Yes.

D2: We get, effectively, a decision height. The aircraft will say, "Decision height", and it's an audible warning that both pilots can hear, and it's effectively an alert to say you're below the safety height that you've set for yourself. So what - - -

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MS McMURDO: And would that normally then make a pilot pull up?

D2: They would respond, yes, ma'am.

COL STREIT: I was just going to say, if you could, just for non-aviators, describe the reasoning behind that when you're operating in the environment you operate in?

D2: Yes, I mean, you can lose situational awareness at night-time on your height above obstacles and terrain and so that is an aircraft system that will give you a cue before you may pick up that that's happening, and then give you enough time to respond, I guess, appropriately.

COL STREIT: When you departed on mission on the 28th, do you recall setting or the RADALT being set in your ship at 180 feet?

D2: So because my RADALT malfunctioned and I had to switch aircraft, I believe for both aircraft I set it to 180 feet. But because of the change to the aircraft – I can't recall if I did it to both aircraft, but I believe, through my processes, that I would have, yes.

COL STREIT: And do you recall in the mission itself whether you altered the RADALT at any point in time?

D2: That decision height alert? No.

AVM HARLAND: Do you normally – sorry, COL Streit.

Do you normally, as you're going into a tactical phase of a mission, or even when you start taxi take-off checks, actually go through and check that RADALT setting, the decision height setting?

D2: It is – yes, it is in a procedure, sir, but I can't remember if it's a checklist action or – yes, it was in a procedure though, but pre-taxi procedure, I believe, sir.

AVM HARLAND: Pre-taxi. So you would, as a crew, check that that decision height had been set appropriately?

D2: Yes. And we – because it can be set differently on either side for either pilot, that you can – and so we would go through what that decision height is set to and verbalise that to each other.

AVM HARLAND: And would the back-end aircrewman, would they hear that as well? They would - - -

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D2: They would hear that procedure.

AVM HARLAND: That would be on intercom. Okay, thank you.

COL STREIT: The error in the RADALT in the aircraft that you were first in necessitated your crew and you to change to another aircraft. That's correct?

D2: It did.

COL STREIT: You then went through a process of completing a hot refuel?

D2: Of the second aircraft.

COL STREIT: The second aircraft. And what I want to do now is turn to paragraph 51 onwards in your Defence statement. Now, your Defence statement sets out in some detail your recollection of events up until the point of what you later learned was the crash of Bushman 83. What I would like you to do is, having regard to those parts of your statement, if you can, in broad compass, summarise your recollection of events from the point of departure of your aircraft on mission and up until the point of paragraph 65. Do you understand what I'm asking of you?

D2: I do, sir, yes. I'll try and - - -

COL STREIT: So it's just in broad summary.

D2: Yes, I'll try and be succinct.

COL STREIT: And if you could just begin by just articulating the mission go and, essentially, the flight plan, as you recall it, up to, as I just mentioned, paragraph 65 of your statement?

D2: So the launch criteria was either timings or on notification of a particular status within the Ground Forces Mission Plan. We received that. We were ready to launch because we completed our hot refuel procedure. We launched the formation. That typically takes a little bit of time, for the formation to group up and catch up to each other. And then we proceeded on the planned flight route, which the plan was to establish overwater – which was to the western side of a peninsula that was to the east of us – establish overwater.

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And then, on that peninsula, we'd identified a saddle in that peninsula that was significantly lower than the surrounding terrain, and we thought that we'd be able to track a formation through that saddle and get us into a good position to then come into the island with the prevailing winds that were – you know, 15 to 20 knots is a bit of wind.

When we were approaching that saddle – sorry, so prior to launching, I'd been monitoring the rain showers that were still coming through the area, and I could see on a weather radar overlay on my iPad that there was a shower at Long Island or roughly in vicinity between Hamilton Island and Long Island to the north – just a small shower. And then a shower that was basically directly over Lindeman Island, which was the objective area.

So I was sort of monitoring that and assessing that that was probably going to affect our ability to implement the extraction in a timely fashion, but I couldn't actually directly see that at that point. I had to wait until I got to the eastern side of the peninsula. When we got to the saddle – sorry, is this too much information?

COL STREIT: No, that's - - -

D2: No, it's okay. When we got to the saddle, I think, looking through that saddle, I was probably looking at the shower that was around the Long Island/Hamilton Island area, and I could see through the saddle, but I couldn't gauge the distance between that shower and the landmass on the eastern side. And I wasn't comfortable taking the formation through there, and then not really knowing what I was going to encounter on the other side.

And I determined that I couldn't turn the formation around in that saddle if we got to the point where we couldn't continue, so the safer option was to just turn right. And we'd briefed it as a rough contingency that we'd just go – we're not requiring to execute the mission in a timely manner; that we could just track around to the south of the peninsula to then get into our area where we then run into the objective area.

So I elected to do that. Turned the formation right, went south around the peninsula, and at that point, the cloud base was higher – the standard cloud base was higher than the mountain ranges around us. And I know this because when I looked at the mountain ranges there was some clouds sitting on top of that – the mountain ranges with sort of orographic lifting effect because of the south-easterly wind, and so the cloud base was a bit higher at that point. We could see all the way down to the lights of Mackay, so the visibility was quite good. And then – but until we rounded the peninsula, I

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wasn't sure what I would encounter; I was just going off the weather radar overlay.

When we rounded the corner, there was obviously two showers that were indicated on the overlay, and then there was an almost veil of really light rain that was connecting the two showers, and it was that whole – that sort of element of rain was moving in a westerly fashion. So I had a couple of options: I could turn the formation around, or I could wait on the western side, but that rain may move towards us and may intensify and then sort of I'd get stuck there and end up having to go anyway.

And when I was assessing that veil of rain, I could see Hamilton Island, I could see Pentecost Island, and the visibility was quite good on the other side. And so my assessment was it would actually be better to be on the other side of that veil, and so I elected to take the formation through that and then we'd hold on the other side, waiting for the rain on Lindeman Island to clear.

COL STREIT: I'll just stop you there. So these alterations to the briefed flight plan necessitated by the weather conditions, are they – and you're the flight lead so you're encountering these things first – those changes you made to what was occurring, they're briefed, by you, over the intercom system with the other aircraft to explain what you're doing?

D2: So I don't recall if I briefed the alternate route around the bottom of the peninsula. It may have been the case; I just don't recall if I actually said anything. But every Aircraft Captain is looking at the same thing that I'm looking at, give or take, and monitoring a co-pilot, but – so they would've been looking at something else and probably predicting that, "Hey, we're not going through there". So they would anticipate that, and we'd already pre-briefed it, that there was a possibility we would go around the peninsula.

COL STREIT: And they could jump on the intercom anyway and ask you a question like, "Where are we going?", and "What are you doing?", if you had been doing - - -

D2: And the Air Mission Commander reserves the right to overrule any decision I make as well, so if he wasn't happy he could have – in the absence of not speaking up as well, that I'm assuming I've made a good decision.

COL STREIT: So you came around the peninsula, and when you came around the peninsula, can you just describe again, in terms of visibility, what you could see?

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D2: So the visibility at Lindeman Island itself, where the shower was located, you could not see through that shower. That was about the size of Lindeman Island. You could see past either side of it, and you could see through – and this is – we're just on the eastern side of the peninsula, so you can see through to Pentecost Island and Hamilton Island, and that's the annexes in Annex C that I included, just to sort of indicate that.

But there was a – I don't know, it was almost virga, which is like rain that's so light that it never really reaches the ground. It comes out of the cloud, but then doesn't reach – it was almost so light that – but it was there, and it was reducing visual cues somewhat, but I could still see a fair way through it.

COL STREIT: As a result of what you were observing and, you know, missions have a level of – they can be dynamic and you need to be flexible. That's correct?

D2: Correct.

COL STREIT: You made the decision, did you, that moving to the initial point as per the plan, that instead of moving to the initial point and taking a right turn, you would move to the initial point and take a left turn. Is that correct?

D2: Yes, my assessment that a right turn, just given the angle that we were flying, might be more difficult for the formation to achieve, but also that that right-hand holding pattern might put us back in that rain shower that we'd just passed through. The virga or veil that we'd just passed through. Whereas a left turn, if we continued on that heading and then conducted a left turn, that would keep us away from that, and that would increase the conditions.

COL STREIT: The concept was for the formation to move to an initial point and then engage in, effectively – my words – sort of racetrack flying until the formation received the signal to go to Lindeman Island to effect the extraction.

D2: Yes, that's correct. We were in the process of receiving the confirmation that they would be ready shortly, but my assessment, looking at Lindeman Island, that Lindeman Island would not be ready for us for a little bit of time.

COL STREIT: Was the decision then to simply hold at the initial point, doing a racetrack circuit, until visibility cleared up at Lindeman Island? Was that your thought process?

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D2: Yes, I needed not just the rain shower to clear Lindeman Island, but I needed the rain shower to clear Lindeman Island enough that if, during the approach, if an aircraft was required to conduct an individual go-around or a formation, if we had misidentified the landing area for any number of reasons, that we needed enough space to conduct a formation go-around, which takes up a little bit of air space. And there was high terrain to the north-east of the LZ, so a left-hand turn wasn't viable. So I needed that shower to clear further to the west, or enough to the west that we could conduct that go-around as well, which is a contingency there.

COL STREIT: So entering the left-hand turn, can you just explain the racetrack? So is it a series of turns a bit like a racetrack – a turn and then a straight bit, and then a turn and then a straight bit – or is it more circular?

D2: No, it's a turn and a straight bit for upwards of a minute, and then a turn and a straight bit.

COL STREIT: So the whole circuit itself, if you were to measure it in terms of a distance, it would be measured in kilometres, wouldn't it?

D2: Nautical miles.

COL STREIT: Nautical miles. It was in the process of engaging in that left-hand turn – I'm looking at paragraph 66 onwards, and I'll read out this to you and just ask you to confirm:

> *It was during our rollout, or not long after, I heard Bushman 84 cease communications with the JTAC and say over the inter-flight frequency words to the effect of, "83, pull up. Pull up. Pull up. Pull up".*

Para 67:

> *I was at the front of the formation, so I did not see anything. I was looking straight at Lindeman Island, and I could see the rain had moved off Lindeman Island. We kept tracking forward towards Lindeman Island, in the hold pattern.*

Then at 68:

> *Then, within seconds, I heard words to the effect of, "Knock it off. Knock it off. Knock it off", and "Fallen angel. Fallen angel. Fallen angel. 83 is in the water". I recall this happened at approximately 2330 to 2335. I did not see anything as we were the*

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lead aircraft and it happened behind us, but I do remember thinking that they were in the water; it would be a complicated recovery.

Is that correct?

D2: Yes, 2230 to 2235. That's correct.

COL STREIT: What happened next – and you describe this in your statement – is that Bushman 83 – sorry, Bushman 84 detached from the sortie to try to gain eyes on Bushman 83 in the water. Correct?

D2: Yes, that's the standard procedure.

COL STREIT: And you, in Bushman 81, and Bushman 82 were given a direction by Bushman 84 to move away to ultimately Lindeman Island, and land and wait. Is that correct?

D2: That's correct.

COL STREIT: The idea was, was it, that Bushman 84 would conduct the immediate search and coordinate the immediate search, and then Bushman 84, when it returned to – needed to return to Proserpine for potential refuelling, that's when you, in Bushman 81, or Bushman 82, would take over that search responsibility.

D2: Correct.

COL STREIT: There was an unfortunate compounding effect which you've identified at paragraph 72, where there was some communication which was wrong. There was some communication that personnel from Bushman 83 had been recovered; correct?

D2: That's correct.

COL STREIT: But that was then later corrected a short time later as being in error.

D2: Correct.

COL STREIT: You were out until – as part of the search for Bushman 83, returning to Proserpine about 5 in the morning; is that right?

D2: Correct.

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COL STREIT: And that's at paragraph 77 of your Defence statement. There had, had there, been a need for two-star approval at the Major General level to extend flying time beyond that which was ordinarily permitted?

D2: Yes. The 14-hour duty day cannot be extended within SI requirements at the unit level, and the only person that can alter the SI Avn requirements is the MAO, which is the Aviation Commander.

COL STREIT: I just want to ask you, at para 74, when Bushman 84 eventually told you to launch from Lindeman Island and fly back to the crash site, once you were at the crash site, you observed there were two Military vessels, a civilian coastguard vessel and what appeared to be a tugboat, conducting white light searches of the debris field. Is that correct?

D2: Yes, that was my sort of - - -

COL STREIT: Do you recall approximately what time that was? If you don't, that's okay. I just thought I would ask you.

D2: I don't, I'm sorry.

COL STREIT: What I'd like to do now is just return to – briefly – your addendum statement. And I note the time, it's nearly 12 o'clock. I don't have far to go to finish the evidence-in-chief, but I note the witness has been there for some time. Are you happy to continue?

D2: Happy to continue.

COL STREIT: All right.

MS McMURDO: He might be putting it a bit high, perhaps.

D2: I'm okay.

COL STREIT: So your statement, from pages 18 through to 22, deals with matters concerning the exercise, and provides some additional details for the Inquiry's consideration. What I want to do is just deal with post-incident issues, if I may, and then some other matters that you raised. So you left, you arrived back or finished the search and landed at about 0500, which would've been on 29 July. Is that correct?

D2: Correct.

COL STREIT: Did you go to bed or get some sleep at any point in time?

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D2: No.

COL STREIT: You then left Proserpine in the afternoon of that day, the 29th; is that correct?

D2: That's correct.

COL STREIT: And it was when you were on the plane back home, that's when you slept, intermittently?

D2: Correct.

COL STREIT: You've given some evidence about obviously having some discussions with individuals upon immediately – or shortly after landing in the morning on 29 July 2023. Do you recall, on 29 July 2023, whether you observed Queensland Police Service Officers being present at the base at Proserpine?

D2: I observed them at Proserpine, yes.

COL STREIT: Did you speak to the police?

D2: I did not.

MS McMURDO: Do you remember being told not to speak to them?

D2: No, ma'am. We just work on a chain of command. So I assume, working off the assumption that, if we we're going to speak to them, that our chain of command would inform us a time and a place.

MS McMURDO: Thank you.

COL STREIT: In terms of other post-incident matters, you attended the funerals of all four aircrew; correct?

D2: Correct.

COL STREIT: And your last full day at the Regiment was approximately when?

D2: It was 6 October 2023.

COL STREIT: In terms of your involvement in other investigations, you say, at paragraph 150, you gave the DFSB ASIT team an overview brief of the incident on 30 or 31 July; is that right?

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D2: Yes, that's correct. That was the team that came to the Regiment to conduct interviews.

COL STREIT: So that was conducted at 6 Aviation Regiment?

D2: Correct.

COL STREIT: Do you remember who that was?

D2: Yes, actually, because it was the same people that conducted the investigation into the Jervis Bay ditching. We felt like old friends at that point. It was the – I'm not sure, can I name individuals here or - - -

COL STREIT: From the DFSB, yes.

D2: SQNLDR Sam Gladwin was there. And then we had a – I don't know if I can – we had a member, a Reservist member, from 6 Aviation Regiment assisting the team. And I'm happy to – I'll just check the list, actually. There was about six or seven people and I was introduced to them, but I don't necessarily recall all their names.

COL STREIT: That's okay.

D2: I'm not sure if I can name the member that was assisting.

COL STREIT: Well, maybe we can ask you after your evidence, and we can ascertain whether or not that person has a pseudonym.

Can I ask you some questions – you've set out some matters concerning leadership at paragraphs 153 to 157 of your statement. You say at 153 that you've – in terms of D19, you say:

> *I can hand-on-heart say that D19, during 2022, and in particular 2023, delivered the greatest display of leadership –*

you've –

> *had the privilege of witnessing.*

And that:

> *D19 possessed a very high level of empathy, emotional intelligence, and rare ability to genuinely listen.*

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You say some other things concerning – positively – D19 at paragraph 154.

In terms of D10, you say, at 155:

> *D10, in a similar manner, was actively engaged with the welfare of his subordinates. It was obvious he had a people-first approach and would –*

from your observations –

> *place the needs of the individuals above the needs of the Squadron when it was within his power to do so.*

At 156 you say:

> *He was also actively trying to better risk manage the culture of the Squadron; introduced active participation with regards to risk profiles and Aviation order groups and had –*

you –

> *as the Flight Lead, quizzing aircrew on the controls relevant to the day's activity at the end of orders.*

You say at 157:

> *These leaders generated a culture of humility and mutual respect. Junior members were engaged in decision-making within the Regiment and their ideas were heard. In fact, it was some junior members' ideas that were the genesis for change.*

Having regard to those observations of those members that you've identified, you conclude that aspect of your evidence saying:

> *This was not a Regiment that had its head in the sand; rather, a group of honest people sharing a complex environment that was actively being managed.*

Correct?

D2: Correct.

COL STREIT: And that needs to be considered in the context, does it, of the challenges that the unit was facing, which you've given evidence about,

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in terms of maintaining a training continuum as well as managing the operational capability?

D2: Yes, correct.

COL STREIT: And trying to achieve what's asked of it with not the number of people, perhaps, it would want?

D2: I can't speak to whether the manning was appropriate, but I'd say that they were working, within their sphere of influence, to try and have better outcomes for everybody in the Regiment.

COL STREIT: I just want to conclude your evidence with one aspect – again, building on your experience from your time as a civilian pilot – in relation to recovery from unusual attitude.

D2: Yes?

COL STREIT: So you deal with this at paragraph 158 and 159 onwards of your statement. So you say that, when you were at 6 Avn Regiment, you –

> *tried to do most of the instrument rating assessments in the simulator, and this included unusual attitude assessments where the pilot was distracted by something else.*

You'd put the aircraft in an unusual attitude, let them detect, takeover and conduct the recovery drill.

At 159 you say this:

> *There was no requirement to do an unusual attitude serial during the NVD assessments.*

Was it ever explained to you the reasoning why there was no requirement?

D2: No. It was just a table that sets out the required – serials required for each different assessment within STANMAN.

COL STREIT: Did that strike you as – I appreciate you're applying the letter of the policy, but did it otherwise strike you as odd that there wasn't actually a requirement to do an unusual attitude serial recovery during the night-vision device assessments?

D2: At the time, no.

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COL STREIT: Sorry?

D2: At the time, no.

COL STREIT: At the time, no. But now?

D2: Well, with the benefit of hindsight - - -

COL STREIT: Yes.

D2: - - - and my experiences in the civil world, I would say it's appropriate.

AVM HARLAND: How often would that UA recovery, which was the instrument flying one, be done each year?

D2: Sir, an annual instrument rating assessment and then, as I described in 159, during the NVD assessment we still do the AHPA drill but not necessarily under the guise of the unusual attitude recovery. It was to initiate an end of that 9C procedure. So, the same drill to get into the procedure but, in this case, with the idea that you're climbing to fly safe. So two times per year, per pilot.

AVM HARLAND: Yes, the AHPA, what was that?

D2: Attitude, heading, power, airspeed. It's just the pneumonic for that particular recovery drill that's to be conducted in that order. So - - -

AVM HARLAND: So suffice to say, in the simulator, a pilot at 6 Avn would have two opportunities a year; one to practise a UA drill?

D2: Mm.

AVM HARLAND: And one to, effectively, practise an inadvertent IMC drill, which was similar to a UA drill?

D2: Yes. The inadvertent IMC drill, if it was part of an NVD assessment, would be to conduct it in the aircraft. It would need to be conducted in the MC conditions.

AVM HARLAND: The safety pilot?

D2: Correct.

AVM HARLAND: And there is no requirement for unusual attitude recovery training to be conducted when wearing ANVIS or similar?

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D2: Not as it was specified in the MRH STANMAN.

AVM HARLAND: Okay, thank you.

COL STREIT: Now, I appreciate this an observation in hindsight based on your experience and undertaking civilian helicopter training, but you describe at 160 that during your –

> *civilian helicopter training, unusual attitudes and some limited instrument flying were included during the night proficiency checks. And that after a brief instrument flight exercise, the aircraft is established straight and level and then the safety pilot instructs the flying pilot –*

who is you –

> *to close your eyes.*

You say:

> *The brain perceives that the aircraft is continuing straight and level, but at some point the aircraft will develop an unusual but safe and recoverable attitude. The safety pilot then instructs the flying pilot to open their eyes and the pilot is then expected to recognise the error and recover the aircraft back to straight and level flight.*

So I take it that when you did this training, this was the first you had experienced that type of training?

D2: Not the first time. There was similar training in our time on fixed-wing aircraft in the Air Force where – well, at BFTS, Basic Flight Training School. Because we were conducting a lot of aerobatics at the time, that type of drill was quite useful. But in my time in the Army, our unusual attitude training didn't necessarily go to the lengths of closing eyes and getting it into an attitude.

And quite often the instructor would actually take over, put it into an unusual attitude and then hand over to the trainee. So the trainee knows that it's not going to look right and when they open their eyes, they're just looking for something that doesn't look right. But when you're the one flying and your eyes are closed and you think you're doing a good job, the aircraft is actually departing normal flight, you're just not really aware of it. You might hear it if you start to speed up.

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And so when you open your eyes, it's a better drill for that, "I'm not where I thought I am and now I'm going to recover". But you can't quite replicate the shock of, "Something's not right and I'm trying to work it out". But it's a better drill in my opinion.

COL STREIT: But your body and your brain is telling you you're flying straight and level and everything is good.

D2: Yes.

COL STREIT: And you open your eyes and then the reality is that you're in an unusual attitude, but your body hadn't detected it.

D2: Yes, correct.

AVM HARLAND: Just to clear that up, was it the case that if you were doing unusual attitude recovery training either in your IRT or inadvertent instrument meteorological condition training in the aircraft, you wouldn't close your eyes if you were under test?

D2: Occasionally close eyes in the simulator, but the procedure would be that the instructor would put the unusual attitude in and then hand over and just recover. Some instructors did it that way.

AVM HARLAND: So you could watch the unusual attitude developing and then recover from it?

D2: Watch the drill, yes. Rather than a trainee-led unusual attitude, sir. And in more modern aircraft they have much better automatic flight control systems. Unusual attitudes are actually considered if the AFCS does something that you're not anticipating as well, and that the aircraft – just occasionally, your knowledge of the system might not be as good as what – or not predict what the aircraft is about to do, and you put an input in and the aircraft departs the flight profile you expected. That is considered an unusual attitude as well. So that, again, would be replicated in the instrument flight test as well.

AVM HARLAND: Were you aware of that case happening on MRH-90, where the AFCS mode awareness resulted in the aircraft going into an unusual attitude?

D2: I would say that that's common probably in all modern helicopters that have a modern AFCS. But unusual attitudes in that instance – it's not because the AFCS is malfunctioning, it's because of the pilot's

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understanding of it is probably not at the level to predict it or they just press the wrong button and then they have to observe what it is, kick the AFCS out and reset the aircraft.

AVM HARLAND: I think, if I recall correctly, we've heard of one of those cases where that was to do with the airspeed and altitude coupling and that airspeed was favoured by the AFCS, which resulted in one of the 6 Avn aircraft, I think it was, committing to a dive. Were you aware of that incident?

D2: I'm not aware of that – of an incident like that, but every modern helicopter that has integrated AFCS will have a changeover logic, usually based on airspeed between forward flight and hover consideration and it's normally between 40 and 60 knots. And so if you end up coming back below that airspeed, the logic will change for the AFCS. And if I recall, the MRH prioritises airspeed over height until it reaches a safe height that's programmed into the AFCS for it to not go below, and then it will prioritise height.

AVM HARLAND: Yes, that seems consistent with what I recall. How did you feel about your understanding of the modes in the AFCS when you were flying MRH-90, given that you were quite experienced? Did you feel that you were all over it and you understood how it all worked?

D2: Fairly well all over it. Like, I was flying it a lot more than others. So I was very comfortable with it, but I would be monitoring the person flying next to me for their understanding of it most of the time and looking for any errors or their use of the AFCS.

AVM HARLAND: Did you see many errors, like, given that you were a QFI? You know, did you have good confidence that everyone was really all over AFCS modes and their management?

D2: For the most part in 6 Avn, our experience base was a little bit better. Like, as in we have slightly more experienced pilots but that doesn't necessarily determine a knowledge of the system. But I didn't have any concerns that people didn't understand the use of the AFCS.

COL STREIT: Thanks. Just one final matter I overlooked earlier. Just in relation to the mission itself, when you were transiting to the initial point, did D3 say at any point in time if he should have the doors of the aircraft open to help with situational awareness or anything like that?

D2: Nothing about the doors was communicated.

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COL STREIT: Sure. Thank you for your evidence.

MS McMURDO: I've just got a few questions. Can I take you back to your early days when you were promoted to Captain in 2014 and then in 2017 you were posted at Troop Commander to 6 Aviation Regiment? So you were a fairly junior Captain to be Troop Commander then?

D2: At the time, ma'am, that was on schedule. So at the time, the Captain time in rank was six years, and so two years as a Troop Commander posting was the expected time to go into that position.

MS McMURDO: So did you find it difficult in terms of managing the demands of the role of Troop Commander, and the administration, and taking care of Troops, and maintaining your flying credentials?

D2: I did, ma'am, and it involved regular study on a Sunday afternoon just to stay on top of the technical side of the aircraft and the flying, just so that I had the time during the week to not focus on that.

MS McMURDO: Did that remain the position throughout your time at 6 Aviation Regiment for relatively young Captains coming in as Troop Commander? We have heard, for example, that they don't get paid as Troop Commander until they've been a seven-year Captain.

D2: Yes, that's correct. Well, yes, I mean in my time coming back, I had conversations with both D20 and Dan about that exact issue.

MS McMURDO: Then just taking you back to your evidence about the junior aircrew up early in the morning, having coffee early in the morning over breakfast, and you felt things could have been done better. Did it seem to you that there was this feeling among junior aircrew they were excited about being off on an exercise; it was novel, it was new, it was a bit like kids at a school camp? There was a bit of excitement and they didn't appreciate the need to be very disciplined in terms of their sleep, hygiene and their sleep regime?

D2: Yes, I would say that there was an element of that, but I'm also not saying that because I am saying they were doing the wrong thing. I actually think the onus is on the experienced aircrew to frontload them with the information on, "This is how you need to operate in a field environment and manage your fatigue". And we probably could have briefed them on that.

MS McMURDO: Thank you. Then going back to your comments about Army culture and Army not appreciating the critical importance of fatigue for aircrew and others, could I expand on that a little bit? Is it the position

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that whilst it was one thing for soldiers on the ground to work in a fatigued state – by no means ideal in terms of decision-making and efficiency – but it was another for aircrew to be working in a fatigued situation, because of the safety concerns that it can lead to accidents putting at risk the lives of aircrew and others and, of course, the valuable aircraft themselves involved?

So there was a difference that Army wasn't recognising in terms of its culture between putting up with fatigue for regular soldiers and the need for aircrew, because fatigue for aircrew really did have significant safety issues, both for individuals and – people and also expensive aircraft?

D2: I would agree with that, ma'am, and it was probably just more of an education piece rather than an active not being aware of it. But it was just an education piece because we are fundamentally different and the Air Force – everything in the Air Force points towards getting aircraft in the sky. Everything in the Army points towards getting boots on the ground and looking after the soldiers and the corporals that are conducting that fight. An Aviation element, by nature of it, has to be different to that, and support that. But there is differences in how we need to manage that and it's just an educational piece.

MS McMURDO: Sure. Then can I just ask, how does that fit in with your very glowing views of the management by the leaders in 6 Aviation Regiment, D19 and D10? You said what a terrific job they did and how hard they did work for their people on the ground. How did they manage this problem in Army culture in terms of the aircrew and fatigue?

D2: I think that probably goes bigger than the sphere of influence that those two members have, but they manage what they can within the Regiment environment or the deployed environment. In my opinion, they were very, very active in member welfare and were trying to stay very in touch with how the Regiment was tracking. And I believe the CO was trying to implement other fatigue data tracking plans to just try and get some raw data back from everybody.

I don't know if it got off the ground. I didn't see an effect of that, but just trying to work within their own levers that they can pull.

MS McMURDO: Sure. So did they understand the critical importance of fatigue to the safety issues for aircrew and aircraft?

D2: Yes, I believe so.

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MS McMURDO: They understood it but they were not getting support from higher up to do what they needed to do to implement this?

D2: I wouldn't say that either, ma'am. It's just external to Aviation command in general. Big Army just doesn't really understand Aviation and the requirements of that. And the way people post in and out of the Regiment means that we could have logisticians that have come from a totally different environment with totally different work/rest cycles and ratios. And that constant inflow and outflow means that there's always friction within an Aviation Regiment, trying to bring those people on board because they've come from a totally different environment.

MS McMURDO: What do you mean by "Big Army"?

D2: Everything outside of Aviation, effectively.

MS McMURDO: Thank you. Now, there'll be a number of applications to cross-examine. Could I just find out who's seeking to cross-examine?

LCDR TYSON: I will be.

MS McMURDO: So a time estimate?

LCDR TYSON: Ten to 15 minutes, ma'am.

MS McMURDO: Next?

SQNLDR GILES: Five to 10 minutes, ma'am.

SQNLDR THOMPSON: Under five minutes, ma'am.

SQNLDR NICOLSON: Fifteen minutes, ma'am.

COL GABBEDY: Five minutes, ma'am.

COL THOMPSON: Ten minutes, ma'am.

MS McMURDO: Okay. That gives you some idea of what's left.

LCDR GRACIE: There might be something, but I'll wait until everyone else - - -

MS McMURDO: But it will be very brief; is that right?

LCDR GRACIE: One matter.

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AVM HARLAND: Could I just hop through these questions now and then we can go straight into the cross-examination?

MS McMURDO: No, we won't, we'll have lunch.

AVM HARLAND: After lunch, yes, absolutely, after lunch. Yes, that's very important. Your comment regarding "Big Army", am I to read this correctly, that within the Army Aviation Command there's a very good understanding of what it is to do aviation, that they run against issues as they relate to general things like tasking, personnel management, and the like, that are the Big Army way of doing things, and that creates some friction? Is that a correct read of what you are saying?

D2: That's what I'm saying, sir, yes.

AVM HARLAND: You also said in para 155 of your addendum statement that, "MAJ D10 would" – and I'll quote you –

> *place the needs of the individual above the needs of the Squadron when it was within his power to do so.*

Was that often the case, or were there often cases where it wasn't really within his power to do so and you just needed to crack on with it?

D2: I don't know of specific references but I guess my observation that he would always go out of his way to try and find in favour of the individual, I guess, is what I'm saying there. You might need to ask him about what things were getting in the way for not being able to help the individual, I guess.

AVM HARLAND: Thank you. That's useful. Regarding the night-vision sortie, just as a kind of a matter of fact, can I just confirm that you were using the night-vision system for terrain clearance during the conduct of that sortie low-level below safety height?

D2: For the incident sortie?

AVM HARLAND: Yes.

D2: Yes.

AVM HARLAND: If you lost visual through your night-vision systems at any time during that sortie, what would you intend to do?

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D2: If I lost visual?

AVM HARLAND: If you lost visual. So you lost your surroundings on the night-vision system and you were uncertain of where you were and you were uncertain of your terrain clearance, what would you be required to do?

D2: Am I the flying pilot, sir?

AVM HARLAND: Yes.

D2: If I'm the flying pilot and I have no visual reference at all, then I would conduct the AHPA drill and call my call-sign and "Inadvertent IMC". If I thought that the formation was going to be affected by that, I would say the formation call-sign and announce, "Inadvertent IMC", and then announce a heading that I am flying, and then the rest would conduct a drill.

AVM HARLAND: At what altitude would you do that?

D2: Whatever altitude we were at, we would commence it at and then we would climb to a base altitude and – apologies, I don't recall the base altitude for that area – and then the aircraft would stack at an appropriate height above each other, so that we're not at the same altitude.

AVM HARLAND: So you would, effectively, maintain terrain clearance by – in instrument flying conditions?

D2: Correct, sir.

AVM HARLAND: Okay, thank you. In fact, I'll ask that one last. With TopOwl, the TopOwl that you were using on that night, on 28 June, where were they stored and did you do any alignments on the TopOwl before you used them?

D2: They were stored in an air-conditioned tent, I believe, at the Flight Line tents.

AVM HARLAND: Yes.

D2: And, no, alignments were not conducted on the deployment.

AVM HARLAND: Thank you. Finally, a general question regarding the incident sortie. Was there anything unusual or noteworthy about the planning or the execution for that particular sortie?

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D2: Apart from the change overnight with the planning and the RADALT failing on my aircraft, I thought the sortie was going exactly to plan. And, in fact, it was very simple and I was just in utter shock that something had gone down behind me at the point that it happened. So up to that point, no.

AVM HARLAND: So the planning changes the night before, that was in relation to the number of aircraft in the sortie; is that correct?

D2: The number of aircraft was the same, it was just the number of aircraft that were going to go in and pick up soldiers, which is a very simple change for us.

AVM HARLAND: Thank you very much. That's all I have, COL Streit.

MS McMURDO: Thank you. We'll adjourn for lunch now and resume at 1.15.

HEARING ADJOURNED

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HEARING RESUMED

MS McMURDO: COL Streit.

COL STREIT: Thank you, Ms McMurdo. With your permission, I just wanted to deal with one brief area I overlooked in the evidence-in-chief, rather than deal with it in re-examination. For the benefit of Counsel representing, I seek your permission to do it now.

MS McMURDO: Of course.

COL STREIT: D2, can I just ask you about the process of authorising a mission as it existed when you deployed to Proserpine? So can you just explain the process that was applied by 6 Aviation Regiment for mission authorisation?

D2: So 6 Aviation Regiment has a template that Authorisation Officers can use to cover off on all the extant requirements that are specified an Authorisation Officer needs to achieve, and then some additional requirements that are relative to 6 Aviation Regiment. And then, depending on the mission set, or depending on the mission, if it was a single aircraft, it would usually involve the Aircraft Captain, sometimes the whole crew, consulting with the – or explaining what they're going to go and do, with the Authorising Officer.

And depending on the Authorising Officer, a level of note-taking specific to the mission, and then also a Patriot Excalibur sortie, that's an online – or is a digital tool that records the specific sequences that were authorised for that particular sortie – just that sortie and that crew. And then that tool also highlights to the Authorising Officer currencies that are relevant to all of the aircrew and what they are current in at the time, and the requirements around being – there's SI requirements around going to fly.

If it's a formation sortie, additionally the Authorising Officer will be present at the orders briefing. And then we, at the time – I don't know if it was specified anywhere – but we like to always have an Authorising Officer present. And if the Authorising Officer was external to the formation, then we wouldn't have an additional Safety Officer present. But if the Authorising Officer was within the formation, we would usually have an extra person listening in of suitable qualifications and experience, usually another Authorising Officer, to listen in as a Safety Officer. And then they both reserve the right, at the end of orders, to offer up any points for that sortie that are applicable.

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COL STREIT: Just in relation to circumstances where the Authorising Officer was also going to be flying in a sortie, so I understand the process therefore is a second Authorising Officer would be present?

D2: Authorising Officer, it'd typically be someone with a similar qualification or level of authorisation, but not necessarily always the case. But someone with suitable experience to externally analyse what's just been said, because they're stepped away from it, and to provide any safety feedback to the formation as well. But they will not go down as the Authorising Officer; that will be the person who's qualified to authorise that sortie.

COL STREIT: So ideally the Authorising Officer, ideally, would not be the person who would then also be flying in the sortie; essentially authorising themselves?

D2: In an ideal scenario, yes.

COL STREIT: In your experience, putting aside the deployment to TALISMAN SABRE in July 2023, was it your experience that the sorties that you participated in, that the Authorising Officer was somebody who didn't fly in the sortie or who did fly in the sortie?

D2: It varied. And it's mostly due to if it was a Special Operations mission and we were conducting Special Operations relevant SOPs, then there's a level of authorisation that's required in SIs – rank and qualifications, mission qualifications – for that person to authorise. And there's a limited number of them in the Regiment. So if a second one's not available, sorry, because someone's in the formation, then it required that person of relevant seniority to be in the formation and authorise the sortie.

COL STREIT: So is that really just an example about where there might be insufficient numbers of persons that sit within that Special Operations authorisation category to authorise a Special Ops sortie that sometimes the Authorising Officer was simply the officer that participated in the sortie and not somebody outside the sortie?

D2: In a Regiment environment, we would usually have a separate Authorising Officer. But in a deployed environment, the other Authorising Officers may or may not be there with us.

COL STREIT: In a Regiment environment, having the second Authorising Officer, that's a protective mechanism, isn't it?

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D2: It's an independent look at the mission and the plan because the senior aviator, or the Air Mission Commander, might have been intimately involved in the planning process.

COL STREIT: So, really, it's to deal with the risk of unconscious bias on the part of an Authorising Officer to authorise a mission that they're ultimately participating in?

D2: I would agree with that statement.

COL STREIT: Thank you. That's my questions.

MS McMURDO: Thank you. Yes, applications for leave to cross-examine, please.

COL STREIT: I should add, the witness has his statements underneath the A4. Thank you.

MS McMURDO: Yes.

<CROSS-EXAMINATION BY LCDR TYSON

LCDR TYSON: D2 , my name's LCDR Matthew Tyson. I'm representing CPL Alex Naggs' interests. D2 , I just want to ask you a background question first. You gave some evidence about the sorts of missions that 6 Avn did, and the Taipan not being suited for those missions.

You placed a caveat around that in terms of en route flying; you said the Taipan was advantageous. Just in relation to that topic, in terms of formation flying and formation flying at night, is the Taipan a suitable aircraft for that type of manoeuvre as compared to things like the Black Hawk?

D2: It's a suitable aircraft for that manoeuvre. But, in my experience, it's not as good an aircraft to conduct that manoeuvre.

LCDR TYSON: So formation flying at night, in what way, D2 ? Could you explain that, please?

D2: Mostly around the cabin configuration and crew configuration. So in a Black Hawk of any variant their aircrewman have their own crew station that has its own window that allows them to look in and out of the aircraft

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and operate in their own workspace, and open and shut that window as required, or as the complexity of the mission dictates – or the conditions.

Whereas in the MRH, the configuration that we ended up on was they have to – they sit in a seat which is not a dedicated crew station, and that seat is at the rear of the door and is exposed to in-flight conditions, or air flowing over the airframe.

So that can come with complications for them in that seated position and, as I've talked about, it has windchill effects and therefore, like, they're exposed to the elements. So it can alter, as we've seen, our decision-making around how we're going to operate, and it can also alter the aircrewman and their ability – what they can see, because the door might be closed.

And, just simply, the seating position in a Black Hawk, an aircrewman is sitting sideways to the aircraft, can see if they lean out forwards, can see backwards, and remain within the restraint of that harness and return to their seat quite quickly. But in an MRH-90, in that seat, they have to get out of that seat and then manoeuvre themselves so that they can look around the bulkhead and look through the window of the door if the door is closed – even if it's open, around the bulkhead. So it just requires more from them, to be able to get the same clearance, I guess, and situational awareness of what's happening outside the aircraft.

MS McMURDO: It's difficult for them to contribute usefully to the pilot's situational awareness?

D2: Would be a more succinct way to put it, yes, ma'am.

MS McMURDO: I'm not really trying to be succinct; I'm just trying to make sure I understand. Thank you.

LCDR TYSON: I'd like to then move to the lights on the back of an MRH-90. I think the APALS – or the precise term I'm not exactly sure of – but in terms of the lights on the back of the Taipans, to what extent are they helpful if you lose visual during night flight? To what extent are the lights of the other helicopters that might be in front of you helpful for you to regain visual and regain your situational awareness as to where you might be in the formation?

D2: Well, those lights – in a lower illumination environment, those lights are advantageous and they appear brighter. The APAL specifically – not the formation lights – they can appear brighter, depending on their setting

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to the flying pilot, or to anyone within the crew, looking at them through a Night-Vision Imaging System.

So identifying an aircraft first, and then trying to judge its orientation, those lights, because they're on the tail you know where they are on the aircraft. They don't necessarily look like another formation light; they're a straight line of light. So we, in 6 Avn, requested that they be kept in place because there was talk of removing them, and we requested, given our operations, that we keep them.

LCDR TYSON: Thank you. Now turning to another topic. You've given some evidence about the cabin doors on the helicopters and what was said. Your expectations then of what was said during orders about what would happen to the cabin doors, that decision to keep the cabin doors shut during the transit, that was always subject, wasn't it, to it being overridden by the Aircraft Captain, in a particular helicopter in the formation?

D2: So it's up to the Aircraft Captain to authorise the opening and closing of the doors, and that's because there is a velocity not to exceed around that manoeuvre, so we don't inadvertently rip the doors off. So we need to be below a certain speed before an aircrewman can conduct that, and so it's up to the Aircraft Captain to authorise that because he will check that we are below a certain speed.

Within the formation context, everyone within the formation will follow the cue of the flight lead, as to whether doors are going to be open or closed. So if I decelerate and the formation decelerates behind me, and it's been pre-briefed in orders, they would anticipate that doors are about to be opened, and you would expect that they would clear their aircrewmen on harness, and then that they would wait until they see my door has come back.

So in the context of the mission, we were preparing to do that in the hold, and my recollection is that 81, my aircraft, hadn't actually done that, at that point.

LCDR TYSON: Were you planning to open doors after you reached the IP, or would it have been just before you got to the IP?

D2: Basically, as we were given the, "We are definitely going in for the extraction", I would've prepared, configured the aircraft for that extraction, which would've required opening the doors. And as I had heard that that was nearing, we were discussing in my aircraft, from my recollection, at the time of the incident, that we were preparing to open those doors.

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LCDR TYSON: Do you remember that a direction had come from the AMC in 84, I think, to get ready for the ground extraction just before the crash, or do you have any recollection of that?

D2: I remember hearing radio chatter between that aircraft and the ground call-sign, to the effect that they were going to move to the extraction location and prepare it for our arrival, but I don't recall a communication from 84 to the formation saying, "Prepare for extraction". It may have happened and I just don't recall it.

LCDR TYSON: So the order to execute the extraction, it could've been given but you just don't recall one way or the other?

D2: I doubt it, because the environmental conditions at the island, at the extraction point, were not suitable for an extraction at that point.

LCDR TYSON: I now want to ask you about the RADALT. So during the mission briefing, there was no discussion about what it should be set at; is that correct?

D2: Correct. The "not below" height indicates to the crew what they should set their RADALT at.

LCDR TYSON: And it was your assumption, or your expectation in accordance with Standard Operating Procedures, that the RADALT for the four aircraft involved in this mission should've had their RADALT set at 180?

D2: It should be, in accordance with the Standardisation Manual, set to 180 feet.

LCDR TYSON: If it were the case that Bushman 83 had the RADALT set at 45 feet, can you think of any reason why that might've been the case?

D2: I think the aircraft – I'll use the term "wakes up" – but when the avionics come online, I think it wakes up at 50 feet – or, no, it might be zero. No, I don't know, sorry.

LCDR TYSON: But there's no good reason you can think of why Bushman 83 would've had its RADALT set at 45 feet prior to reaching the IP?

D2: I mean, it's not the case in this mission, but a common "not below" height for flying, the limitation – not necessarily a height that we would operate at, but a common "not below" height – would be 50 feet. But in

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this mission, so 50 feet, 10 per cent would be 45 feet, if that was the authorised height. But my recollection was it was 200.

LCDR TYSON: I think when you gave some of your oral evidence, you actually said it was mandatory to set it at 180, given you were going overwater before you reached the IP.

D2: Mandatory might've been – look, without looking at a Standardisation Manual, I don't know if it says "must", or "may", or "should". It might say "should"; "should" gets used a lot. But "mandatory" might've been an incorrect term.

LCDR TYSON: Had the mission continued, when you got to Lindeman Island, when you were getting ready to go to the LZ, would you have then switched it off, or something like that, once you'd left water, or - - -

D2: No.

LCDR TYSON: It would've stayed on?

D2: I'd leave it at the setting, and you would get a decision height alert on approach to that LZ. And there's a requirement as well, if a decision height alert happens, that you acknowledge, verbally acknowledge, that you're continuing with an approach and that you're on an approach.

LCDR TYSON: When you were asked some questions by the Board about what you would do if the RADALT warning was triggered – and incidentally, just to confirm, when the warning is triggered, it's not just the pilot and the co-pilot can hear it; the aircrewman hear it as well, don't they?

D2: I'm unsure of that.

LCDR TYSON: So definitely the pilot and the co-pilot, but you're unsure of the aircrew. Well, you were asked something along the lines of, "What would you do if the warning went off?", and you said you'd pull up. I just want to explore that answer a little bit more, if I might? So when you pull up, how then do you reset your altitude? For example, do you use the Primary Flight Display? Do you use TopOwl? Or is there some ping that you get from the altimeter when you reach the height? How do you reset your altitude?

D2: So just to clarify, I don't think I used the term "pull up". I think that was given to me. I think I said "respond", because it's a situational thing. You might know that it's about to go off, and so no response is an appropriate response. But if it's unexpected, the expectation is that you will

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immediately look at your height, and if it's not what you're expecting, you will effectively apply enough power to level the aircraft so that it doesn't continue a descent, and if terrain is an issue, then to climb back to your "not below" height – your specified "not below" height.

And it might be unexpected in the sense that if you have your radar altimeter engaged, then if you are not disengaging the trims for the collective, which means that your left-hand trigger finger is pulling the collective trim trigger in, it might be the case that if you're pulling that in and you're descending, that you have not detected that descent.

So if you hear the decision height go off, and you identify you do have that finger on that trigger, you release it and the aircraft, if RADALT height is still there, will immediately level-off at the height that you release, with maybe a minor excursion, or you pull collective in and you climb away from the height that triggered it.

LCDR TYSON: But you don't necessarily immediately pull collective; you actually look at your instruments first within the cockpit.

D2: If you – yes. If you've got it set to 45 feet, you're probably going to pull collective because that's pretty low. If I've got it set to 180 feet, I'll probably confirm it and then, if I need to, pull collective to get it back to - - -

LCDR TYSON: In the Jervis Bay incident, one of the things that you did, you actually untethered yourself from the cables and lines. That's right, isn't it?

D2: That's correct.

LCDR TYSON: Do you remember what height you did that at?

D2: We had quite a high rate of descent, and we started at 55 feet. We had quite a high rate of descent, and I could feel that proprioceptively, I guess, and then I felt the aircraft slow down, and it's called the "in ground effect bubble", where the air is pushed back by the ground and then that pushes the rotors back, and creates a higher pressure under the disc. And I felt the aircraft slow down, and then I also heard the rotors start to wind up again, so that those two things together were saying to me that we are very close to the water, and I went into preparing myself for a crash.

LCDR TYSON: One of the consequences of that is when you take off the cables, that you're off comms, isn't it?

D2: That was the case, yes.

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LCDR TYSON: So that's comms from external. I mean, not in that case that there was someone else behind you, but you wouldn't necessarily – you wouldn't be able to hear externally, but can you also – is there speech within the cockpit? You can still talk, or is it just too noisy?

D2: Probably visual communication only, yes.

LCDR TYSON: On this mission as well, when were you planning to change over between yourself and D1, between who was actually flying the MRH-90, and the other - - -

D2: Without going into too much detail, I guess, from a security standpoint, it's an individual Captain's discretion when they take over, when they feel comfortable taking over. And so for me, once I've identified the area where I know my aircraft is going – because we just use GPS guidance to get us there – once I identify the area, I know where my aircraft is landing, and I'm comfortable I know where I'm going, then I will take over and fly the aircraft.

LCDR TYSON: But it is up to the individual Captain. It wasn't a case, for example, at orders everyone was told, "At this particular point you're expected to change".

D2: That's not the requirement, no. The Captain can do it at whatever point they decided.

LCDR TYSON: Thank you. I now want to ask you some questions about the turns, just to try to get a bit more precision about the turns. So this is during the holding before you reached the IP. Now, if this is wrong, tell me I'm wrong, but you did – there were two left turns. So the first turn is 180 degrees. It involves a left turn, and then a track which takes you 180 degrees. Then there's a second left turn, and then a track, or a leg, which takes you another 180 degrees. Is that correct? So two left turns, each of 180 degrees.

D2: Two left turns. The first turn – and you can look at pretty much any of the annexes – my Annex C in my addendum statement points out to you – I'll find the right page.

LCDR TYSON: It just may be, if you can – it might be that you need to mark it with a pen rather than saying it on audio, on the transcript. But you're looking at, what, page 8, are you? Or page 5? Is page 5 the better page? No?

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D2: Page 4.

LCDR TYSON: Yes.

D2: And you'll see roughly in the centre of the picture there's a large "D".

LCDR TYSON: Yes.

D2: And there's a racetrack surrounding that large "D".

LCDR TYSON: Yes.

D2: And so the aircraft's track came in from the – if north is up – south-west, and you can see that track towards the north-east, pointing towards where it says, "Surface", and then a bar, and then "1000 feet".

LCDR TYSON: Yes.

D2: So that was our track around the peninsula. And then you can see the right turn, and then you can see a left turn of approximately 100 degrees.

LCDR TYSON: Yes.

D2: And then we tracked outbound. That's the straight leg you described. And then a left turn that was approximately 100 or so – 180 degrees, for the inbound turn.

LCDR TYSON: Thank you, that clears that up. And the whole – that circuit is about, what, one nautical mile in length?

D2: The straight legs, yes.

LCDR TYSON: In your conversations with D9 afterwards, after the accident at Proserpine Airport, were you aware that during the holding turn – one of the holding turns, that Bushman 83 was flying in an abnormally high plane? Did you become aware of that?

D2: That's when I became aware of it, yes.

LCDR TYSON: What was actually said to you about that?

D2: Just that they were high. Not a description on how high, or relative to the formation; just that they were high.

LCDR TYSON: Is that the pitch of the aircraft or is it the altitude?

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D2: That's the altitude.

LCDR TYSON: Both? Altitude. Did you hear anything over the formation radio about, "You're starting to flare a bit. Slow down", or anything like that? Did you hear anything like that?

D2: No.

LCDR TYSON: Have you flown position 3 in a heavy lift formation of MRH-90s?

D2: Many times.

LCDR TYSON: Indeed you've done, what, over 1100 hours' flying in an MRH-90, haven't you?

D2: Yes, probably nine hundred and something in the actual aircraft.

LCDR TYSON: Flying in that position 3, have you ever encountered difficulties in maintaining formating off the flight lead and position 2 in the formation?

D2: I've encountered – if you are flying cross-cockpit – so in this instance, heavy left. If you're the left-seat pilot and you're looking across, in a left turn the instrument coaming – if you get high on the aircraft that you're formating off, and it doesn't have to be that high, the instrument coaming will obscure the two aircraft that you're formating off, just because of the angle and the coaming. And so that pilot needs to maintain a position where they can keep those two aircraft visual. And if they can't, then they'll just call "Blind" internally, and the other pilot will take over because they will be able to see those two aircraft.

LCDR TYSON: And that's a well-known problem, is that right, to an experienced aircraft pilot?

D2: It's not necessarily a problem. It's just a – it's all aircraft will have some sort of obstruction from the coaming, and it's just a matter of what angle of bank you need to get into to achieve that. In the MRH, the top of the coaming is just a little bit higher than other aircraft.

LCDR TYSON: So it's something that you would just become aware of in terms of your training on the MRH-90, and you'd just allow for that.

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D2: Yes, you just control your position so that you can continue to see those two aircraft, but it happens, and the procedure for handover/takeover to the other pilot is there, and that's why it's a two-pilot operation.

LCDR TYSON: In terms of the unusual attitude recovery drill, have you ever performed that drill in an airframe as opposed – sorry, when you're flying in an airframe as opposed to in the simulator?

D2: Not for real. Not as in, "I've lost spatial awareness and I'm required to enact that". But, yes, regularly we'd – well, semi-regularly we'd do that drill in the aircraft. If I do an instrument flight test on someone in the aircraft, I'm still required to conduct that UA serial, but I have to conduct it in visual conditions. I can't do it in instrument conditions. So that serial is conducted in the aircraft from time to time.

LCDR TYSON: So you'd be confident performing that serial if you had to do it for real?

D2: I'm confident in the procedure but, as I had recently learnt only three months beforehand, the startle reflex is very real and it can take a brain a couple of seconds to get over that and realise what's going on.

LCDR TYSON: And in terms of that drill, as compared to the inadvertent instrument meteorological conditions drill, that second drill, is that again a drill that you've actually applied when flying an airframe as opposed to in a simulator?

D2: That drill would be performed – each pilot would do that drill as part of their annual NVD assessment in the aircraft.

LCDR TYSON: So, again, it would be – you'd be quite confident doing that drill, but subject to the fact that, in a real-life emergency, you're human and it would take some time to - - -

D2: It might take - - -

LCDR TYSON: - - - collect your thoughts and - - -

D2: Yes.

LCDR TYSON: And what difference does it make, in terms of how you're flying the aircraft, if you're performing the IIMC drill as compared to the unusual attitude and recovery drill?

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D2: Well, the initial actions for it are the same, it's just the end state is different. So if you're in cloud, you need to climb to a height that's safe to avoid terrain, and they're mandated heights on Aviation mapping publications. Whereas the AHPA drill, you can just – well, sorry, the unusual attitude drill, you recover it to a safe height and speed, not pointing in the direction of obstacles, and if you're satisfied with that, then it ends there.

LCDR TYSON: And I think you said when you do the unusual attitude recovery drill you always announce your call-sign before you do the drill. Is that right?

D2: No, that's the Inadvertent IMC drill.

LCDR TYSON: That's that one, but not the other one. If it were the case that Bushman 83 were high in the plane during the turn, could that flying position be consistent with the aircraft doing either an unusual attitude recovery drill or an IIMC?

D2: Unlikely an inadvertent IMC drill, because we weren't in instrument meteorological conditions, so I don't see them initiating that. An unusual attitude recovery drill, potentially. In a formation context, I would consider that height an unusual attitude because they are meant to be down on plane with the rest of us. So if they've either drifted off plane and an error has developed and not been picked up due to distracted, or if they had commenced control inputs due to some other influence, then they may be in the middle of a UA recovery drill.

LCDR TYSON: And, based upon your experience, can I just ask your opinion: what are some of the reasons why 83 might've been in an abnormally high position in the plane? Could one of the reasons be that the formation had pinched in and there might've been an issue with rate of closure between 83 and 82, which meant that 83 adopted that high position? Is that a potential reason? The formation could've caused that?

D2: I can say, in my experience, there's a few things. If a closure rate had developed between 83 and 82 and it was undetected, and then the flying pilot detects it and he determines that he needs to conduct an abrupt reaction, it might be to climb – given the height, going down – it might be to climb the aircraft away from that other aircraft. So there's a conflict there, and then subsequent actions. Yes, I don't know what – I'm not going to try and speculate what happened in the aircraft.

Another potential – we were in a left turn, in a sustained left turn, there's the Coriolis illusion where you – if you're in a banked turn, and then you

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turn your head, you can inadvertently activate two semicircular canals in your vestibular system instead of one, and that can create a tumbling sensation, and it's very overwhelming to anybody but, in an Aviation context, it's not good. I haven't personally experienced that. But we were in a left turn, and a flying pilot, if they look in and down to the left, may have inadvertently activated that sensory illusion, and that would cause them potentially to have control inputs that would depart formation.

And then another potential, I guess, is that distraction just causes an error to develop – distraction on behalf of the flying pilot just causes an error to develop, and it might just be a slow drift out of the formation. And then when you realise and you look for the aircraft picture that you're expecting, it looks nothing like. If you're above the formation by a significant margin, like nearly twice the height of the formation, the picture you're expecting when you see those aircraft looks nothing like what you're expecting to see. And that, from a visual sensory input, would be very confusing.

LCDR TYSON: And the distraction could be caused by, for example, you're doing preparation for the mission to come and there are just a lot of things that you're preparing for, going through your mind, and just ordinary human error leading to distraction?

D2: Could be. It could be that the GPS – there's a bunch of button pushes to get the GPS to orientate to a target, and quite often the MRH was not – it was a bit of a sequence to get the GPS correctly aligned, compared to other GPS's I've used. And so you could potentially be looking in, trying to talk someone through that if they're struggling. I don't know.

LCDR TYSON: And I should've asked you this when I was asking you about the turns, but when – the turns during the hold, they – what's the aircraft banked at? What, about 15? 20 degrees? Or what's the angle of bank on the turn?

D2: Yes, somewhere between. Approximately 15 degrees. We try and fly nice and smooth and – so that everyone can anticipate us as a flight lead. So we're not – we're just using the AFCS to roll in and out of turns, which is quite slow, and we're trying to hold an angle of bank that doesn't require big power margins for people behind us. So we try and not exceed 20 degrees unless we have to, to avoid something.

LCDR TYSON: And is another reason why 83 might've got in an abnormally high position in the plane – could it simply be a loss of horizon caused or contributed to by meteorological conditions, angle of bank, things like that, on the night in question?

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D2: I'm not going to – I wouldn't rule it out, because they – given their position, they would've been looking through us, and then through that rain shower that was on the other side of us, and looking at the peninsula landmass that was on the other side, and the visual cues from that, at that point, weren't great – visibility. You could see the landmass, but you couldn't make out a lot on it.

But when you're in the position of 83, you're formating off two aircraft, and if they're stable, they create a pseudo-horizon for you. Because – you have two aircraft in the sky, and you draw a straight line between them, that's a pseudo-horizon. And then, the HMSD also has a horizon line. And so, if you put that line on those aircraft, you're on plane with those aircraft. So – yes.

LCDR TYSON: So that, to some extent, operates as an advantage for the pilot flying the third ship in a heavy left formation?

D2: Yes. And I only – it might've been in 2022, I was in proper overwater conditions off the Sydney coast – rain showers – in a similar scenario, but very, very dark – rain showers obscuring the horizon. And we were using that technique to create a horizon for us, to stay on plane with the other aircraft, and that required heavy reliance on the RADALT height function – sorry, not the decision height which is the oral alert, but the collective function where it holds the height for you – heavy reliance on that, to maintain the correct height.

Yes. This scenario, there's – you're not out in the middle of the ocean. There's islands around you that provide a bit of contextual "which way is up". Yes, it's a bit different.

LCDR TYSON: Thank you, D2 . Thank you, ma'am. Thank you, sir.

MS McMURDO: Next application for anyone to cross-examine? Yes. Thank you.

<CROSS-EXAMINATION BY SQNLDR THOMPSON

SQNLDR THOMPSON: Thank you, ma'am, sir.

D2 , I'm SQNLDR Chris Thompson. I represent the interests of WO2 Laycock. I only have a few questions for you. Would you agree Lindman Island is about 13 kilometres south-east of Hamilton Island?

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D2: I'd have to measure it, but - - -

SQNLDR THOMPSON: And I'm only asking for a rough - - -

D2: Sorry, it's south-east of Hamilton Island, yes.

SQNLDR THOMPSON: South-east?

D2: Yes.

SQNLDR THOMPSON: The Bureau of Meteorology, in its daily weather observations, records that on 28 July 2023 the minimum temperature of that day was 17.5 degrees. Does that reflect your memory of the weather?

D2: I don't recall looking at the aircraft, but I did take a snapshot of the weather at Hamilton Island, which is Annex C, page 1.

SQNLDR THOMPSON: Yes.

D2: And it has the temperature at 1.07 am at 21 degrees and the dew point at 17 degrees.

SQNLDR THOMPSON: And, as I say, my following question: was that a maximum temperature on the same day of 21.6 degrees Celsius?

D2: Mm.

SQNLDR THOMPSON: Thank you. Those are my questions.

MS McMURDO: Thank you. Next?

<CROSS-EXAMINATION BY SQNLDR GILES

SQNLDR GILES: D2 , my name is SQNLDR Giles. I represent the reputational interests for LT Max Nugent. So I just want to draw your attention to the Defence statement, paragraph 45, and I'll just get you to read through that. It's a fairly short paragraph.

D2: And 19 – sorry, 45?

SQNLDR GILES: Forty-five. You can read through it yourself quickly without - - -

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D2: Without reading it out aloud?

SQNLDR GILES: Without reading it out.

D2: Okay.

SQNLDR GILES: Did you need to make any amendments to that statement – paragraph?

D2: No.

SQNLDR GILES: What seat were you sitting in at 1955, as per paragraph 45?

D2: I was seated in the front right seat.

SQNLDR GILES: And what seat was D1 sitting in?

D2: D1? Okay, I see where you're going with that. D1 was seated in the front left seat.

SQNLDR GILES: So now that we have reflected on that paragraph, did you wish to make a change to that?

D2: D1 was seated in the front left seat.

SQNLDR GILES: Great. Thank you. Now turning to the same statement, paragraph 42. The middle of the paragraph you state:

> *The intent was for me to conduct all flight lead duties and D1 to conduct normal co-pilot duties.*

My question for you is, what is normal co-pilot duties?

D2: Sorry, I'm just considering – normal co-pilot duties in relation to this mission?

SQNLDR GILES: Yes.

D2: I don't know if I can go into Special Operations co-pilot duties in this forum. I don't know. I'd need some advice on that, sorry.

SQNLDR GILES: I might ask a couple more questions, but I may pass that area. In relation to this specific flight, you were asked a question by my

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learned friend prior and you had to stop yourself, so I will ask a question and then we can reflect on whether or not you need to consider your position.

D2: Sure.

SQNLDR GILES: Who was flying your aircraft from – and it could be either yourself or the co-pilot – from the point of take-off to the point of the incident?

D2: The co-pilot.

SQNLDR GILES: The co-pilot?

D2: Mm-hm.

SQNLDR GILES: And that was D1; is that correct?

D2: Correct.

SQNLDR GILES: And on that assumption, you took over being the flying pilot from that point in time of the incident; is that correct?

D2: I did not take over, no.

SQNLDR GILES: No. So, D1, being the co-pilot, was the flying pilot the entire time until you landed?

D2: Until we landed at Lindeman Island.

SQNLDR GILES: Okay.

D2: Well, I'm not sure of the time line, but until we landed at Lindeman Island and then we exchanged those flying pilot duties later, during the search, just based on things that were happening during the search or to relieve each other from a fatigue management side of things.

SQNLDR GILES: Now, is there a standard process or a procedure for who is the flying pilot and who is the non-flying pilot?

D2: I think that would venture into what I was discussing were Special Operations-related duties.

SQNLDR GILES: We'll just keep on adding those to the list.

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D2: Sorry.

SQNLDR GILES: That's okay. Now, whilst the aircraft is in the air, you've got a flying pilot and you've got a non-flying pilot, because I'm assuming they both can't fly at the same time?

D2: Correct.

SQNLDR GILES: What does the non-flying pilot do whilst the flying pilot is flying the aircraft?

D2: Monitors the mission progress; inputs to the radios and changes over radio frequencies; manages the GPS; may brief the next sequence in terms of the landing brief or what their formation is – they're anticipating the formation to do in terms of the landing sequence; monitors, as well, the flying pilot and the other aircraft. Because they are not flying and specifically looking at the other aircraft, the idea is that they're building a real situational awareness of the crew, and that they are looking externally as well and trying to increase their own situational awareness.

SQNLDR GILES: So would you say that the non-flying pilot is the more experienced pilot or the less experienced pilot?

D2: Not necessarily. No, it just depends on the phase of flight and what's relevant to – or when they experience a greater level of experience is required. And it might be the landing phase or it might be inclement weather – inexperience in inclement weather, if someone is struggling then a more senior pilot may help them out and give them a break.

Or if they're obviously not maintaining station and making it harder for the rest of the formation, a more experienced pilot might take over and become the flying pilot to relieve them for a bit, or show them – because we're always mentoring junior pilots – show them correct station keeping and technique. So it can vary.

SQNLDR GILES: Ma'am, they're the only questions that I have pending, potentially, discussions in relation to the areas that the witness could not discuss in a public forum.

MS McMURDO: All right then. And you're still wanting to pursue that?

SQNLDR GILES: Unless those areas are going to come out through other witnesses, I think it's important in relation to the interests.

MS McMURDO: I guess the same issues will arise with any witness if

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they're operational matters.

SQNLDR GILES: I would image they would.

MS McMURDO: So it might have to go into a private session, but we'll see if anything else arises.

SQNLDR GILES: Yes, ma'am.

MS McMURDO: Any other applications for cross-examination?

<CROSS-EXAMINATION BY COL GABBEDY

COL GABBEDY: Afternoon, D2 . We're nearly at the end.

D2: Sir.

COL GABBEDY: I'm COL Nigel Gabbedy. I appear for MAJGEN Jobson. I've just got a few questions for you. You were talking about TopOwl in your evidence and you were directed to the AATES' findings. And my note is you made the comment that those findings generated the product that we have. Do you recall that?

D2: I don't think I specifically said that. I was aware that there were AATES' findings and I don't know where it progressed from the AATES' findings to becoming into Service. I'm not sure what that process was. So I'm just aware that there were AATES' findings and they were potentially adverse to that particular symbology variation.

COL GABBEDY: It may well be that I'm off at a tangent, but what I was seeking to explore was did you have an understanding that some product was generated and, if so, what was it?

D2: Well, only that AATES would have a test report that would then yield further information. But I have not seen that report; I was just aware of that report.

COL GABBEDY: So you were just aware of the report. All right, thank you. At paragraph 84 of your second statement, or your Inquiry statement I think it's been referred to – I'll just let you reach that paragraph – you're referring to initiatives that the Regiment's done to combat the tempo and workload.

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D2: Yes.

COL GABBEDY: In the last sentence, you say that some additional plans were being explored and implemented relating to Regimental structure. Could you just expand on that and explain what those plans were?

D2: So that was looking at, internally to the Regiment, how we could potentially restructure down the track if the Regiment was able to achieve a bit more of a steady state with MRH. And we specifically were looking at (1) we wanted to remove the Force generation side of it, which I've touched on. The CO also didn't like the fact that the people that were key to creating new SO aviators were also the same aviators that, if he got a real-life mission, would be the people that would go out on that mission, and if that formation was to not return, we would effectively lose our Special Operations' Aviation capability. So he wanted to try and separate those things and have a fighting Force that wasn't also the people that had to create the fighting Force.

So we were looking at potentially an internal restructure where those instructor members could be removed from the operational Squadron and held at a Regiment level. They would conduct the training, the on-boarding training, and initial qualifications to get members into the Squadrons, but then the Squadrons would own the fighting Force side of things.

COL GABBEDY: Do you know how far that internal restructuring plan has progressed since you became aware of it?

D2: It was just a plan.

COL GABBEDY: Just a plan.

D2: Events last year may have derailed it.

COL GABBEDY: You're not aware of anything?

D2: I'm not aware that the Regiment's operating under that construct right now. I believe it's similar to what we had.

COL GABBEDY: Thank you. My next question sort of draws from both statements. So at paragraph 37 of your Inquiry statement you talk about the way the CO and the OC reacted to aircrew pulling out of a mission.

D2: Sorry, what was the - - -

COL GABBEDY: Paragraph 37 of your Inquiry statement. And then at

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paragraph 25 of your first statement, you talk about D20 leaving TALISMAN SABRE.

D2: Correct.

COL GABBEDY: Paragraph 25, is that an example of 37 in action? Is that the process whereby, if you felt as a pilot you couldn't fly for any reason, the OC and CO were supportive of you being pulled out of a mission?

D2: Yes, that's probably on a greater scale than if it was someone who voiced their concerns about their state and was removed totally from – well, requested to be removed from the exercise and, without question, was given that opportunity. So that's a bigger example. A smaller example would just be, "I'm not fit to fly tonight", and the common response was, "Okay, it's only training".

COL GABBEDY: Even though that's a bigger example, that was completely accommodated by the OC?

D2: It was.

COL GABBEDY: Would you say that's an example of the safety culture within the Regiment?

D2: I would.

COL GABBEDY: Just one final thing for you. In paragraph 38 of your first statement, you refer to a mission the previous night and you say:

> *The weather was so bad that the mission diverted back to Proserpine.*

D2: Yes. So part of that mission had a separate formation that was crewed by more junior aircrew, and I believe Max was part of that mission.

COL GABBEDY: Okay.

D2: They encountered weather away from the target area that required them to not be able to go to the target area, and they diverted back.

COL GABBEDY: Probably a few self-evident questions arising from that is obviously weather's a factor and if the weather is too bad, the mission structure is changed or aborted?

D2: Yes.

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COL GABBEDY: I assume, arising from that, that the weather on the night of 28 July wasn't so bad that there was a need to radically change or abort the mission?

D2: I would not consider the weather on the night of the incident bad, no, and minor changes to the mission execution.

COL GABBEDY: Okay. Thank you very much.

MS McMURDO: Yes, next application to cross-examine. Thank you.

<CROSS-EXAMINATION BY SQNLDR NICOLSON

SQNLDR NICOLSON: I'm SQNLDR Nicolson. I appear for D10 in these proceedings. So can I just get you to look at the pseudonym list, just to confirm D10?

D2: Yes.

SQNLDR NICOLSON: He was the Officer Commanding at the time, in 22/23?

D2: Yes.

SQNLDR NICOLSON: The questions I just have for you are focused on D10 as the Officer Commanding.

D2: Yes.

SQNLDR NICOLSON: Can I take you to your Inquiry statement? This is the statement signed on 2 August '24. Can I take you to page 24, at the top paragraph, which is paragraph 156?

D2: Yes.

SQNLDR NICOLSON: You talk at the bottom of that paragraph in respect to D10, that you refer to:

> *As part of our daily routine, that we were getting better at assessing hazards and implementing controls.*

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Was that the actions to do what D10 was promulgating as the Officer Commanding?

D2: It was.

SQNLDR NICOLSON: Can you just expand what you mean by "assessing hazards and implementing controls"?

D2: So something that I had not – RMPs, or Risk Management Profiles or Plans, have existed as long as I've been flying, and over the years their prevalence in our operations have become more and more. Something that D10 introduced that I hadn't come across before in orders, we always annotate in the brief what Risk Management Profiles are applicable to a specific sortie, but rarely would it go much further than that.

Everyone was expected to be familiar with those Risk Management Profiles. However, D10 started to implement an extra part of orders where he initially started it and then I took over as the flight lead on quizzing members on controls that were specified in those RMPs that were specific to the day's activities. So what I mean by that is that it became routine for that to occur.

Therefore, people across the Squadron were reading them, being quizzed on their understanding of them, and probably gaining a better understanding how that would then be implemented within a sortie profile.

SQNLDR NICOLSON: Those hazards and implementing controls related to fatigue and fatigue management, or was it a separate issue that we're talking about?

D2: They're separate. They're specific to the Aviation conduct of certain profiles that 6 Avn flies routinely.

SQNLDR NICOLSON: So it's more to do with the Risk Management Profile of the aviation?

D2: Of the flight that we're about to go and conduct.

SQNLDR NICOLSON: Did that include – we've heard something about the mission bubble, the CO's hour – or the OC's hour, sorry.

D2: So that would occur after orders, and that was time set aside for people to go away and understand the mission and prepare the mission, and it was up to the individual whether they – if external distractions came their way,

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whether they would accept those distractions. And you were perfectly within your right to say, "I'm about to go flying. This can wait".

SQNLDR NICOLSON: As part of the OC, was that something that he mandated himself, to make sure that that was ensured to happen?

D2: Well, I don't recall him mandating it, but he ensured – well, I don't recall if it was a conversation between myself and him, but from our time together previously in the Squadron, it was a thing and we were ensuring that mission timelines had that implemented into it.

SQNLDR NICOLSON: So he was making sure that it still was part of the mission process before the pilots and crew would hop into the aircraft?

D2: Yes. Actually, I recall – not the dates but a couple of examples where our orders and our rehearsals crept into the time that we were supposed to be in the aircraft, and he would just slide that aircraft – that timing to the right so that we could have extra time to go and get ready and make sure everyone was ready for the sortie.

SQNLDR NICOLSON: You talked about, this morning, an example of that on the exercise. If I could take you to page 18, paragraph 118? This was an example that you referred to this morning with yourself and D6 mentioning it on the morning of 26 July 2023.

D2: Yes.

SQNLDR NICOLSON: The FMP was brought forward. Do you recall that happening?

D2: Yes.

SQNLDR NICOLSON: And was that, in your view, an example of moving the mission early to the left, to take into account what you believed about the change in terms of the aircrew getting up early?

D2: I made the assumption, because it seemed logical, that if your workforce was up early, that you would bring your mission window forward so that you weren't extending their awake time. So that made sense. But D10 would be best placed to give that information, I guess.

SQNLDR NICOLSON: Can I move on to the topic of deployment orders? Is that standard orders that are in place for deployment before the Aviation crew go to Proserpine?

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D2: It is.

SQNLDR NICOLSON: Were there deployment orders issued and dealt with, prior to leaving Holsworthy for the exercise?

D2: There was.

SQNLDR NICOLSON: Did those deployment orders include, for example, the type of accommodation that you would be staying in?

D2: It did.

SQNLDR NICOLSON: Do you recall that as a result of that, there was some discussion about taking Jet Tents?

D2: Yes, that was my recommendation.

SQNLDR NICOLSON: And did that occur?

D2: It did.

SQNLDR NICOLSON: And the Jet Tents, are they individual tents you can set-up to sleep in?

D2: Yes, it's a single-man tent that has a fly on it that keeps bugs out. I'm pretty sure it comes with a rain fly so individuals, if they elect to, can exit the bigger tent environment and set one of those up external to it, and sleep in that.

SQNLDR NICOLSON: Can I turn to your Inquiry statement, at page 16, the top of page 16?

MS McMURDO: But you didn't sleep in one of those tents?

D2: I set one up on the 28th, but didn't get to sleep in it.

MS McMURDO: So you didn't find it very conducive? I see, right, okay. Were there enough Jet Tents to go around for anyone who wanted to use them, to use them?

D2: So we used to take one per aircrew member; that was in the self-deploy, so self-deploy aircraft flying themselves to the area. That was so that each aircraft, if an aircraft breaks, that that aircraft had enough sleeping – its own sleeping arrangements anywhere in Australia for a night

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or two, while that aircraft was fixed, for those members, if it was in a remote setting.

So my recommendation, because I noticed they weren't part of the load list, was that maybe the corporate knowledge of that had fallen away, and we need to bring that back. But as to was there enough, I think the Q system were holding them, so they would be best to answer that.

MS McMURDO: Did you find these Jet Tents conducive to sleep – more conducive to sleep than being in the big tents with others?

D2: The base is more comfortable than the standard stretcher. We used to use the Jet Tents inside a bigger tent, so that you could hang things on them or put something over it and sort of control your light, and a little bit of privacy I guess, within a tent. But they take up a little bit more space than a standard-issue stretcher. So better for sleeping, and then also just allow you the option to get out of a tent environment if you need to.

MS McMURDO: A bit of privacy, individual space. Yes, okay. Thank you.

SQNLDR NICOLSON: D2, I just want to take you to, D2 , page 16, paragraphs 102 to 103. This is in relation to fatigue issues. You've identified at 101, as I see it, three different stages about individual issues that could be raised in relation to fatigue management. Is that correct, how I understand what you say in paragraph 101?

D2: Correct.

SQNLDR NICOLSON: That is, that prior, it can be raised at the start of the brief each day, with a supervisor?

D2: The expectation is that if a member feels unfit to fly at the commencement of duty or prior, that the member should raise it then. Because when you wake up and you prepare for the day, you should know at that point that you're not fit to conduct duties that day. It's not when you get to orders that you would usually make that assessment.

SQNLDR NICOLSON: And, practically, did that happen in your experience?

D2: The Troop Commander is probably better to ask that. But I don't recall, from myself, that I reached the point on a specific day where I went in and said, "Hey, I could not fly today".

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SQNLDR NICOLSON: The second phase is the start of the set of orders in which the Authorised Officer was present? That's another stage, you'd accept, in terms of raising issues of fatigue?

D2: Mm-hm.

SQNLDR NICOLSON: And the final phase is at the aircraft, with the individual Aircraft Captains.

D2: So, yes, each Aircraft Captain is kind of the last safe, and it's more checking. Fatigue should've been identified by that point. It's more checking that external factors haven't arisen in the time or the course of the day that might be affecting someone or distracting anyone from that. So that FACE check – the fatigue, attitude, complacency, external factors – each Aircraft Captain should be conducting that with their own aircraft brief at the aircraft.

SQNLDR NICOLSON: Could it include, also, a fourth phase in the mission, if someone raises in the aircraft that they're fatigued? They could raise that in the aircraft as well?

D2: Yes, I used it a number of times with my crew on the search.

SQNLDR NICOLSON: You've also talked in your statement, at paragraph 103, that, firstly, you're aware that there's been a change in the process at 6 Aviation since the incident.

D2: Mm-hm.

SQNLDR NICOLSON: And you've opined, in terms of paragraph 103, that it doesn't replace the FACE check, but rather complements it. You'd agree with that?

D2: I'd agree with that.

SQNLDR NICOLSON: I just want to ask just a couple of questions, just about Army Officers, and just bearing in mind in terms of whether you can answer those questions in a public forum. Firstly, there is an Army Officer career stream – whether you're a Captain 1, 2, 3, 4 – that is to do with progression within the Army as an officer. Then, secondly, there's a categorisation process in relation to flying as an Army Officer.

D2: Are you referring to the specialist stream, or aircraft category?

SQNLDR NICOLSON: The aircraft category.

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D2: Yes, they are separate.

SQNLDR NICOLSON: Like, a Category B, Category C, Category D, which we've heard previously from other witnesses. Are you able to comment in terms of with 5 Aviation and 6 Aviation, whether the categories for pilots in the respective 5 Aviation and 6 Aviation are the same, or they're different?

D2: They're different, and - - -

SQNLDR NICOLSON: So - sorry, you go.

D2: Well, it's specific to the mission sets of each Regiment.

SQNLDR NICOLSON: And in terms of the level of training and competency, would a pilot in 6 Aviation be trained better and more competent than a 5 Aviation pilot?

D2: I can't make that call, because I've never operated in 5 Aviation Regiment.

SQNLDR NICOLSON: So in terms of the category of pilot, whether it's a co-pilot or a pilot, it would also require whether there's been the appropriate training? So, for example, the mission set, whether you're a Captain or the co-pilot, it would depend upon level of currency and certification you have?

D2: Experience within 6 Avn, completion of Special Operations Qualification Courses, and the development in accordance with the UTAP.

SQNLDR NICOLSON: Can I just ask just some questions briefly about the tempo before the exercise? You've mentioned in evidence that there was that qualification course, the SOQC that was done, I think two weeks before commencing on Exercise TALISMAN SABRE. Was that a low period of tempo in your view?

D2: The two weeks prior to?

SQNLDR NICOLSON: Yes.

D2: For me, yes. I looked at my logbook and I didn't fly in those two weeks.

SQNLDR NICOLSON: In terms of the training and the exercise phase, is that pre-programmed in a Regiment planning document, like an Excel

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spreadsheet?

D2: It is.

SQNLDR NICOLSON: And does that normally forecast for the following year, for example?

D2: Forecast, and then probably amended as priorities change throughout the year.

SQNLDR NICOLSON: In terms of the ownership of that forecasting, does that rest with 6 Aviation, to your knowledge, or with higher in - - -

D2: Higher level activities are above 6 Aviation Regiment, and are probably directed. Ad hoc activities such as DACC are directed. Then 6 Avn, realistically, only owns the gaps in between, where we try and implement our own training, and that's the training I speak of in terms of Force generation and OPGEN.

SQNLDR NICOLSON: The other topic I want to talk about is snapshot. It's obviously something that occurs annually within 6 Aviation?

D2: Yes.

SQNLDR NICOLSON: And other parts of Aviation. You're aware about the results that came through in terms of the snapshot surveys?

D2: Yes.

SQNLDR NICOLSON: They were forecast by D10 to – and given mission briefings as to the results?

D2: He briefed them, yes.

SQNLDR NICOLSON: And there were, in your eyes, moving forward, steps in place to try and alleviate – to understand what those concerns were within the snapshot survey?

D2: I mean, it appeared from actions of the CO and D10 that they had taken it on board and that they were looking into how they could improve conditions.

SQNLDR NICOLSON: Can I just finally finish on the issue of the mission itself. It's the case there were some mission orders prepared and mission planning?

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D2: Yes.

SQNLDR NICOLSON: And the mission planning came first?

D2: Yes.

SQNLDR NICOLSON: And D1 was involved in that mission planning with others?

D2: Yes.

SQNLDR NICOLSON: It wasn't an individual responsible, but a collective approach in terms of the mission planning?

D2: It's always collective.

SQNLDR NICOLSON: And in terms of the mission orders when they're delivered, they're delivered to all the aircrew?

D2: Correct.

SQNLDR NICOLSON: And at that stage, members of the crew can pipe up and raise issues in relation to the mission orders?

D2: Each crew gets an opportunity, in sequential order, to raise any questions or ambiguities that they have about the orders.

SQNLDR NICOLSON: And do you recall on this mission if weather was an issue, and was that taken into account with the mission orders?

D2: It was discussed in mission orders by D9, who was undergoing some Air Mission Commander training. And then it was discussed again at the Rehearsal of Concept drill; some contingencies, if we saw certain conditions when we were out there, that we were going to put into place.

SQNLDR NICOLSON: And would that dictate to you as the flight lead, if there was any changes that required, whilst on mission - - -

D2: Mm-hm.

SQNLDR NICOLSON: It had already been discussed and raised in the Rehearsal of Concept drill?

D2: Sorry, just, is that - - -

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SQNLDR NICOLSON: Was that raised in the Rehearsal of Concept drill, the mission orders, that if there was a change that occurred on mission, that it was taken into account at that stage?

D2: It was. However, the mission didn't progress to the point where that change was to be effected, but it was briefed en route. Yes.

SQNLDR NICOLSON: Thank you. Thank you.

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

COL THOMPSON: I seek leave to cross-examine.

MS McMURDO: Yes, COL Thompson.

<CROSS-EXAMINATION BY COL THOMPSON

COL THOMPSON: Good afternoon, CAPT D2. COL Thompson, Legal Officer for BRIG Dean Thompson. You'll recall he was the Commander of 16 Aviation Brigade last year.

D2: Mm-hm.

COL THOMPSON: You said this morning – I beg your pardon – yesterday that there was an MRH-90 simulator at Oakey and there was one at Townsville, but none at 6 Aviation Regiment at Holsworthy.

D2: Correct.

COL THOMPSON: Are there a minimum number of hours that pilot aircrew need in a simulator to maintain their currency for flying MRH-90s when they were in operation?

D2: Not to my knowledge.

COL THOMPSON: What about getting your qualifications in the first place at the Aviation School to fly MRH-90s, do you need minimum hours in a simulator?

D2: I don't believe so. A large proponent of the course is conducted in a simulator.

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COL THOMPSON: So correct me if I'm wrong, but do I understand your evidence to be that a simulator at 6 Aviation Regiment would have been nice to have but it's not critical for safety or for currency? Would that be fair to say?

D2: I'd argue it's critical to proficiency in a sense that if it's available and readily accessible, members will likely use it and fly more throughout the year but, in accordance with extant policy, at the time of the incident it was probably not critical.

COL THOMPSON: Thank you. If I can just drill down with you as to what you mean by "currency" and "proficiency"? Can the Tribunal (sic) take it as axiomatic that Defence rotary wing flight crew, Navy or Army, don't need any sort of civilian CASA licence or rating, if I can put it that way?

D2: Yes.

COL THOMPSON: You'd agree with that?

D2: I agree.

COL THOMPSON: I can give you three examples of CASA licence. There's a private pilot's licence, a commercial pilot's licence, and the highest licence of all is an airline transport pilot licence that a Qantas Captain might have or Qantas flight crew might have to fly an A380 around the world.

D2: Okay.

COL THOMPSON: Irrelevant in a military setting, those three licences, aren't they? It's not even nice to have, just irrelevant.

D2: It's not required.

COL THOMPSON: Not required. Same with the ratings, such as Instrument Flight Rating – IFR rating – the CASA equivalent of the Military IFR is irrelevant. There might be parallels and analogies and I might explore that with you in a moment, but Defence has its own IFR teachings and qualifications.

D2: Its own teachings and qualifications which are somewhat aligned to the CASA requirements.

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COL THOMPSON: Would you agree with me that there was no problem at 6 Aviation Regiment with 6 Aviation members maintaining their currencies and proficiencies, generally? You've mentioned it'd be nice to have the simulator. Anything else?

D2: I would say we were able to maintain currency. And proficiency would be at an individual level.

COL THOMPSON: Did you get to visit Oakey and Townsville in the normal course of your duties and jump into a simulator up there from time to time?

D2: It was – I think in my statement I identified five visits across two years to Oakey.

COL THOMPSON: And just to finish off on the sims, they're only for pilot flight crew. The non-pilot flight crew don't use the sims. No need to get into the simulators?

D2: Not in terms of their currency. We were exploring in terms of some emergency handling procedures that require a coordinated communication between the crew that we might put the aircrewman into the IOS box to simulate some sequences – which are above "Official". So we were looking at that, but at the time it was pilots.

COL THOMPSON: I'm sorry, "IOS box", forgive my ignorance but is that part of the simulator?

D2: That's the offboard computer system and operator that operates the simulator and provides a bit of a safety oversight on the simulator's operation.

COL THOMPSON: And I think I made a note yesterday that you'd said that the military simulators generally are better than the civilian simulators that you're using now in your civilian job, generally?

D2: In my experience the fidelity is better.

COL THOMPSON: And finally, on simulators, I take it that when you go into the simulator you don't wear your TopOwl helmet?

D2: You wear the TopOwl configuration, yes.

COL THOMPSON: You do wear it?

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D2: Mm.

COL THOMPSON: In the simulator?

D2: In the simulator, yes.

COL THOMPSON: And so that's part of the simulator experience?

D2: There are two TopOwl – you take your own basic helmet and there are a TopOwl specific to each left and right pilot configured for the left and right pilots. You have to grab the right one. And then you wear them through all of your simulator sequences. Yes.

COL THOMPSON: Now, you gave evidence yesterday about your unfortunate experience with ditching at Jervis Bay on 22 March 2023, and I apologise for invoking that memory for you again, but I can assure you it's relevant. That was purely the result of engine failure that you couldn't anticipate, that no pilot could have anticipated, on the machine that you were flying. You'd agree with that?

D2: Yes.

COL THOMPSON: Nothing to do whatsoever with pilot error?

D2: No.

COL THOMPSON: Have you read the DFSB report in the Jervis Bay ditching on 22 March 2023?

COL STREIT: This is - - -

MS McMURDO: Just a moment. I think we'd better have an adjournment. Should we have an adjournment at this stage?

COL THOMPSON: I'm not going to go into the report, ma'am.

MS McMURDO: All right.

COL THOMPSON: I'm not going to mention the contents of a report.

MS McMURDO: All right.

COL THOMPSON: Are you talking about an adjournment generally for - - -

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MS McMURDO: No. No, I was just concerned about the line of cross-examination. I thought that perhaps you should speak to COL Streit about what you were intending to ask next.

COL THOMPSON: I can assure you it is relevant, and I might take a couple of minutes to - - -

MS McMURDO: But, yes, the DFSB report is not in the public sphere.

COL THOMPSON: Certainly not. Indeed, I haven't read it. I can't find it. Have you read it?

D2: The final report? No, sir.

COL THOMPSON: Have you read an interim report?

D2: I've read the - - -

COL STREIT: Just pause for a second there, thank you, D2.

It's probably best to take a short adjournment.

MS McMURDO: Yes.

COL STREIT: I don't understand what's the relevance of questioning, frankly, anyway. So I'll address that with my learned friend - - -

COL THOMPSON: I can claim that on a - - -

COL STREIT: I'll address that with my learned friend in the adjournment. If it becomes an issue, we can revisit the matter before you.

MS McMURDO: And whilst we have this adjournment, you might find out if it's necessary for us to go into private session to deal with the couple of matters raised by SQNLDR Giles. Thank you.

HEARING ADJOURNED

HEARING RESUMED

MS McMURDO: COL Thompson.

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COL THOMPSON: Ma'am, that adjournment was worthwhile, and thank you for it. I had a productive conversation with my learned friend, Counsel Assisting, so I won't pursue any more questions about DFSB reports for either incident. And, indeed, I've abandoned the other questions that I had for the good D2 . But just one more on fatigue management.

I did make a note of your evidence about your comparison with your civilian job now and flying with 6 Aviation Regiment before, and I don't think you used the word "more relaxed", but you said "less stress, less pressures", words to that effect. Is it fair to say that your job now is more relaxed compared to your former military duties?

D2: I don't know if "relaxed" is the term I would use, but my contact time with my job is less.

COL THOMPSON: And you're not suggesting that your contact job with your military duties should have been the same as now with your civilian job, are you?

D2: Well, no. I go into length in my statement why I think the differences exist, and that some of the essential tasks around safely operating in a military context require a potentially longer day because those tasks are essential for us to go and execute a mission safely.

COL THOMPSON: Thank you. Thank you, ma'am. Nothing further.

MS McMURDO: Thank you. Any re-examination?

LCDR GRACIE: Ma'am, I did have - - -

MS McMURDO: Do you have some after all?

LCDR GRACIE: Just a question after all of those matters.

<CROSS-EXAMINATION BY LCDR GRACIE

LCDR GRACIE: D2 , my name is LCDR Malcolm Gracie. I represent the interests of CAPT Danniel Lyon. Ma'am, there's only one issue to deal with. You haven't been asked anything about the FLIR, the Forward-Looking Infrared system. I just want to ask some questions about that because you talked about Bushman 83, or the third ship in a four-ship formation, formating off 1 and 2. You said that they can create a pseudo-horizon.

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D2: Mm.

LCDR GRACIE: Can you explain how the FLIR works in that scenario?

D2: We'd probably have limited involvement in that scenario.

LCDR GRACIE: Is it something that is utilised on – I don't think it's a classified matter, but is the FLIR utilised by the pilot or co-pilot on a sortie?

D2: It can be for terrain avoidance or it can be for identifying a landing area on a particularly dark night. A pilot can flick between the ANVIS, or the Night-Vision System Image, and the FLIR image, but the pilot – unlikely that they would remain on FLIR the whole time, and I wouldn't fly formation.

LCDR GRACIE: So let me understand this. You flick between the Image Intensifier Tubes, the IITs, and the FLIR.

D2: So there's a button – and I'm sorry, I'm two aircraft deep from the MRH now – so I think it was on the collective, that allowed the flying pilot to not remove their hands and feet from the controls, and flick between the image, yes.

LCDR GRACIE: Was that a pilot or co-pilot choice to do that, or is there some procedure?

D2: It could only be connected to one pilot at a time. The image could be displayed on one of the multi-function displays as well, which we would use during degraded visual environment approaches, and STANMAN talks about what categorises those environments, so approaches to the ground and departures. And the pilot, if they were going to conduct an extended period flying around on FLIR, they would announce, "On FLIR". If it was a momentary look, and then back to an ANVIS image, then they wouldn't announce it.

LCDR GRACIE: So if, just at a theoretical level, you're utilising the FLIR, the co-pilot is still utilising the Image Intensifier Tubes.

D2: Correct.

LCDR GRACIE: Or vice versa?

D2: Correct.

LCDR GRACIE: Was there any prohibition on the pilot utilising FLIR?

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D2: I believe it was still in place at the time that the – you couldn't fly the aircraft to the ground on FLIR. It was to a designated height in a DVE approach. But in forward flight, no.

LCDR GRACIE: When you say "no", there was no prohibition - - -

D2: No prohibition in forward flight.

LCDR GRACIE: I see. And so if you're flying at the seven di's that you mentioned, would the FLIR be able to pick up the first and second aircraft if you were in the third of a formation?

D2: If it was slaved to the pilot's head and the pilot was looking in that direction, then, yes, likely. If it was left on a position where it just goes to the front of the – the 12 o'clock position, or in a turn, it can – it will look into the turn somewhat, and it might not be looking at those two aircraft.

LCDR GRACIE: It's mounted in the nose of the aircraft?

D2: It is.

LCDR GRACIE: Somewhere like that. Okay. And there's the – you've called it the STANMAN, the Standards Manual. Did the Standards Manual permit the pilot to utilise FLIR as a primary pilotage tool?

D2: I don't know if the organisation got that far. I know AATES were doing some testing around that, and I don't know where that got to. I don't think so.

LCDR GRACIE: But was there any restriction placed on the pilot utilising FLIR if the co-pilot stayed on the IITs?

D2: Not to my knowledge, but it would be unconventional in a formation setting to remain on FLIR and fly formation on FLIR.

LCDR GRACIE: And you weren't utilising it on 28 July then?

D2: No, we had it configured so we could use it if we needed to, but the Image Intensifier Tubes, over my time on MRH, the acuity got better when they introduced the – I believe they were L3 tubes, and that reduced the reliance that we used to have on FLIR. When I first operated MRH, there was a much greater reliance on using it.

LCDR GRACIE: But there was no prohibition on the pilot utilising FLIR as a primary pilotage aid?

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D2: I'm not going to speak to the "primary pilotage" term, because that's a very specific term, and I don't know enough about it, I'm sorry.

LCDR GRACIE: Let me put it differently. Did the STANMAN permit the pilot to utilise FLIR if the co-pilot was on IITs? The flying pilot, I mean.

D2: That would usually be the case, yes.

LCDR GRACIE: Are you aware of the MRH-90 Flight Manual that deals with this?

D2: You'd be testing my knowledge.

LCDR GRACIE: The only reason I ask is you say in your evidence that in relation to the Jervis Bay incident, anyway, you were concerned that there was certain decision-making for using more cost-effective implementation solutions.

MS McMURDO: Could you give us the paragraph number and the right statement, please?

LCDR GRACIE: I'm sorry, ma'am.

Paragraph 72 of your addendum statement. And that's a conversation that you had with Commander Avn Command. I just want to pick up what you say in 73, your observation that:

> *It seemed like we were opting for the cost-effective solution and focussing on the likelihood of occurrence, rather than eliminating identified risks.*

And you said there were – in that scenario there was a Service Bulletin issued, of which you were unaware, dealing with the rotor blade issue.

D2: The HP1 turbine issue, yes.

LCDR GRACIE: Can I ask whether or not you were aware of the MRH-90 Manual in relation to its restriction on FLIR – on the use of FLIR?

D2: You'd probably have to point out the specific reference in the manual. I apologise.

LCDR GRACIE: That's okay. Without going to that specific reference, if you assume from me, just for present purposes, that the MRH-90 Flight

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Manual prohibited the use of FLIR by the flying pilot, would that surprise you if it was the case?

D2: I think there would be some context required there. Yes, prohibited use of FLIR by the flying pilot was not how we operated FLIR.

LCDR GRACIE: That's what I'm saying. It would surprise you if you were operating FLIR and the – and if you assume the MRH Flight Manual prohibited the use of FLIR by pilots, that would surprise you?

D2: Yes, we're really dancing around words here, and I don't really know what it says, so I'm sorry.

LCDR GRACIE: You don't know what it says.

D2: Not specifically what you're referring to.

LCDR GRACIE: So you utilise the Standards Manual?

MS McMURDO: Well, he's already said that it's a while ago and he's been flying two different aircraft since then, so I think you're testing his memory. He doesn't recall; I think that's his answer.

D2: I would go and have a look at the Flight Manual, or print it out, and see how big of a document it is. It's enormous.

LCDR GRACIE: I know how big it is. That's all right. Thank you, ma'am. Thank you, D2 .

MS McMURDO: Thank you. All right, I think that's all the applications for leave to cross-examine. Any re-examination?

COL STREIT: No, thank you, Ms McMurdo, and there's no requirement for this witness to go into a private hearing. He can be excused, with thanks for his evidence.

MS McMURDO: Thank you very much, D2 . It's been a pretty gruelling 24 hours for you, recalling some very unhappy events in your life, so we really appreciate the efforts you've made to assist the Inquiry. Thank you, and you're free to go.

D2: Thank you.

<WITNESS WITHDREW

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COL STREIT: If the exhibits could be returned? Thank you. And FLTLT Rose will take the next witness.

FLTLT ROSE: I call the witness known by the pseudonym D6. And, in accordance with your Direction, Ms McMurdo, the visual images to the witness box should still be turned off for this witness.

MS McMURDO: Yes, I'm sure there's no change to that. Thank you.

CLERK OF THE COURT: Take the oath or affirmation?

D6: Affirmation.

<D6, Affirmed

<EXAMINATION-IN-CHIEF BY FLTLT ROSE

FLTLT ROSE: Can you please turn over the A3 document in front of you and confirm if you are the person with the pseudonym of D6?

D6: I am.

FLTLT ROSE: What is your rank?

D6: [redacted].

FLTLT ROSE: And what unit are you currently posted to?

D6: Currently posted to the School of Army Aviation, Oakey.

FLTLT ROSE: Can you please confirm you were sent the following documents prior to appearing today: a section 23 Notice requiring you to appear as a witness?

D6: I was.

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

D6: I was.

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

D6: I was.

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

D6: I was.

FLTLT ROSE: And a Privacy Notice?

D6: Correct.

FLTLT ROSE: Could I have the witness provided with these two documents?

Were you asked to prepare a statement back in November 2023 at the request of the Queensland Central Coroner?

D6: I was.

FLTLT ROSE: And did you prepare that statement with the assistance of Defence lawyers?

D6: I was.

FLTLT ROSE: Can you look at that smaller document on your right? Is that the statement that you prepared, dated 29 November 2023?

D6: Correct.

FLTLT ROSE: Is it 12 pages?

D6: It is.

FLTLT ROSE: And if you turn to the back page, I note that there's a redaction over where your signature would be. But did you sign it, at that time?

D6: I did.

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

D6: No, there are not.

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FLTLT ROSE: As far as you're aware, was this statement provided by Defence to the Queensland Central Coroner on your behalf?

D6: As far as I'm aware, yes.

FLTLT ROSE: I'll refer to this as your "Defence statement" moving forward. If you could turn to the other document in front of you? You also prepared a statement for this Inquiry?

D6: Correct.

FLTLT ROSE: And if you look through that statement, dated 1 August 2024, is that the statement you prepared?

D6: It is.

FLTLT ROSE: And that's 26 pages?

D6: Correct.

FLTLT ROSE: With three annexures?

D6: That is correct.

FLTLT ROSE: Do you wish to make any amendments to that statement.

D6: No, I do not.

FLTLT ROSE: I'll tender both of those statements.

MS McMURDO: The statement for the Coroner, 29 November '23, will be Exhibit 53A, and the statement for the Inquiry, 24 July '24, will be 53B. Thank you.

#EXHIBIT 53A - DEFENCE STATEMENT OF D6 DATED 29/11/23

#EXHIBIT 53B - INQUIRY STATEMENT OF D6 DATED 24/07/24

FLTLT ROSE: And I'll refer to that later statement as the "Inquiry statement".

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D6: Understood.

FLTLT ROSE: Can I please ask you to be mindful of your security obligations. This hearing is at the "Official" level. If I ask you a question, or anyone else asks you a question, that you think would lead you into territory that's "Official: Sensitive" or above, just let us know.

D6: Understood.

FLTLT ROSE: I'll ask you some questions about your background and qualifications, firstly, and this is in relation to your Defence statement, starting at paragraph 4. You joined the Army in 2010?

D6: Correct.

FLTLT ROSE: And you joined as a Specialist Service Officer?

D6: That is correct.

FLTLT ROSE: And you commenced your pilot training soon after?

D6: That is correct.

FLTLT ROSE: Was that on a fixed-wing airframe, your initial pilot training?

D6: Initial training was at BFTS in Tamworth on CT/4 fixed-wing.

FLTLT ROSE: And then you commenced training on the S-70A-9 Black Hawk in 2011?

D6: I first completed training on the Kiowa B 206B-1, gaining my wings in 2011. And then, in 2012, commenced training on the S-70A-9 Black Hawk.

FLTLT ROSE: And then, in 2013, you were posted to 6 Aviation Regiment for the first time, and that was as a Black Hawk pilot?

D6: Correct.

FLTLT ROSE: This is paragraph 14 of your Defence statement. Did you then post to the Army Aviation Training Centre at Oakey in 2017, to train as a Qualified Flying Instructor?

D6: Correct.

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FLTLT ROSE: And did you instruct on the Kiowa at that stage?

D6: I instructed on the Kiowa for the remainder of 2017 and half of 2018.

FLTLT ROSE: Did you then turn to a different airframe whilst you were still doing your instructor training?

D6: No. I was a completed instructor, and instructed for about 12 months on the Kiowa, before commencing training on the MRH-90 in July 2018.

FLTLT ROSE: So when you were converting to the MRH-90, that was purely as a pilot at that point, not as an instructor?

D6: Correct. Initially as a pilot. I flew that aircraft for approximately six months before completing the MRH-90 Standardisation and Secure Fire.

FLTLT ROSE: And did you do that sequentially? As soon as you finished the conversion as a pilot, you then did the Standardisation for the Instructor on the MRH-90?

D6: No, I flew the aircraft within the Operation Support Troop at the School of Army Aviation for approximately three months prior to then commencing the QFI Standardisation.

FLTLT ROSE: And then, in January 2021, you posted to 6 Aviation Regiment for the second time. That was as a Squadron Qualified Flying Instructor?

D6: Correct. I was posted as one of the Troop QFIs, initially. And then, by the end of the year, I was the Squadron QFI.

FLTLT ROSE: Now, you're a B CAT pilot on the MRH-90?

D6: Correct.

FLTLT ROSE: And you're B CAT QFI?

D6: Correct.

FLTLT ROSE: And is that also linked to a particular airframe, or is that, in a general sense, you're a B CAT QFI?

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D6: It's in a general sense, but you have to qualify on the aircraft type to gain/regain that qualification. So I was a B CAT QFI on Kiowa. Initially, became a C CAT Instructor on MRH-90 when I completed my Standardisation, and then eventually did a re-categorisation and became a B CAT Instructor again.

FLTLT ROSE: And you're also an Instrument Rating Assessor?

D6: Correct.

FLTLT ROSE: And an Authorising Officer?

D6: Under the Army – the 6 Avn SI, I was an Authorising Officer. Correct.

FLTLT ROSE: And those are qualifications you gained whilst you were in 6 Aviation Regiment?

D6: Correct.

FLTLT ROSE: So as well as being the Squadron Qualified Flying Instructor at 6 AVN, you were also the Squadron Safety Officer from 2021 to 2023?

D6: Correct.

FLTLT ROSE: So that was an additional duty?

D6: It was, yes.

FLTLT ROSE: Or secondary duty?

D6: Correct.

FLTLT ROSE: You went on leave from the Army shortly after TALISMAN SABRE in 2023?

D6: That is correct. Roughly, August.

FLTLT ROSE: And that's because you'd been offered a job in a civilian role outside of the Army just prior to the incident on TALISMAN SABRE?

D6: Three days prior, correct.

FLTLT ROSE: And you commenced that civilian employment in September 2023?

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D6: I did. Yes.

FLTLT ROSE: Now, I won't mention the name of the particular company that you work for, because that would be identifying information.

D6: Thank you.

FLTLT ROSE: But suffice to say you are flying helicopters in that civilian role?

D6: Correct.

FLTLT ROSE: And you work for that civilian employer full-time, currently?

D6: That is correct.

FLTLT ROSE: You remain on long service leave from the Army?

D6: Correct.

FLTLT ROSE: Is it your intention that you'll discharge from the full-time Army in about January 2025?

D6: That is correct.

FLTLT ROSE: Will you then transfer to the Reserves?

D6: Yes, that is my intent.

FLTLT ROSE: So I take it then that even though you're posted officially to the School of Army Aviation, you're not currently doing any work for them.

D6: That is correct.

FLTLT ROSE: You fly AgustaWestland 139 helicopter in your civilian employment?

D6: That is correct.

FLTLT ROSE: Do you have any secondary duties in your current role?

D6: No, I do not.

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FLTLT ROSE: In your Inquiry statement, at paragraph 7, you set out that you were flying about 250 to 300 hours per year in your current role.

D6: That's correct. So I've been in that role since September. I currently have 255 hours on the 139, so just short of 12 months.

FLTLT ROSE: That is slightly less than what you were flying in 6 Aviation Regiment, which you state was about 300 to 350 hours per year.

D6: Correct.

FLTLT ROSE: Plus you had your additional secondary duty on top of that as a Safety Officer.

D6: Correct.

FLTLT ROSE: Is it the case that your current roster is four days on, four days off?

D6: That is correct.

FLTLT ROSE: At paragraph 11 of your Defence statement, you set out the flying hours you obtained on the MRH-90 – paragraph 11. Is it the case that it's 1368.4 total flying hours on the MRH-90?

D6: Up to 27 July, correct.

FLTLT ROSE: Did you fly a few hours, including the sortie, on 28 July?

D6: Correct, approximately six and a half hours.

FLTLT ROSE: Nothing after that, I take it?

D6: No.

FLTLT ROSE: Does that total hours include both the aircraft and sim?

D6: It does, yes.

FLTLT ROSE: And about 454 of those hours were flown at night?

D6: Correct.

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FLTLT ROSE: In your Inquiry statement, you then go into a little bit more detail at paragraph 12 and set out that of those night hours, 370.5 hours were on TopOwl.

D6: That is correct. To clarify, all of my hours on the MRH are on TopOwl. Those hours are using the night-vision IITs as part of the TopOwl.

FLTLT ROSE: Just to round-off your hours on Black Hawk, if you look at your Defence statement at paragraph 11, it sets out 955.7 total flying hours on Black Hawk.

D6: Correct, including the simulator.

FLTLT ROSE: Then 658.8 total hours on Kiowa.

D6: Correct.

FLTLT ROSE: So if I've done my maths correctly, you've got a total of 3111.1 hours on military aircraft.

D6: Correct. And what's not listed there are approximately two hours on an ARH Tiger, and approximately two hours on a Chinook, but the total hours there are correct.

FLTLT ROSE: Then obviously your civilian hours?

D6: On top of that, correct.

FLTLT ROSE: At paragraph 12 of your Inquiry statement you said approximately 600 hours flying in formation across all of the various airframes that you've flown in Army?

D6: As an estimation, yes.

FLTLT ROSE: I want to ask you some specific questions about flying the MRH-90. So I take it you are a Special Operations Captain on the MRH-90?

D6: I was, yes.

FLTLT ROSE: You're also a Special Operations Flying Instructor?

D6: I was, yes.

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FLTLT ROSE: As a QFI, you would typically sit on the left-hand side of the MRH-90 on a training sortie?

D6: Typically, in any helicopter, the QFI will sit on the left-hand seat for a standard training sortie. However, if I was acting as a Special Operations Instructor, I would pick the seat that was appropriate to the task I was doing, so it could be left or right. But predominantly, an instructor sits in the left-hand seat.

FLTLT ROSE: As an Aircraft Captain, you also have the discretion when you're flying in that role to sit on whichever side you wish?

D6: Correct.

FLTLT ROSE: Now, at paragraph 15 of your Inquiry statement, you set out the tasks of an Aircraft Captain during a sortie – the typical tasks – and then the typical tasks of a co-pilot.

D6: In a generic sortie or mission sense, yes.

FLTLT ROSE: So not Special Operations specific?

D6: Correct.

FLTLT ROSE: If we're keeping just in the realm of generalised sorties, can you describe what the typical tasks are of the Aircraft Captain in that situation?

D6: Typically, an Aircraft Captain would be running, I guess, the procedures or the mission flow of the aircraft. So maintaining situational awareness on where the aircraft is, based on whatever sortie it's going to be doing; where it is in relation to other aircraft or any other parameters on the sortie that is being conducted; managing checklists; managing configuration of the aircraft.

FLTLT ROSE: Is this when, then, in the non-flying role?

D6: Correct, typically.

FLTLT ROSE: If they are in the flying pilot role, then it would be the co-pilot that would be taking on those tasks?

D6: Correct, generally under either the supervision or direction of the Aircraft Captain. So the Aircraft Captain could be the flying pilot and ask the non-flying pilot to do something, but – yes.

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FLTLT ROSE: Is it the case that the Aircraft Captain, no matter if they're the flying pilot or not, still is the point of contact for comms?

D6: Not necessarily. The co-pilot can be the person who is either, like, running radios or making contact with ATC, other elements of the sortie. But again, generally, that would be either supervised or directed by an Aircraft Captain.

FLTLT ROSE: Is it the case that even if the Aircraft Captain was the flying pilot, the Aircraft Captain, would still be making the essential decisions that needed to be made in the cockpit about change of route or emergency handling?

D6: Typically, yes.

FLTLT ROSE: When you described the differences then, is it the reason why the flying pilot, who is obviously focused on the flying – but is the Aircraft Captain in a better position, if they're a non-flying pilot, to have situational awareness?

D6: Depends on the context of the sortie and where they are in the sortie. Sometimes you can gain better situational awareness as the Aircraft Captain as the flying pilot, and sometimes you can gain better situational awareness as the Aircraft Captain as the non-flying pilot, depending on what the aircraft is doing at that particular time.

FLTLT ROSE: The Inquiry has heard some evidence about the systems that are on the MRH-90, including the automation systems. At paragraph 16 of your Inquiry statement you state that you would probably not engage the autopilot when flying in formation unless you were overwater, and even then you'd probably only engage the RADALT height as a collective mode.

D6: So the context, when you're talking about the autopilot, I would be talking about the upper modes with the autopilot. So whatever system is engaged is completely autonomous or controlled by the parameters you set in the autopilot.

If I was in formation, I would generally, if I'm not the flight lead, be what I would refer to as hand flying the aircraft, i.e., the aircraft is not being asked to maintain a speed by me, as in the autopilot is holding it, or the heading, or the route of the aircraft, or the height. The reason why I would be manually flying in that sense would be because I'm reacting to finite changes of the aircraft ahead of me in the formation.

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If I was the formation lead aircraft, I would be using the automation to try and keep that aircraft as stable as possible within the parameters of the autopilot being able to hold whatever I've asked it to. The reason why I would engage RADALT if I was overwater, it's an SI requirement below 500 feet; however, it's also a safety mechanism. But I can override that if I needed to make power changes.

Then on the collective, there's a trigger. Wherever I engage that trigger, the autopilot function will still be in the background, still be engaged. But the moment I release the trigger, it will recapture the parameters as at the point that I've released that trigger. So the autopilot could still be engaged, but I could sort of override it when I needed to.

Like I said, I would only typically engage the RADALT overwater because I would want that safety net if I don't want the aircraft to descend uncommanded, I guess. I wouldn't necessarily do it overland, particularly at the RADALT height because it's reacting to undulating terrain.

FLTLT ROSE: Do you set that RADALT prior to lifting?

D6: No. So the RADALT can only be engaged once you're in flight, reference the height that you're asking it to keep.

FLTLT ROSE: And how soon after lifting do you actually go through that particular process of setting the RADALT?

D6: So the RADALT hold that we're talking about in this, I would set once I'm at the height that I would like the aircraft to try and maintain. So, for example, 500 feet overwater. If I wanted, and I was expecting the aircraft and the formation to be at 500 feet, I would engage the RADALT hold and it would be holding that 500 feet while we're at those parameters.

FLTLT ROSE: Is that the case, even if you obtained the desired height whilst you were still over terrain, but expecting to fly overwater at some point in the sortie?

D6: It's complicated. So if I set the RADALT hold over terrain, say we're at 500 feet RADALT, the aircraft will try and hold 500 feet above the terrain. If I then fly the aircraft forward and I go over rising terrain, say the terrain rises 100 feet in a mile for example, the aircraft will continue to climb. But I may not want the aircraft to climb that 100 feet because I want to maybe maintain 500 foot above sea level, for example. So I typically would engage the RADALT as I crossed over the coastline, overwater, to maintain that parameter as I was overwater.

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FLTLT ROSE: So when you maintain the RADALT, is it not below? So we're talking about 500 feet in this scenario. So if you pushed the trigger, you've set the RADALT at 500 feet overwater, is the RADALT then automatically giving you a warning once you go below that?

D6: That's a separate function. So that is either the MDA, or decision height setting which references a RADALT height. It's a completely separate system within the aircraft.

FLTLT ROSE: And when do you set that decision height?

D6: I would set that as I'm starting the aircraft, prior to the mission, based on what height I was expected to be authorised not below on that sortie. I may change it during the sortie because I may be authorised to descend lower than a particular height at some point during a sortie. For example, I might only be able to transit at 200 feet somewhere, but then I might be authorised to fly lower within a low-flying area. So as I transition to that area, I would reset the RADALT decision height.

FLTLT ROSE: Are you simultaneously resetting the RADALT and the RADALT decision height at the same time, or in close proximity to each other?

D6: The RADALT decision height works independently to the RADALT hold. I would be setting the RADALT hold as I wanted the aircraft to descend. There's multiple ways I can command that. So I can ask it to hold my current height; I can ask it to descend to a preset height. Say if I wanted to descend lower, from 500 feet to 200 feet, I could ask the autopilot to do that, or I could manually override it using our collective trigger, descend the aircraft manually to that height, and release the trigger and it would re-engage at that new reference, being the 200 feet.

FLTLT ROSE: When you're saying you ask the controls to do certain things, it's all buttons on the collective or the cyclic that you're pushing?

D6: You can do it using the – there's a button on the collective for the RADALT height. You can also set a height. There is a panel in the centre of the MRH called the LCP, which was the next event for the autopilot. So I could set a RADALT height. If I wanted to descend to a height later on, I could set that as the next event, and when I got to the point where I wanted the aircraft to descend, I could then press that button and it would descend.

FLTLT ROSE: Is this purely if you're the flying pilot, that you're adjusting these RADALT holds and decision heights?

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D6: If you're adjusting the RADALT height, or any of the other upper modes in the aircraft, using any of the buttons on either the collective or the cyclic, the flying pilot is doing it. The flying pilot typically would be the one who is making the decision about when they want the aircraft to descend. However, I could also, as the flying pilot, ask the non-flying pilot to set the height or parameter speed, if it was speed that was being held, based on that LCP in the centre of the aircraft, and ask the non-flying pilot to engage that mode.

But it was generally done as, like, a three-way sort of identification that the right thing was set, and someone had called for that height to be selected prior to the non-flying pilot actually engaging that parameter.

FLTLT ROSE: So I understand that, there is a RADALT hold in both seats, one for the flying pilot and one for the non-flying pilot, and then there's a centre console button. So, in effect, there's three ways to change the RADALT hold?

D6: Correct. There would be three ways to change any of the autopilot upper mode functions. So each pilot has a way of manipulating it if they're the flying pilot. And then there is the centre console, where you can set; and there was also two smaller panels next to each pilot, where they could sort of adjust the active parameter at the same time as, well, without touching the controls.

FLTLT ROSE: So how does the airframe know which one of those three different controls to follow?

D6: I don't think the aircraft would distinguish between, like, one side being the command side or not. I think it would just be whatever the last thing has been asked by either – any of those controls. That's why there's procedures in the aircraft as to when and where and who set what parameters were being asked of the aircraft.

FLTLT ROSE: So it wouldn't be uncommon to have the left-hand pilot's RADALT hold be different to the right-hand pilot's RADALT hold, because it's the person operating it who clicks it last that the airframe follows?

D6: There's a point of distinction: the RADALT hold is the RADALT hold. There is only one for the aircraft. It's an autopilot function, so it is whatever is set or selected of it. The other pilot could potentially change the parameter that's set, but there is no multiple sides with the aircraft; it's just one autopilot.

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I think what you're referring to is the decision height as part of the RADALT indication system. They are independent of each other. So on my side of the aircraft, whatever seat I was sitting in, I could set my decision height to whatever I want, and the other pilot could set their decision height to whatever they've deemed appropriate. And there'd be two separate alerts that would come up on the display when that height was reached in the aircraft.

FLTLT ROSE: Is it part of your pre-flight checks to discuss what you're setting your decision heights at?

D6: Yes. Typically, the pilot will announce when they're setting it, what they're setting it to.

FLTLT ROSE: And generally, would you set them to the same heights, or there are context-specific situations where you might want them to be at different heights?

D6: There are context-specific situations where you could set separate things; however, generally, you'll announce it so that both pilots are aware of what is set.

AVM HARLAND: If you change them in flight because you're changing the parameters or you're going to be cruising at a different altitude, do you announce that to the other crew?

D6: Yes, typically you would. So, for example, if I had my RADALT height set – RADALT decision height set at, say, 500 feet because I didn't want to descend below 500 feet without getting a warning, and then I wanted to set it to something lower because I was probably going to descend through that 500 feet, I would announce that my DH is now – or my MDA is now set to whatever the new parameter was.

AVM HARLAND: What does "MDA" stand for?

D6: Minimum Decision Altitude. So the system is designed to give the pilot a warning, either based on RADALT – so it would be decision height – or MDA, which is a barometric setting actually designed for the bottom end of an instrument approach, to give you a warning that you're approaching a given height in a procedure.

AVM HARLAND: Effectively, it's the same mechanism, it's just a different name, depending on what phase of flight you're in; is that correct?

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D6: Yes, correct, and based on what it's referencing. So, yes, you can set the MDA to 1000 foot, or you could, like, change it to DH. So it was only one or the other. Change it to DH and it would be, you know, referencing the RADALT height as opposed to the barometric altitude of the aircraft. But either way, it was a decision height warning based on what the pilot had set.

AVM HARLAND: Okay, thank you.

FLTLT ROSE: Would there be ever any reason to set the decision height at zero feet?

D6: No, I wouldn't think so, unless you didn't want a warning to appear at all, so you didn't have anything more valid to set.

FLTLT ROSE: You mentioned the barometric measure just before. Is that a BARALT, another term for it?

D6: Correct, or altimeter. Either way, yes.

FLTLT ROSE: Was there a requirement to have the BARALT switched on or engaged overwater?

D6: So there was a requirement for you to have an upper mode established below 500 feet. So an upper mode in the collective sense could be either barometric hold or altitude hold, which was referred to in the MRH or RADALT. It didn't matter which one. There was a requirement in SIs for you to set either a RADALT or BARALT setting, alt setting.

FLTLT ROSE: So it's one or the other, or you could, in fact, have both?

D6: You can't have both. The autopilot will do one or the other, but it was a requirement to have either one set.

FLTLT ROSE: And you were talking before about the decision height being a warning. Was it that happens if the aircraft starts to descend below the RADALT or BARALT pre-determined height, or the one that you've just selected it moves to?

D6: Warning height? So there would be an indication on the pilot's Primary Flight Display in the centre of the AI, or just to the lower section of the AI, and there'd be an audible tone as well, or an audible message. I can't – it's been about a year or so since I've flown the aircraft so I can't remember exactly what the message is, but there was an audible message as well.

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FLTLT ROSE: Do you think the aircrewman in the back would be able to hear that audible message?

D6: It's my recollection that they didn't get those audible warnings in the back. Like, they weren't – the way the aircraft's ICS worked, they didn't get a lot of the audible warnings that the front seat pilots got.

MS McMURDO: So the warning light, was that a flashing light – a flashing red light, or - - -

D6: So if you had decision height set – so referencing the RADALT height – it would flash "DH". If you had a barometric height set – so referencing the altimeter – it would flash "MDA".

MS McMURDO: In red?

D6: I believe it was yellow and black.

MS McMURDO: Okay. Thank you.

AVM HARLAND: Did the TopOwl Head-Up Display have any indicator on it when you went through that altitude?

D6: I think it did; I just can't recall a hundred per cent whether it did or not. I would have to reference the STANMAN and have a look again. Again, it's been over a year since I've flown the aircraft.

AVM HARLAND: Yes, understood. Thank you.

D6: And, actually, can I just change that? I'm reasonably certain it did have – it flashed "DH" or "MDA" as well.

FLTLT ROSE: Did you train pilots and, in fact, effect this process yourself, however, to reference the Primary Flight Display for any warnings and emergencies rather than TopOwl?

D6: Any warnings and emergencies were typically spotted by the pilots by either a warning or caution panel light illuminating, which is directly in front of the pilot's eyeline, just slightly lower above the Primary Flight Display, and they were either coloured yellow or red. They were quite attention-grabbing.

In the TopOwl, you would also get either a warning or caution flash, but it was just flashing green along with the rest of the symbology. So it was

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typical that a pilot would be alerted to a warning or a caution based on that warning or caution panel illuminating outside of the TopOwl.

FLTLT ROSE: At paragraph 19 of your Inquiry statement you state that it's generally the non-flying pilot's role to respond to any warnings or emergencies that occur while in the air, so that the flying pilot can concentrate on keeping the aircraft flight path safe?

D6: Correct.

FLTLT ROSE: And that's regardless of who was the Aircraft Captain or the co-pilot at that point, I take it.

D6: Correct.

FLTLT ROSE: So if I was presented with a warning or a caution, the primary responsibility within the aircraft is to keep the flight path safe.

D6: If I was the flying pilot, that would be what I'd be concentrating on first, and the non-flying pilot would announce whatever it was – the warning or caution was that appeared, and the Aircraft Captain could make a decision about who then subsequently dealt with that emergency and who became the flying pilot and non-flying pilot from that point.

FLTLT ROSE: And at paragraph 21, you state that it was up to the Aircraft Captain to decide whether or not to terminate the sortie if an issue arose within the aircraft that couldn't be resolved in the cockpit?

D6: Yes, correct. Ultimately, the Aircraft Captain has the responsibility for determining whether the aircraft is still able to complete the sortie that you're conducting.

FLTLT ROSE: And is that the same situation if you're flying in formation, or is it in fact the AMC that decides whether or not a sortie is terminated at that point?

D6: In a formation, the Aircraft Captain would generally let the AMC know. So I think, again, the context of the emergency would probably dictate what decision it would be. I've been in formations where, like, myself, as the Aircraft Captain, has said that, "I cannot continue based on what it is I've just been presented, and I'm letting the AMC know so they can then deconflict how that plays out within the formation, and how I'm to depart the formation". And there's been other times where I've let the AMC know that I have had a warning or a caution, and that I would be happy to continue as the Aircraft Captain but, ultimately, it would be their

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decision as to whether they were happy for you to remain in the formation based on whatever was going on in the aircraft.

FLTLT ROSE: So I take it from your evidence that if you are in a situation where you cannot continue in the formation as the Aircraft Captain, do you have to wait for the AMC to tell you to deconflict by climbing or going sideways, or whatever it is? Or can you just make that decision because it's an emergency?

D6: I think it's context-driven around what the emergency would be.

FLTLT ROSE: But if needs must, you could climb to separate yourself from the other aircraft if it was needed to occur instantaneously?

D6: Yes. Potentially, yes. If I needed to separate from the formation, I would do that in the most appropriate way based on where I was in the formation, so I could deal with the emergency that I was being presented without worry about conflict of where the other aircraft are.

FLTLT ROSE: And by separating – obviously context-dependent – but you could go up, down, left, or right to deconflict?

D6: Correct. Dependent on where I would be in the formation, and what the formation was doing at the time, but essentially separating my flight path from the formation.

FLTLT ROSE: At paragraph 18 you state that at least one hard or soft failure would occur in the MRH-90 every time you flew. But at paragraph 20 – that was earlier on in your experience flying the MRH-90 – but by 2023, this is reduced to about once every 10 sorties.

D6: So what I stated in that was that in the first six to nine months of flying the aircraft, I was presented with some sort of hard or soft failure almost every single sortie. But, yes, correct. By 2023, the serviceability of the aircraft and the likelihood of us getting either a hard or soft failure had significantly reduced, and I would estimate approximately one in every 10 sorties would have something that you had to either work through or try and deal with. Most of those issues, by 2023, would occur during the aircraft start and was less likely to occur airborne.

FLTLT ROSE: And obviously it's dependent on what the issue is that has arisen, but sometimes you could rectify that fault easily by turning off the engine and starting again?

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D6: Yes, correct. We – sometimes you might be able to restart the system. A lot of the times it would require us to completely depower and repower the aircraft similar to turning a phone or a computer off and on again.

FLTLT ROSE: And other times it required you to switch to a spare because maintenance needed to look at the issue?

D6: Correct. So sometimes, in the context of whatever the mission was and your timings, you may not have the time to try and rectify it. The issue might be resolvable, but it might just take too long based on the other aircraft that you're flying with and the timeline for whatever the sortie was, so you would go to the spare. And then other times it might be that the problem can't be rectified, so you would have to move to the spare or not fly; either/or.

FLTLT ROSE: And if it happened mid-flight, I take it from your earlier evidence, it would be decisions that the pilots have to make whether it's a fault that you could live with in terms of fly-through or you had to terminate the sortie and return back?

D6: Correct. And the pilot is making that decision based on what the checklist is essentially dictating. So given whatever the situation is, it's likely the checklist would have a conclusion. So it might say, "Land as soon as possible", which has a definition that I have to comply with. Or it may say, "Check mission feasibility", or "Continue flight". If it said, "Continue flight", I could still make the assessment whether I was happy to continue with it or not, based on the context of the sortie. "Check mission feasibility" was something similar.

FLTLT ROSE: And those checklists are within a larger manual that sits within the cockpit?

D6: The checklists were on our electronic flight bag books, and then physically held by the pilots, yes.

FLTLT ROSE: Is this on an electronic iPad that's attached to your knee?

D6: Correct. I think it was personal preference what the pilots referred to.

FLTLT ROSE: So it could be hard copy or the electronic document?

D6: Correct.

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FLTLT ROSE: Electronic device. With the failures you've just described, did you think that it made the MRH-90 more unsafe to fly than other aircraft you've flown?

D6: No, I do not. I think the aircraft was ultimately a safe aircraft. What I do believe it was – or what it created, I guess, was a higher workload in some circumstances; particularly, when you were having to deal with one of these sort of things to work through.

FLTLT ROSE: So when you say "higher workload", could you also say that it increased the stress for the pilots in having to resolve these faults?

D6: It could do. Again, the context for what, I guess, you are having to deal with. However, it definitely increased the workload when you were having to work through one of these things, and could also reduce the situational awareness of the crew because they're having to deal with whatever that situation was they've been presented with.

FLTLT ROSE: And is it the case that if you're looking at the hard copy or the iPad, you're eyes in?

D6: Correct.

FLTLT ROSE: And so you would announce that you're eyes in?

D6: By night, you absolutely would announce that you were eyes in, so that everyone was aware that your NVD scan was inside. By day, most pilots would typically make the same call, so everyone was aware, although I can't remember whether it was a mandated call or not. I'm certain it was definitely mandated for night flying.

FLTLT ROSE: Is it the case that you couldn't have both pilots with eyes in when you were night flying? Is that part of the policy that you followed?

D6: Correct. And typically, like, day flying as well, it's less than ideal to have both pilots eyes inside. But depending on what the aircraft was doing at the time, I guess, is the - - -

FLTLT ROSE: So there could have been an occasion where you were both eyes in out of necessity?

D6: Yes, potentially.

FLTLT ROSE: Would the aircrewman be able to see that or hear that over the comms, that you were both eyes in?

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D6: Yes, I'd assume that they'd be able to tell either by what they're talking about or whether it was announced or not. But again, to clarify, in night flying, one of the pilots had to remain eyes out to maintain, like, the safe flight of the aircraft. The context of what I meant by both pilots could have their eyes inside is instrument flying, because the aircraft is already flying in cloud, so you don't need a visual scan. That could happen by day or night. But if you're visually flying with reference to the ground or water, one of the pilots had to have their eyes outside, maintaining the safe flight path of the aircraft.

FLTLT ROSE: At paragraph 23 you set out how you would take controls from a flying pilot using the standard handover/takeover procedure. Can you briefly describe how that would occur?

D6: So if I was the non-flying pilot and I wanted to take over control as the flying pilot, I would say, "Taking over". The pilot who was flying – and I would place my hands on the controls ready to take over. The person who was the flying pilot would then say, "Handing over", but they would retain control of the aircraft until they've heard me then say, as the third step, "I have control". They would then remove their hands from the controls. It's a three-way sort of takeover so that the aircraft's positive control is maintained throughout.

FLTLT ROSE: Where do the hands go when they're not on the controls?

D6: Typically, like, on your lap. Like, you could have it on the centre console. There are handholds in the aircraft anywhere you feel comfortable, I guess, if you're doing something with the aircraft, yes.

FLTLT ROSE: And can you see peripherally out of your vision that the hands are off the controls?

D6: Depends on if you have the peripheral vision or not. If night flying, it was a lot harder to see whether their hands were off the controls or not. That's why you had the three-way part of the handover/takeover and you didn't do anything until you heard them say, "I have control". Then you would release your hands from the controls.

FLTLT ROSE: Have you ever been in an experience where they haven't actually released controls, and does it feel as if you're fighting them for control?

D6: I have, yes. With a student, I have definitely experienced that before, and you have to prompt to – in that experience, I had to prompt the student

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to take their hands off the controls, and I just did that by reaffirming that I had control.

FLTLT ROSE: And what does it feel like when you've, essentially, got two people trying to fly the plane at once?

D6: It feels like you have a resistance through the controls.

FLTLT ROSE: When taking control, could that be the co-pilot taking control flying from the Aircraft Captain as well?

D6: Yes, absolutely. I could prompt that by either – asking him to take over, in which case the three-way handover/takeover then works the exact same way but in opposite.

FLTLT ROSE: And what if the flying pilot started to get worried and actually didn't want to be flying at that point anymore? What's the procedure then?

D6: Again, I could say – I could announce why I didn't want to be flying and then prompt the other pilot, the non-flying pilot, to take over. Again, I guess the context of why I wanted to hand over, so I might want to do something with the system of the aircraft or I might want to bring my eyes inside to deal with something. So I would typically announce why I wanted to do that and then that I was handing over.

FLTLT ROSE: And then they would say, "Taking over".

D6: Correct. And then they would say, "I have control", and I would relinquish control.

FLTLT ROSE: And how often would you do this per flight, this handing over/taking over between flying and non-flying pilots?

D6: It's impossible to say. It depends on the sortie, but it would happen multiple, multiple times throughout the sortie.

FLTLT ROSE: And is there a different handover/takeover procedure in an emergency?

D6: Again, I think the context is important. There is an intervention technique that I could use as an instructor to take over, but typically it is still done through the handover and the takeover.

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FLTLT ROSE: So when you say "as an instructor", is it the case that only an instructor is trained how to do intervention training?

D6: Within the 6 Avn UTAP in 2022/2023, we had begun showing pilots that were upgrading to either NVD Captain, and then on the pathway to SO Captain, intervention techniques, so that while they were supervising junior aircrew, they had the ability to prompt for a correction and then take over if they had to, being the intervention.

FLTLT ROSE: And when you say "prompt", is it the case that you would give the flying pilot an opportunity to correct whatever the error or issue was?

D6: Correct. If time permitted, you would do that. So part of that was trying to identify that something might be happening that you're unhappy with. So, for example, on an approach, if the airspeed was too slow, I might prompt, "Airspeed". I might prompt it again, if I had time. If not, I would then say, "Taking over. I have control". And I would expect them to say, "Handing over", as part of the three-way handover/takeover.

FLTLT ROSE: The Inquiry understands that CAPT Lyon completed his SO Captain upgrade in late 2022.

D6: Correct.

FLTLT ROSE: So he would not have received the intervention training at that time?

D6: Not as part of the SO Captain upgrade. However, we had incorporated it as part of the 6 Avn UTAP, and he had completed the sortie for the intervention training.

FLTLT ROSE: Do you recall when he would have received that training?

D6: It would have been at the start of 2023. I recall that it was in and around the SOQC that was conducted in June.

FLTLT ROSE: So do I understand from your evidence then that LT Nugent would not have received this intervention training?

D6: Correct. The intervention training was designed at people who were going to be flying as the Aircraft Captain and typically authorised as the Aircraft Captain. So it was aimed at people who were upgrading to NVD Captaincy and SO Captaincy. Because LT Nugent was more junior aircrew

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who has just posted into the unit, he probably would not have been receiving that along the UTAP pathway for maybe a year or more.

FLTLT ROSE: So would that mean that if there was an emergency in the cockpit and the co-pilot was the non-flying pilot, was there any scope for the co-pilot to take over controls?

D6: Yes, there was scope, as in through the handover/takeover procedure. He would not have been shown how to do the prompting for the intervention on the parameters. However, typically, a non-flying pilot who was monitoring any situation, if they saw something that they thought was not correct, I would expect that they would probably prompt for that parameter.

FLTLT ROSE: As common sense.

D6: Correct.

FLTLT ROSE: Rather than actually being trained to do so.

D6: Yes. And also through, like, osmosis through our instructors doing that through their entire training career. That would be something that they would have experienced probably at multiple points on multiple aircrafts, so it's something that wouldn't be foreign to them.

FLTLT ROSE: At paragraph 27 of your Inquiry statement you set out that in 2023 there would have been about two or three opportunities for pilots to fly a sortie with the following profile in formation at night, at low level, and on NVDs?

D6: That's correct.

FLTLT ROSE: So does that include sorties on TALISMAN SABRE, or was that – they would have had two or three opportunities prior to TALISMAN SABRE?

D6: That includes TALISMAN SABRE. One of the sorties prior to 28 July was also low-level overwater.

FLTLT ROSE: So I take it from that, it wasn't so common to fly a mission with that profile in 6 Avn, with all of those particular features?

D6: It wasn't as common in formation. But the aircraft – sorry, the pilots and aircrew would have had multiple times to fly overwater low level as single aircraft – like, more times than that throughout the year. But, yes, specifically overwater, at night, in formation, would be less frequent.

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FLTLT ROSE: Would it be less frequent for co-pilots to fly a mission with that profile than, say, Aircraft Captains?

D6: It's hard to say.

AVM HARLAND: So flying formation, low level, and at night, overwater, on NVDs, is that a difficult skill set to master?

D6: I think it's just specific, like there are specific things about being overwater, particularly at night on NVDs. So, for example, the setting of the RADALT as a safety function being one of the things we've already spoken about. Flying low level at night on NVDs, in general, is something that is difficult. Being overwater is just there are additional things to be aware of, I guess. So the thing for me is the low contrast potentially overwater being something that is different as to flying low level at night overland, specifically.

AVM HARLAND: So given that you've said that you will fly those sort of profiles two to three times a year, would you feel proficient and comfortable when you were doing those night sorties?

D6: Whenever I flew at night overwater on NVDs, I would be probably more aware and I would be, I guess, thinking about all those specific things and the use of those upper modes or the difficulties associated with flying overwater. I don't think it's any more difficult, I just think there's things that you need to be probably more aware of more in the front of your mind as you go to do it.

AVM HARLAND: So in the formation sorties, for example, the incident sortie on TALISMAN SABRE '23, did you feel comfortable stepping into that, that you were well-practised, well-versed with that type of flying?

D6: Yes, correct. Particularly in the sense of the formation and particularly at night, we were quite recent in formation flying up to that point, having just completed the SOQC. The flight overwater, I guess, just introduces a few extra parameters or things to be aware of, like I said. But I am comfortable that we were proficient in that mission set or in that sort of environment, in formation at night on NVDs, to be able to go do that overwater.

AVM HARLAND: Just one final question there. Do you calibrate your barometric altitude to the RADALT, when you go feet wet overwater, by adjusting the QNH?

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D6: No, that wasn't something that we typically did. So you would leave the barometric altitude set to – it would be the same for all formation aircraft, so everyone had the exact same QNH reference. But typically that was not something that was adjusted prior to going overwater or coming back overland.

AVM HARLAND: Once you went overwater. So you just used the area QNH setting?

D6: We'd use whatever the setting was, I guess, that the formation was – that was valid to the formation at the time. So it might have been the area QNH or it could have been the QNH of the aerodrome we were departing from or we were operating near. But it was whatever the formation flight lead deemed appropriate at the time. And if the QNH changed, it would be announced so that each aircraft could change the QNH so everyone was on the same reference.

AVM HARLAND: Thank you.

MS McMURDO: So are you operating on a higher level of vigilance when you're flying in formation at night in unsettled weather overwater, than if you were simply conducting a day flight?

D6: I'm operating a higher level of vigilance any time I'm flying formation or – and particularly any time I'm flying formation at night.

FLTLT ROSE: You just gave evidence that you, yourself – or you said "we", you were confident that "we were proficient" in flying a mission – that profile. What do you mean by "we"? Was that a reference to Aircraft Captains or particular people in the sortie?

D6: Yes. It's my belief that the Squadron, in general, had just done a fair amount of formation flying leading up to TALISMAN SABRE. So I felt that Aircraft Captains – but some of the co-pilots had just been on that SOQC as well – were reasonably proficient, or current, or recent, in formation flying prior to TALISMAN SABRE.

FLTLT ROSE: So I note that at paragraph 28 you state that:

> *It's possible that the sortie on 28 July was the first time that LT Nugent flew low overwater at night in formation at 6 Aviation Regiment.*

D6: That's correct. I'm not aware of any other sortie he'd done at night in formation overwater prior to that sortie.

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FLTLT ROSE: So it's not necessarily that – you couldn't say that LT Nugent was proficient in flying a mission with that sort of profile?

D6: The distinction that I want to make with that is I'm saying that we were proficient in formation, so formation flight. And as I'd previously said, formation flight at night, in general, is difficult. And overwater just introduces other parameters that we need to be aware of when operating.

FLTLT ROSE: But, in any case, it wasn't the first time that CAPT Lyon had flown a mission with that sort of profile in 6 Aviation Regiment?

D6: No, it would not have been.

FLTLT ROSE: At paragraph 31 you state that:

> *The heavy left formation is the safest formation to fly when four ships are transiting together because it gives you more freedom of movement to either tuck in or to move away from an obstacle or another aircraft.*

D6: In my opinion, yes, out of the formation available to fly within the STANMAN.

FLTLT ROSE: I take it that you've flown in ship 3 in a four-ship formation before?

D6: I have, yes.

FLTLT ROSE: Many times?

D6: Yes.

FLTLT ROSE: How do the pilots in ship 3, in a heavy left formation, see what the attitude or speed changes are in the aircraft in front of them?

D6: So attitude and speed changes: speed changes would be a result of an attitude change. So you'll see the attitude change which will then lead to a speed change. So, by day, you're watching the attitude of the aircraft, so the body of the aircraft, and what the discs – so the rotor blades – are doing. So you'll see changes in that and you'll pick up on those changes. You'll typically, in 83, be doing that off 82, but also referencing 81. By night you'd be looking for the formation lights on the aircraft to help with that picture or build with the picture, because it is more difficult to see the specifics of the fuselage when flying at night.

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FLTLT ROSE: Does that include the APALS in the infrared lighting panel that's been added to the MRH configuration?

D6: Correct. The APALS made it easier for us to see at night, that attitude change in particular, because of where it was placed on the aircraft.

FLTLT ROSE: Then, at paragraph 33, you state that:

> *The instrument coaming in the MRH-90 can obstruct a pilot's view when you're looking cross-cockpit.*

D6: In formation.

FLTLT ROSE: Is it only in formation that you would have that issue about looking cross-cockpit? Would you ever look cross-cockpit single ship?

D6: Yes, there'd be instances where you would look cross-cockpit single ship. But, yes, the instrument coaming did restrict the vision, particularly if you're looking sort of directly across the cockpit in the forward sort of direction of the aircraft. So if I'm in the left-hand seat and I'm trying to look across to the right, 1 o'clock or 2 o'clock, the instrument coaming on the lower sort of part of that scan would be in the way of whatever it is you're looking at.

FLTLT ROSE: Is the coaming some sort of cover that sits above the displays to prevent glare during the daytime?

D6: It is, yes.

FLTLT ROSE: So was it important for the aircraft in ship 2, 3 or 4, in a four-ship formation, to be careful not to get high on the preceding aircraft because the coaming could block their view?

D6: Correct.

FLTLT ROSE: Was it part of what you train pilots to do, to readjust their position to avoid that obstruction?

D6: Correct. Maintaining a correct position in the formation gives you the best references. So if you're high or forward, or rear or low, your vision of the other aircraft is going to be hindered or obstructed by something.

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FLTLT ROSE: Ms McMurdo, I think it's quarter past 4. I understand we could sit on to 4.30. I'm not sure how the witness – we could even sit on to 5, I've been informed. The livestreaming will still continue.

MS McMURDO: Well, it's just that we've made an undertaking to the families not to sit beyond 4, so I'm a bit reluctant to – I know we're running behind schedule. I wonder if I could ask the support people to find out what's on the - - -

FLTLT ROSE: I'm seeing lots of thumbs ups.

MS McMURDO: From the families? We can continue? All right then.

AVM HARLAND: Till what time?

MS McMURDO: Till what time? How late can we go? We'll just have some enquiries.

FLTLT ROSE: Shall we say 4.30, as a polite - - -

MS McMURDO: I'm just having some enquiries made of the families. Till 5 o'clock. Okay.

FLTLT ROSE: Is the witness - - -

MS McMURDO: Are you up to that?

D6: Yes, ma'am.

MS McMURDO: It's been a long day. You've been waiting around a long time to get on. Let's see how we go, going on to 5 o'clock. Thank you.

FLTLT ROSE: Thank you. So when you're sitting cross-cockpit, as you turn away from the formation, you can lose sight of the aircraft in front of you because the coaming's blocking your view?

D6: Yes. It depends on, I guess, where your initial position was in that turn and – but, yes, it is possible for you to bank the aircraft to the point where that coaming restricts the vision cross-cockpit of the other aircraft.

FLTLT ROSE: How is it that you can counteract that? Would it be repositioning the aircraft but also handing over controls?

D6: Correct. So in the first instance, it would be positioning the aircraft so you can maintain the visual reference in the formation. If that was not

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possible for whatever reason – so, for example, it happened quickly or you had attempted to do that, if you were flying from that cross-cockpit position, you could announce that you were losing sight and the non-flying pilot, who is closer and doesn't have that restriction, would be able to take over. Likewise, if I was the flying pilot in that other position and I could see or I suspected that that was happening, I could also offer to take over.

FLTLT ROSE: Would it be an announcement, "Losing sight", and then the other pilot would say, "Taking over"?

D6: Correct. And through the same handover/takeover drill that I described before.

FLTLT ROSE: Is losing sight the same as going blind, or is that a different situation?

D6: I can't recall if going blind is a specific call. But my assumption is that it's a similar thing.

FLTLT ROSE: So we've heard some evidence in the Inquiry that if an aircraft goes blind, they're meant to separate from the formation and then attempt to re-join.

D6: In that case, so if I was losing sight, I would announce it so that we could rectify whatever the issue was. But then if we were completely blind on that other aircraft – so what you're referring to – then the safest thing to do would be to separate from the formation and re-establish visual reference.

FLTLT ROSE: What is the active side of a cockpit?

D6: The active side is the side that's referencing, I guess. So if I'm in the aircraft and it's on the right-hand side of the formation, the left-hand side would be active because the active side is physically looking and has the closest either obstacles or aircraft to it.

FLTLT ROSE: In that way, should the flying pilot be on the active side?

D6: Not necessarily. So you may have reason to fly on the non-active side or the active side of the formation. You can fly from either side, either seat. The active side of the aircraft, when referring to – referring what seat the Aircraft Captain is going to sit in, is typically referenced to the landing position of the aircraft. So that is going to dictate which seat I take from the start of the sortie, and the position in the formation is going to dictate what side of the formation that aircraft is going to be on.

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So while I might be on the active side for landing, I may also be on the non-active side during the formation flight itself. So it may depend on the duties that the pilots are trying to undertake at the time as to what side of the aircraft is flying in the formation, which pilot is flying.

FLTLT ROSE: Do you have these discussions prior to the sortie lifting off about who's going to be on the active side, who's going to be the flying pilot, when possibly you might be handing over, or it's more instinctual whilst you're in the cockpit?

D6: There are general points of the sortie that it's reasonably dictated before you go. So whether it's our SOPs, or you have the discussion beforehand, but then it can also be depending on the situation, or depending on what is happening within the formation, I guess.

FLTLT ROSE: It's fairly fluid?

D6: It can be, yes.

FLTLT ROSE: At paragraph 35 you state that most formation turns are done at 15 to 20 degrees angle of bank.

D6: Correct.

FLTLT ROSE: So if you're in a heavy left formation and you're doing left-hand turns, would you normally expect the pilot to be in the left-hand seat to be the flying pilot?

D6: No. Again, it doesn't really matter what seat the pilot is in to fly in formation; a left-hand turn or a right-hand turn typically has the same response from the pilot. It's just that if you are cross-cockpit and the formation is turning towards you, you do have the coaming as something that could potentially sort of obstruct your field of view, but it's no different than if it's a left-hand turn or a right-hand turn. It'll typically be who is flying is dictated on where you are in the mission and what the non-flying pilot/flying pilot responsibilities are at that time.

FLTLT ROSE: So if you're doing a left-hand turn, is it the case that the pilot in the right-hand seat, if they were the flying pilot, would be flying cross-cockpit?

D6: If you're in a left-hand turn and the right-hand pilot is flying, he would be looking physically to the right of the cockpit, but he is not looking across the cockpit. Depends on the position you are in the formation, but – sorry,

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to answer that again, it depends on the position you're in in the formation as to what side you're looking at, I guess, for a left-hand turn.

FLTLT ROSE: If you're in ship 3, in a heavy left - - -

D6: Yes.

FLTLT ROSE: - - - and you're doing a left-hand turn - - -

D6: Yes.

FLTLT ROSE: - - - you're actually on the right?

D6: Yes. You are not looking across the cockpit, you're looking out your front right-hand window and the front window. The cross-cockpit I'm referring to is when the rest of the aircraft – so the other side of the cockpit – is between the flying pilot and the rest of the formation. So you're physically looking across the cockpit to see where those other aircraft are.

FLTLT ROSE: Looking cross-cockpit, just so we understand, it's not a full turn to the left or to the right. Is it a matter of degrees of turn of the head?

D6: It'd be a matter of degrees. So the aircraft is going to be placed so that the pilot can maintain a reference on it, so through the front of the windshield. It's just going to be a matter of how far offset from the centre of the centre line of the aircraft they're looking to see those aircraft preceding it.

FLTLT ROSE: Is it the case that pilots – you were just describing them looking slightly off-axis. Would that be a shorthand way of describing that degree turn of the head?

D6: Slight off-axis from the centre line of the aircraft, yes, depending on what position in the formation you're in.

FLTLT ROSE: It's not just when you're doing turns. Is it fairly common for a pilot to look off-axis to gauge situational awareness in other times of the flight?

D6: Yes, throughout the flight, I would argue that pilots would be looking off-axis quite a lot, depending on where they are and what they're doing, in formation or not in formation.

FLTLT ROSE: The Inquiry has heard some evidence that if a pilot looked off-axis when using TopOwl version 5.10, that the attitude information

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might wash out to a certain degree, starting from zero to 90. Did you experience that when you were flying?

D6: I never experienced that using TopOwl. I never really reference the pitch information or the attitude information in the TopOwl. I would reference other parameters that the TopOwl is showing me, including the horizon line. But I typically would refer to the Primary Flight Display if I wanted to find out what my attitude information was specifically, so pitch or roll.

FLTLT ROSE: Was that how you trained your trainees?

D6: Yes.

FLTLT ROSE: Was that within some training manual, that they are to be trained to look at the Primary Flight Display for attitude information?

D6: No. So there is no real sort of, I guess, Direction on that; that's my own personal preference. So whenever I train anyone, I would give someone the tools that were available, so the symbologies available, and the Primary Flight Displays available. However, my preference was the Primary Flight Display for attitude information or roll information, pitch information, while flying the MRH, because I found the pitch information displayed on the HMSD hard to distinguish exact numbers; also hard to distinguish exact pitch or roll.

I also liked the Primary Flight Display because it was a coloured display and it would take less than half a second to glance in, determine what was in front of me and then look back out. I saw that as preferential to using the symbology displayed pitch or roll information.

FLTLT ROSE: You said that it was your personal preference to get your attitude information from the Primary Flight Display. Are you aware if other pilots chose to get their attitude information from the HUD?

D6: It's my understanding that most people, I think, preferred to get it off the Primary Flight Display, but that would be an assumption.

FLTLT ROSE: You actually couldn't tell if the pilot next to you was getting their attitude information from the Primary Flight Display, or the HUD?

D6: Unless I was looking at their eyes the moment they were changing pitch – which sometimes I would do as an instructor, but not typically

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within the Squadron – you couldn't really tell where they were getting that information from, yes.

FLTLT ROSE: Had you ever flown with CAPT Lyon, both of you in the cockpit at the same time?

D6: I have, yes.

FLTLT ROSE: And did you ever discuss with him where he preferred to get his attitude information from?

D6: Not that I recall, no.

FLTLT ROSE: Did you ever have those discussions with LT Nugent?

D6: No.

FLTLT ROSE: Do you recall training - - -

D6: Actually sorry, I will backtrack on that. I have had those conversations with LT Nugent, so as part of the SOQC, about setting pitch in a straight line decel. I explained exactly what I just explained to you, that my preference was the Primary Flight Display as part of the SOQC that we were doing prior to the activity.

FLTLT ROSE: Do you recall him saying to you, "Okay, that's what I prefer too", or "I will take that on board", or - - -

D6: I don't recall the outcome, either way. Again, I would just present the options and I would give them my preference. As long as the aircraft's flight path did what it was that we were looking at at the end of it, how they did it was up to them, as long as the outcome was what it was we were trying to achieve.

FLTLT ROSE: Are there additional risks if you're looking in, eyes in to the Primary Flight Display to get that attitude information as opposed to being able to maintain eyes out and just referencing off the HUD?

D6: I don't believe so. So what we're talking about is probably less than a second of a glance in, to reference that information. There is also other information that you might have to reference within a cockpit. I think a pilot flying on night-vision goggles, or on TopOwl, generally, would be looking in and out, and glancing in and out quite frequently to build situational awareness.

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Like, specifically, the navigational information was easier to see if you looked inside, and the HMSD really only had limited navigational information. The pilot is going to be flying, scanning in and out, whenever they needed to get the information they needed to get.

The symbology is there as an aid to visual reference. So it could be one of the tools they use to get information, but the Primary Flight Display and the multi-function displays for navigation information is also a place a pilot needs to look while flying, to get information.

FLTLT ROSE: Did you ever conduct unusual attitude drills with your trainees?

D6: I did, yes.

FLTLT ROSE: And where did you do that unusual attitude training; in the aircraft or in the sim?

D6: The training itself – and I guess any kind of subsequent events, typically, would be done in the MRH-90 simulator. However, if I did an instrument rating assessment in the aircraft, there was a component of the assessment that was required to be conducted. So I would have to do a form of unusual attitude assessment in the aircraft.

FLTLT ROSE: Is it that you would train them to follow the attitude, heading, power, airspeed drill?

D6: Correct, that's the unusual attitude recovery.

FLTLT ROSE: Do you recall training LT Nugent during the SOQC? Is it during the SOQC that you go through that training, or is it another time?

D6: That training is conducted usually on any helicopter you fly at different points during the training. But the training itself for MRH-90 would've been conducted on the MRH Transition Course.

FLTLT ROSE: Prior to someone joining 6 Aviation Regiment?

D6: Correct.

FLTLT ROSE: So there is no unusual attitude drills conducted in 6 Aviation Regiment unless you're on a sim?

D6: No, as I just said, if we were doing instrument rating assessment, that would be conducted as part of the requirements for the assessment.

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Otherwise, unusual attitudes would've been conducted when we were doing simulator training. It's much safer to conduct an unusual attitude recovery or drill in the simulator, and it's one of the reasons why you have a simulator, to do those kinds of emergencies.

FLTLT ROSE: How often are instrument rating assessments? Are they annual?

D6: Once a year, yes.

AVM HARLAND: When you did the UA training, or UA drill, the unusual attitude recovery drill, in the simulator or the aircraft, was the pilot being tested required to close their eyes?

D6: Yes. So the way that I personally did it was, I would introduce it by getting the pilot to either look down so their head was off-axis with the aircraft, and close their eyes or look at something, so maybe a checklist or something like that. And then I would introduce an error, generally slower than the rate that the inner ear can detect the movement. And then create, like, quite a sort of, I guess, aggressive movement, which is above the detection threshold. Get them to look up, generally, as the attitude is either high or low, speed fast or slow sort of thing, and then get them to recover from that point. So try and upset the inner ear slightly, and have the aircraft in an unusual attitude prior to them starting their recovery.

AVM HARLAND: So that was your practice. Was there a requirement to do it that way by either STANMAN or SFI, or SI?

D6: No. That was the way that I was taught to introduce unusual attitudes, and do upset recovery training. So whenever I did it with a pilot, that's roughly how I would go about doing it. The simulator was good for sort of being able to introduce that.

AVM HARLAND: Do you consider that once a year is adequate?

D6: So we would do emergency training more than once a year. The specific requirement for me to assess it in an instrument rating was once a year.

AVM HARLAND: Were you required to do unusual attitude recovery training in the simulator, each time you did it? And how many times would you typically do it, a year?

D6: So I don't recall any requirement to do unusual attitude recoveries or training at all, other than outside of an assessment in an instrument rating.

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We had a requirement to do an annual simulator development training sortie once a year, offset to a person's category. That could be one of the things that was brought up during that annual sim development training; however, it wasn't a mandated thing.

AVM HARLAND: Okay, that's clear. Thank you.

FLTLT ROSE: At paragraph 39 you set out the way you teach the recoveries; for the trainees to reference their Primary Flight Display, reset attitude, go to safe heading, set power that was appropriate; set safe airspeed, but not massively decreasing or increasing.

D6: Correct. So you're looking to set a neutral attitude, so wings level and neutral attitude. You're looking for a safe heading. The power is dependent on where the aircraft is. So if it is descending, then you need to increase power. If you're climbing, you may be able to check the power and continue to climb, if that's appropriate. You could also stop the climb, if that's inappropriate.

And the speed, you would be assessing whether it was increasing or decreasing. You were trying to stabilise the speed, and then get back to a normal place from there.

FLTLT ROSE: So what is a massive increase or decrease in airspeed?

D6: So a rapid increase or decrease is what I'm referring to. So if their airspeed was constantly changing, going towards a slower or a higher speed is what I'm referring to, not a stable speed.

FLTLT ROSE: Did you teach your trainees that the HMSD line of sight must be aligned with the longitudinal aircraft axis when conducting an unusual attitude recovery using the HMSD symbology as an attitude reference?

D6: No, I never taught anyone to do an unusual attitude recovery using the HMSD.

FLTLT ROSE: Did you ever teach them to use the AFCS go-around button for an automated unusual attitude recovery?

D6: No, and I would specifically show people in the simulator, in the annual sim development training stuff, why you should not press the go-around button. The aircraft wouldn't respond the way that you would hope it would respond.

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FLTLT ROSE: Have you ever seen a warning in any of your Flight Manuals that warns pilots to do either of those two options I just described to you, if they were in an unusual attitude?

D6: I vaguely recall a warning that says not to use the go-around button, for that reason. But I'm unsure.

FLTLT ROSE: And it would surprise you if there was a warning to encourage pilots to use either of those two options, in an unusual attitude?

D6: It wouldn't surprise me with the HMSD, because I think what you're referring to is to go centre line, so your head is straight with the axis of the aircraft if you were going to reference a HMSD. What I said is, I would not teach someone to do it because I think the Primary Flight Display is a more appropriate place to recover an attitude from, and the use of the go-around button I am unsure.

The reason why we showed not to do it in the simulator is, if you had a high angle of bank on, the aircraft could potentially roll further away from a stable attitude prior to trying to recover an attitude. So the aircraft would be commanded to try and go wings level, but if you were banked too far over, it was my experience, doing it in the simulator, that the attitude can depart further before it actually recovered.

FLTLT ROSE: I know you've already explained your preference is to use the Primary Flight Displays to check your attitude, but have you ever tried to use HMSD and rely solely on HMSD information in an unusual attitude, perhaps in the sim?

D6: No, I have not.

FLTLT ROSE: It wasn't part of your instructor training?

D6: Not that I recall.

FLTLT ROSE: At paragraph 40 you state that you don't recall anything in the STANMAN covering unusual attitude when flying in formation, but that you expect a pilot who loses situational awareness in the formation to put their aircraft in a position where it is no longer going to conflict with the formation.

D6: Correct.

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FLTLT ROSE: And if you were flying low at the time, can I take it that you would mean the aircraft would increase its altitude, to deconflict with the other aircraft?

D6: Not necessarily. It could be more appropriate for the aircraft to turn away from the formation.

FLTLT ROSE: Now, you've mentioned the simulator a number of times in your evidence. There wasn't a simulator at 6 Avn, was there?

D6: No, there wasn't.

FLTLT ROSE: Where did the members of 6 Avn go to use the sim?

D6: The members of 6 Avn could go to either Oakey or Townsville to use the sim.

FLTLT ROSE: And more commonly, did they go to Oakey?

D6: Correct.

FLTLT ROSE: Do you think it would've been beneficial for the members of 6 Avn to have a simulator co-located with them, to be able to practise emergency drills such as this?

D6: Correct.

FLTLT ROSE: How do you conduct your unusual attitude training now, with your civilian employer?

D6: In a similar fashion as I've just described, in a simulator.

FLTLT ROSE: And you have a simulator co-located where you are working now?

D6: It is located in the same state, yes.

FLTLT ROSE: And easy enough for you to access when you wish to?

D6: Correct.

AVM HARLAND: Do they have a mandated requirement for UA recovery training, your new employer?

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D6: Not that I'm aware of, as an annual requirement. It is definitely conducted as part of your type rating on the aircraft. However, we go through, like, a check system every four months, so three times a year, and they vary the flavour of emergencies that we get as we go to each one of those checks. It hasn't been my experience yet that there's a mandated unusual attitude recovery.

AVM HARLAND: Okay, thank you.

FLTLT ROSE: I want to ask you some questions specifically about TopOwl now.

MS McMURDO: Just before you get onto that. During COVID, you say in your statement there were border closures that meant that pilots at 6 Aviation couldn't use the Oakey or the Townsville simulator.

D6: Correct.

MS McMURDO: Would that affect currency training within 6 Aviation?

D6: It did. So it didn't affect the currency of the pilots in particular because we still had the aircraft to fly. There was a period where we couldn't conduct the annual simulator development training that was required by SIs, because obviously we didn't have access to the simulator.

MS McMURDO: LT Nugent wasn't there at that point, in 6 Aviation. Was CAPT Lyon there then?

D6: He was, yes.

MS McMURDO: Yes, thank you.

FLTLT ROSE: At paragraph 52 of your Inquiry statement you set out that when you were posted to Oakey, at the School of Army Aviation, you would align your HMSD prior to every flight, using the 45-metre test range, even though you weren't required to do so, before the flight.

D6: Correct.

FLTLT ROSE: You were at Oakey from 2019 to 2020, using the MRH-90?

D6: From 2018 to 2020, yes.

FLTLT ROSE: So how often were you required to conduct an alignment at that time?

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D6: So the requirement itself for the alignment was – I can't remember the actual number, but there was so many days – I think it might've been once every 30. I do not recall the number specifically. However, we were doing it every sortie, predominantly to try and get the trainees, as we did it, familiar with the system and how to do the alignment.

The alignment I'm referring to is the alignment between the two individual sides, like, the prisms of the HMSD itself, so that there wasn't an overlapping image by IITs themselves, sorry. But the actual requirement of how often we had to do it, I don't actually recall.

FLTLT ROSE: But it was set out somewhere in a manual?

D6: There was policy around it, yes.

AVM HARLAND: Was that colloquially known as the "50-metre test"?

D6: Yes, correct. It was a dedicated range that was set-up.

FLTLT ROSE: At paragraph 53 you set out that by the time you posted into 6 Aviation Regiment in 2021, there was no longer a requirement to conduct an alignment every certain number of days, but only when you suspected your HMSD was misaligned.

D6: Yes, correct. At some point in that time flying MRH, in my transition from Oakey to 6 Avn, the policy changed. So when I was down in 6 Avn there was no actual policy that prevented us from using the HMSD if we had not checked its alignment, as it previously was when I started flying the aircraft in 2018.

FLTLT ROSE: There was no range at Holsworthy for you to conduct an alignment though, was there?

D6: There was no dedicated range, no.

FLTLT ROSE: Was there some other range that wasn't a dedicated range?

D6: It's my understanding that ALSE had the ability to set-up a range, to check the alignment of the goggles, if we decided that they were potentially US. But there was no dedicated range that I was aware of.

FLTLT ROSE: "US", unserviceable?

D6: Correct.

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FLTLT ROSE: "ALSE"?

D6: Is where we got all our flying equipment and, like, helmets and all that sort of stuff from.

FLTLT ROSE: You're not sure what it stands for?

D6: Yes, I can't remember the acronym at the moment.

AVM HARLAND: Would it be aircraft life-support equipment?

D6: That's the one, thank you.

FLTLT ROSE: Do you think the policy changed because it wasn't possible for the pilots to check their alignment because there wasn't a range at Holsworthy?

D6: I have no idea, but I do recall the policy changing before I was at 6 Avn.

FLTLT ROSE: So how could you tell if your HMSD was misaligned?

D6: There are a few ways to tell. It would be if you were getting overlapping images, it meant that the alignment was out. So if you were looking at objects and you were seeing two images present, that was probably the easiest way to tell that the alignment was out.

FLTLT ROSE: If you've checked out your aircraft, you're heading towards it, you've got your helmet in your arms, when is the first moment you can check the alignment to see whether you're getting overlapping images?

D6: You could check at any point before you got to the aircraft, if you place the HMSD onto your helmet and then viewed any object outside of the cockpit. So if you wanted to, you could do it before you even got to the aircraft, or while you're at the aircraft, before you started it.

FLTLT ROSE: And did you, as a matter of practice?

D6: I didn't, no. I would typically check it once I had it on my head, when I was in the aircraft.

FLTLT ROSE: Was there any particular training that you pass on to your trainees about when they should put their HMSD on?

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D6: We typically put the HMSD on as we were strapped into the aircraft, prior to starting it.

MS McMURDO: It actually connects, doesn't it, through wires to the aircraft itself?

D6: It does. So there's – and it physically connects to your helmet as well, so we would carry ours separate to our helmet, sit in the aircraft, put your helmet on, and then place the HMSD on, and then connect it into the aircraft.

MS McMURDO: Yes.

FLTLT ROSE: So the first moment you would notice – could notice that it was misaligned was when you were already strapped into your aircraft?

D6: Yes, potentially. Like, if that was the first place you wanted to check it.

AVM HARLAND: Did that happen often, can you recall?

D6: I do recall a couple of instances where we US'd – sorry, returned the HMSDs unserviceable due to a suspected misalignment. I'm not sure whether they occurred prior to or during a flight; that it was suspected that they were misaligned. But I do recall a number of HMSDs being placed US for misalignment, or a suspected misalignment.

AVM HARLAND: So not unusual?

D6: Not unusual, but also I wouldn't say common. Probably the easiest way to get the HMSDs misaligned is if the HMSDs themselves were, I guess, dropped or not. The HMSDs were quite expensive and fragile, so they were something that was reasonably well looked-after and handled with a level of awareness and caretaking to the aircraft.

MS McMURDO: So if you get into the aircraft and put the helmet on, plug it into the aircraft, and you find it's misaligned, what is the usual procedure; to immediately ask for another one, or is there an attitude of, "Well, gosh, we're about to start. I'll just keep going"?

D6: No, you'd get another one. You do not want to be flying an aircraft with a suspected misalignment because it affects what you can physically see. So you would either – if it was a single-aircraft sortie you would take the time to go and change it. If it was a formation sortie, there was a chance

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that there would already be another one somewhere within the formation, in one of the spares, or you'd be able to send someone to go get the spare HMSD while you continued with your aircraft start.

MS McMURDO: The pilot would not consider starting - - -

D6: In my experience, I don't think they would.

MS McMURDO: - - - a mission with a faulty one?

D6: No, I don't think so.

FLTLT ROSE: What about if the misalignment only became apparent during flight?

D6: If I suspected that my helmet was misaligned during flight, I would probably terminate the sortie and return the aircraft to – return the aircraft and return the HMSD.

FLTLT ROSE: So you wouldn't be the flying pilot for any part of that sortie?

D6: Probably not, not if I wanted to be referencing specifically the night-vision device itself. There were ways that I could fly the aircraft without referencing the night-vision device. So, for example, instrument flying, or night-unaided flying. So without the use of NVDs. But I would probably terminate the use of the NVDs.

FLTLT ROSE: Did you ever experience a situation where you couldn't see double, it wasn't as if you were sure that the helmet was misaligned, but you had other symptoms like a headache or sore eyes?

D6: I didn't personally experience that, no.

FLTLT ROSE: Were you ever trained, or received a briefing from anyone about the fact that that could be an indication that your HMSD was misaligned?

D6: Yes, I recall that as part of the training on HMSD.

FLTLT ROSE: And is it something that you ever experienced?

D6: Not that I recall experiencing, no.

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FLTLT ROSE: And none of your trainees said to you, "I'm getting really sore eyes. I've got a bit of a headache here"?

D6: I have had trainees experience that on the HMSD, or on goggles in general, but not something I can specifically refer to.

FLTLT ROSE: When that happened, did you say to them, "This could be a misalignment. We should terminate the sortie and get it checked"?

D6: Not that I recall the specific instance, but I think I probably asked, like, for them to describe what they could see, and look at a fixed object and tell me what they were actually seeing, to see if it was misaligned or they were seeing double images.

FLTLT ROSE: Do you know where the HMSDs were stored at 6 Aviation Regiment, in what kind of conditions?

D6: So they were stored within ALSE, and they were stored, to my understanding, within – they came in foam boxes that were pre-cut for them, so that there was, I guess, less chance for them to be damaged or affected, and then they were carried to the aircraft in what looks like helmet bags, but padded bags for the HMSD, separate to your helmet.

FLTLT ROSE: Were these bags insulated in some way to control the temperature?

D6: Not the bags themselves, but I believe that the ALSE Room itself was air-conditioned and regulated, and I'm aware of, like, the room in Oakey also being air-conditioned and regulated.

FLTLT ROSE: Did you ever receive any briefings from ALSE or anyone else about – potentially from the Defence Science Technology Group – that heat could cause misalignment in the HMSD?

D6: I do recall something about that, mostly for us to be aware of it while us handling it, and leaving them, I guess, exposed to direct sunlight or, like, hot surfaces and all that sort of stuff due to the nature of the HMSD being potentially, I guess, misaligned.

FLTLT ROSE: How hot did it get in the cockpit during the day of an MRH?

D6: It depends on where you're flying the aircraft and what the day was, I guess.

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FLTLT ROSE: Flying in summer in Sydney.

D6: It would be potentially hot if the aircraft was sitting in the sun for long periods before you went flying.

FLTLT ROSE: When you say "hot", could you give a range? Could it match the outside temperature, or be hotter?

D6: My estimate would be it could potentially be slightly hotter than the outside temperature.

FLTLT ROSE: And in those circumstances, if you're flying in Sydney in summer, and you're using the HMSD, how did you regulate the temperature for that piece of equipment in those circumstances?

D6: The HMSD would probably likely not be left in the aircraft once the aircraft was shut down, and the aircraft had air-conditioning.

FLTLT ROSE: There was air-conditioning in the cockpit?

D6: Correct.

FLTLT ROSE: So could you control what temperature the cockpit was at all times as a pilot?

D6: Correct.

FLTLT ROSE: Was there a particular level that it was meant to be set at?

D6: Generally the pilots had it set to whatever their comfortable level was.

FLTLT ROSE: Around 21/22?

D6: I don't know the numbers. It was a setting on the gauge. It was either cold or, like, less cold, I guess.

MS McMURDO: So it was never uncomfortably cold in the cockpit of the MRH-90?

D6: It also had a heater.

MS McMURDO: Yes.

D6: So we could regulate the temperature of the cockpit. The air-conditioning was primarily – or its first, I guess, use was for the

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avionics, to cool the avionics in the front of the aircraft, because there was a lot of it; and then, like, our comfort, I guess, was secondary. It could get hot or it could get cold in the MRH, but it was definitely a lot more climate-friendly to a pilot than other aircraft that I've flown. But, yes, you had the ability to regulate to a point, I guess.

MS McMURDO: But it is important for us to understand what the temperature variations could be in the cockpit from cold to hot - - -

D6: I can't - - -

MS McMURDO: - - - over a flying year. So the coldest, have you got any – from your experience, the coldest you've been in a cockpit, would it have been less than 19, less than 15?

D6: I don't think I can give you an answer, ma'am. There's no specific temperature indication as to what the temperature inside the cockpit of the aircraft is. It is more we're concerned about what the temperature outside the cockpit is.

MS McMURDO: For your own comfort, the coldest you've felt in an MRH?

D6: I've never worn a jacket while flying an MRH-90, if that gives you an indication. Like, once the aircraft was started, we had the ability to, like, either crank the heat up to bring the temperature up to a comfortable standard or, if it was hot outside, you could be hot while you started the aircraft, particularly before the air-con was turned on because the air-con was associated with the engines, or the APU running, but once the temperature was – sorry, once the aircraft was running, you had the ability to reasonably quickly regulate the temperature in the cockpit.

MS McMURDO: So presumably there would be 35-degree summer day you'd be flying in Western Sydney, and the sun is out and you get into a hot MRH-90, initially.

D6: Yes, potentially; particularly if the aircraft had been sitting on the tarmac for, like, hours prior to us, like, going to start it.

MS McMURDO: And how long for it to cool down to a comfortable temperature for you?

D6: Not long after the engine start, but it may take us a while to get to the engine start. So it's hard to answer that question with any kind of specific number.

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MS McMURDO: Sure, that's okay. I appreciate it's just estimates, but I'm just trying to get a feel for that. Would it be 10 minutes, 15 minutes, half an hour? What would you say?

D6: I would say it could be 10 to 15 minutes prior to getting the engine started, and then maybe a few minutes after the engine started and the air-con had started to blow through the cockpit and you could regulate the temperature.

MS McMURDO: Thank you.

FLTLT ROSE: When you completed a sortie, what did you do with the HMSD?

D6: The HMSD typically would be put back in its bag and then taken into flight line. If someone else was using the aircraft after you, and you were swapping out, you would leave the HMSD usually somewhere in the cabin or deep in the cockpit, so it was out of the sun. Yes.

FLTLT ROSE: So it wouldn't go back to ALSE after every sortie?

D6: Not necessarily after every sortie. If you were flying multiple day waves, it's likely that HMSD would stay in the aircraft and you would swap out with the next crew, or if you were going flying again. But it would typically go back at the end of the day wave, or at the end of the night wave.

FLTLT ROSE: So is ALSE open at the end of your night waves, noting that you often fly until, like, 2 am in the morning?

D6: Correct.

FLTLT ROSE: And they would be open for you to return the HMSD?

D6: The HMSDs have to be stored, so they would be – someone would be available to do the post-flight on the HMSD and then store them at the end of a night wave, regardless of what time it was.

FLTLT ROSE: Do you know if anyone from ALSE conducts an alignment check once every HMSD comes back into their possession?

D6: I don't know at what rate the alignment check was done. In accordance with whatever the guidelines were, I'm assuming.

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FLTLT ROSE: Do you know where they would send the HMSDs off to if they needed realigning?

D6: I believe if the alignment was suspected incorrect, it had to go to – I don't recall.

FLTLT ROSE: The original manufacturer?

D6: It had to go external to the Regiment if the alignment was suspected to be off, and potentially to the manufacturer.

FLTLT ROSE: Do you know how long it would take to turn around, to get that HMSD back to the unit?

D6: To be honest, I have no idea because there were enough HMSDs there. If we had to send one off, there was typically enough to cover the fact that there was one not available to us. And very frequently – actually, I don't recall a time at all where we were overly concerned about being able to have enough HMSDs for what we needed to do.

FLTLT ROSE: So there was never any reluctance on behalf of the pilots to return a suspected misaligned HMSD to ALSE, because you had plenty more to use if that one wasn't sufficient?

D6: I don't recall any reluctance at all. And, if anything, particularly when we started MRH, I would say that there would be almost a want to return stuff to ALSE or to – to kind of show that there was an issue, or whatever, while we were trying to prove that the aircraft – while we were trying to get used to flying the aircraft, I should say. So we needed to sort of understand, I guess, the friction points. So I would say that, if anything, pilots or aircrew would be more keen to identify issues so that we were aware of them moving forward, while operating aircraft at 6 Avn.

FLTLT ROSE: Have you ever been tested at any stage of your flight screening, or your pilot training, to see if you have stereovision?

D6: Not that I recall.

FLTLT ROSE: In 2023, could 6 Aviation Regiment have been expected to fly in less than two millilux illumination?

D6: I believe so, yes.

MS McMURDO: Just while FLTLT Rose is getting something to show you, could I just return for a minute to the helmets, the TopOwls and the

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hot weather? So when you were on a hot summer's day, it's quite possible that if you were doing a couple of flights a day, the helmets could be left in the MRH-90 in between.

D6: Potentially, yes, if we were - - -

MS McMURDO: Without the air-conditioning on.

D6: Yes, correct. If we were about to immediately swap-out with a crew we would likely leave the HMSDs in the back of the aircraft, the back of the cockpit cabin area, because it was darker, or we would hand it off to the crew as they were coming to the aircraft, but it would not go back into ALSE.

MS McMURDO: And that changeover could be as long as, what, half an hour or an hour?

D6: It could be, yes.

MS McMURDO: And similarly on a cold winter's day, the same thing?

D6: Potentially, yes.

MS McMURDO: Okay, thank you. Sorry to jump back, but I just wanted to clarify that.

FLTLT ROSE: Those are my questions on that topic. I note the time.

<WITNESS WITHDREW

MS McMURDO: Okay, fine. Thank you, we'll adjourn until tomorrow morning. Thank you very much for your assistance, and 10 o'clock tomorrow. Thank you.

PUBLIC INQUIRY ADJOURNED UNTIL
WEDNESDAY, 14 AUGUST 2024 AT 1000

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