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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**

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Counsel Assisting**

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SQNLDR J GILES, representing LT M Nugent
LCDR M TYSON, representing CPL A Naggs
SQNLDR C THOMPSON, representing WO2 J P Laycock
COL N GABBEDY, representing MAJGEN Jobson
COL S THOMPSON, representing BRIG D Thompson
LTCOL D HEALEY, representing BRIG J Fenwick
SQNLDR T SCHMITT, representing COL D Lynch
FLTLT S SEEFELD, representing D10
LCDR M HAY, representing D19
MR G O'MAHONEY, representing Airbus
MS K MUSGROVE, representing the Commonwealth**

0930, FRIDAY, 28 FEBRUARY 2025

DAY 36

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 17/03/25	(Transcription)

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Thank you. Yes, MAJ Chapman.

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MAJ CHAPMAN: May it please the Inquiry. Good morning, Chair and Air Vice-Marshal. Just before we recommence with the cross-examination of this witness, I thought I'd indicate the scheme of manoeuvre for today, or the plan. So following this witness, we have COL Connolly who will be via AVL means, permission having been granted by you, Chair, last week. We then have LTCOL Marshall. We then have Ms Andrea House.

25

Now, in respect of Ms House's evidence, it's proposed by Counsel Assisting that her evidence is to be tendered but not led, and then there be an opportunity for any cross-examination that may follow from that. The final witness today will be Mr Dropmann, and that will conclude the witnesses for this hearing block.

30

MS McMURDO: For this week?

35

MAJ CHAPMAN: I'm sorry, for this week. I apologise.

MS McMURDO: Yes.

40

<MAJ GLENN McCALL, on former affirmation

<CROSS-EXAMINATION BY LCDR HAY, continuing

45

LCDR HAY: Good morning, Major.

MAJ McCALL: Good morning.

5 LCDR HAY: Major, I am going to do the best that I can to make the questions that I ask you - - -

MS McMURDO: The livestream should be on again now. Yes, thank you.

10 LCDR HAY: I'm going to do the best that I can to make sure that the questions that I ask you are easily comprehensible. Could you do your best, please, just to listen to the question that I ask you and just to answer the question that I ask you?

15 MAJ McCALL: Yes, sure.

LCDR HAY: If at any stage I ask you a question that you don't understand, will you just let me know and I'll do my best to clarify the issue.

20 MAJ McCALL: Yes, right.

LCDR HAY: Thank you. Now, yesterday you gave evidence that in essence that every mission flown in Australia is a training mission. Do you remember giving that evidence?

25 MAJ McCALL: Yes.

LCDR HAY: Now, I don't intend to go into any details but what I need to put to you, Major is that that evidence is not right. Not every mission conducted in Australia is a training mission. Do you agree or disagree with that?

MAJ McCALL: I disagree.

35 LCDR HAY: All right, thank you.

MS McMURDO: Could I ask why, please?

40 MAJ McCALL: In a crew-served vehicle, you don't have everyone fully competent or qualified for that particular mission or profile. Everyone is going through a development process in these aircraft types. So you can have four people in an aircraft and they will be varying qualifications and varying competency levels, and they're always being trained. If I can give you an analogy, the Hamas leader that was caught in Israel, he wasn't

caught by individuals who were not training. That was at a training development for junior leaders and they were in conflict.

5 So you're training all the time, everything you're doing. One of the things that one of my flying instructors said to me, "Experience is the comb that life gives you after you've lost all your hair". The concept is you're always learning. They are training missions. So everything in Australia is training.

10 MS McMURDO: So you drew the analogy with the conflict in the Middle East. Are you saying when there's conflict, it's training or not training?

MAJ McCALL: Yes, you will still have junior people.

15 MS McMURDO: It's still training. So that's why you say everything's training?

MAJ McCALL: Everything's training because - - -

20 MS McMURDO: You've clarified that then. Okay, thank you.

MAJ McCALL: Yes, because things change and then you go, "Okay, this thing that worked yesterday, doesn't work today". We have to adapt, modify and adjust, and then I have to go back and tell other people, "Hey, don't do that thing because that doesn't work". And at some stage I'd like to revisit your analogy, please, because I think it might clarify things when you are talking about the speed control and the concept of engaged.

25 LCDR HAY: Well, I'm sure that Counsel Assisting has just heard that you'd like to do that, and he might do that in re-examination. Just going back to my question. Do you mean then from your answer yesterday, what you had intended to convey is that every mission, people on board the platform are continuing to learn?

35 MAJ McCALL: Correct.

LCDR HAY: So the mission profile itself is not what you were talking about. It's the process of the operators of the machine that you were talking about?

40 MAJ McCALL: Well, it depends what mission profile you're taking about, too.

LCDR HAY: Can I just ask you this as a very simple example? If Army Aviation were requested to provide a VIP transfer perhaps for the Chair and

Air Vice-Marshal from this point to another point in Queensland, would that be considered a training mission?

5 MAJ McCALL: That would be considered a carriage of special persons mission. And then, as the Commander - - -

LCDR HAY: Sorry. My question is, would that be considered a training mission?

10 MAJ McCALL: Elements of it could be, yes, depending on the crew that you've got available for selection because it's highly likely that you need to use junior individuals.

15 Lcdr HAY: Yes. But the outcome that is being sought to be achieved by the mission is not actually the training of the individual. It's actually transporting the VIPs, isn't it?

MAJ McCALL: It costs \$70,000 an hour to operate these machines. You might as well get training benefit out of the profile that you're doing.

20 Lcdr HAY: That's not my question. That's not my question. You're saying that the secondary effect of the mission is that there is a learning achieved by the operators of the machine?

25 MAJ McCALL: Correct.

LCDR HAY: But the outcome sought by the VIP transfer is actually moving the Chair and the Vice Chair from point A to point B. That's the mission?

30 MAJ McCALL: Yes.

MS McMURDO: Could I just clarify? The Vice Chair and the Chair are not conveyed by Army aircraft anywhere at all at \$70,000 an hour. I just wanted to clarify that.

LCDR HAY: They should perhaps.

40 Now, I want to go back to some questions that I asked you yesterday about risk management, and I think we finally came to the position that in any Aviation activity you can't eliminate all risk. Do you agree with that?

45 MAJ McCALL: You can eliminate risk because what you're looking at in a mission profile is you need to establish what the mission task is, or the task. Then you're looking at the hazards associated with it. And to keep it

5 simple for you, because I think you've asked me to keep it simple for you, there's only three risks that I'm dealing with that I passed on to my instructors when I was the senior instructor. There's natural hazard. So you can think of anything of the natural hazard in the 3D space, or in the 2D space if you want to stay there. The natural hazard. You've got the manufactured hazard and that hazard can be in the 2D or 3D space. Then you've got the interactive hazard. That's a hazard that I'm going to chase you to kill you.

10 Now, when I'm dealing with the natural and the manufactured hazard in the 3D space, I'll have to start looking at all the hazards and they'll start coming up as lists in my brain or on a piece of paper. My OH&S requirement, my requirement from the 2011 elements, is I've got to eliminate first those risks. Now, if I've got, say, 30 hazards and I can eliminate 15 of those
15 hazards. I'm doing what I can to eliminate the hazards for the carriage of special persons, or whatever mission I'm doing. I've eliminated those risks.

20 The next 15 I can't eliminate, but I can minimise and I can modify them. Now, those 15 go into the next process in my brain and this works, depending how experienced I am in that task – those next 15, when I conduct hazard analysis for risk assessment of what those hazards are going to do for me. And now I've only got 15 out of the 30 because I've eliminated those other ones. Elimination doesn't mean let's just give up for
25 the day and go home and lie in bed. It means, "Determine what you're dealing with. Eliminate those that you can eliminate. Those that you can't eliminate, then modify or adjust or get additional support to minimise those risks.

30 Once I've done that, I've got to then have a look at when I changed those risks, did I introduce any new risks or hazards? Once I've done that, then I really need to make a decision to either continue with the mission or not. So that's the elimination of the risk. Yes, you can eliminate most of the risk, but you've always got some risk.

35 LCDR HAY: Just to be clear, this goes back to the instruction that I gave you at the very beginning, listen to my question. So I didn't ask you to give a simple answer. I asked you to answer my question which is you cannot remove – and here's the critical word – you cannot remove all risk in an
40 Aviation activity. Do you agree with that, yes or no? It's a fairly simple proposition.

MAJ McCALL: If I'm in a Category A certified aircraft, I can eliminate all risk.

45

LCDR HAY: All risk?

MAJ McCALL: All risk.

5 Lcdr HAY: So you say the very fact that you are operating in an environment which is not a natural environment for humans to operate in, does not carry with it any inherent risk in a Category A aircraft. Is that right?

10 MAJ McCALL: In the Category A aircraft, the Airbus engineers have made a magnificent aircraft and they've given me an aircraft that – I can't remember the number, but it's 10 to the minus 9. So that last bit of risk that you're talking about, I agree that there is risk, but it's probably 10 to the minus 9 if I'm complying with the certification limits of that airframe.

15 Lcdr HAY: So generally, if you accept that you cannot accept, even if it's to the power of minus 9, you can't eliminate all risk, you can minimise risk and you can mitigate against risk?

20 MAJ McCALL: Well, how about 10 to the minus 9 is pretty good in reducing risk.

LCDR HAY: You just listen to my question and answer my question. If you can't eliminate all risk, you can mitigate against it and you can manage risk. Do you agree with that?

25

MAJ McCALL: You're sort of getting down to the 10 to the minus 9, so yes, I disagree with your line of questioning.

30 Lcdr HAY: Do you agree with this proposition, that one of the ways of minimising risk is to operate only during the daylight hours? Do you agree that that would reduce risk?

35 MAJ McCALL: That would be a waste of taxpayers' money because they want me to be operationally effective.

LCDR HAY: Sir, I'm not asking you to give speeches about taxpayers' money. Do you agree that operating only during daylight hours is a way of reducing risk?

40

MAJ McCALL: It certainly is.

LCDR HAY: Do you agree that only operating in VMC is a way of reducing risk?

45

MAJ McCALL: Yes.

MS McMURDO: VMC?

5 LCDR HAY: VMC, visual meteorological conditions.

Do you accept that that's what that means?

MAJ McCALL: Yes.

10

LCDR HAY: You could reduce risk by operating only when the conditions are CAVOK. Do you agree with that?

MAJ McCALL: Yes.

15

LCDR HAY: But Army Aviation could not function if it was limited to only operating during the day, only in VMC, and only when conditions were CAVOK. Do you agree with that?

20 MS McMURDO: CAVOK is?

LCDR HAY: Can you just explain what CAVOK is?

MAJ McCALL: You asked the question, you must know.

25

LCDR HAY: Well, do you know what it is? I ask the questions. Do you know what CAVOK is?

MAJ McCALL: Yes.

30

LCDR HAY: Will you tell the Chair, please, what CAVOK means?

MAJ McCALL: CAVOK is a meteorological assessment of visibility and cloud within five nautical miles of a registered or a certified airfield.

35

MS McMURDO: Thank you.

LCDR HAY: So you can be in VMC, but not necessarily with the conditions CAVOK. Do you agree with that?

40

MAJ McCALL: Yes.

LCDR HAY: All right.

MAJ McCALL: Now, I still disagree with your concept. No, I can still – Army Aviation can still quite happily operate in those conditions because if the missions are during those periods of time, then we can operate.

5 LCDR HAY: Could Army Aviation function only operating in those conditions?

MAJ McCALL: Why not? If only the tasks need to be done in those conditions, why operate in any other condition?

10

LCDR HAY: Let's move on from there then.

MAJ McCALL: Because it gets back to – I think what you're trying to say is that we're an organisation that has to accept risk and fly in dangerous missions. Is that what you're saying?

15

LCDR HAY: That is what I'm putting to you.

MAJ McCALL: Remember the three risks or the three hazards that I pointed out to you: natural, man-made and interactive. What is the interactive threat in Australia? Who is chasing me to shoot me down?

20

LCDR HAY: I'm talking historically, do we – that is, Army Aviation – only operate in the Australian environment?

25

MAJ McCALL: The only place that we've done that at the moment is in Afghanistan, and that's finished.

LCDR HAY: So the answer to my question is no, that is not the only environment that Army Aviation has operated. Is that a fair assessment?

30

MAJ McCALL: Yes.

LCDR HAY: Now, just moving on then, just in terms of some of the steps that can be taken to minimise risk. Aircrew generally wear helmets; true?

35

MAJ McCALL: Why would you say "generally"?

LCDR HAY: Well, do they wear helmets?

40

MAJ McCALL: They're regulated to wear helmets.

LCDR HAY: That's a risk mitigation consideration. Do you agree with that?

45

MAJ McCALL: That's a flail and a noise and a communication defence.

LCDR HAY: They wear harnesses when they're strapped into the helicopters?

5

MAJ McCALL: That depends on the mission.

LCDR HAY: That is a risk mitigation strategy. Do you agree with that?

10 MAJ McCALL: That's a defence – it's an engineering defence for security.

LCDR HAY: Moving on then, you spoke yesterday about performance classes. You spoke about Performance Class 3. Do you remember giving evidence about PC-3?

15

MAJ McCALL: Yes.

LCDR HAY: Now, do you accept this general proposition, that civilian manufacturers have categories that are certification standards, CAT A, CAT B? In fact, I think you just mentioned CAT A before, didn't you?

20

MAJ McCALL: I did.

LCDR HAY: Do you agree that CAT A, CAT B are essentially certification standards?

25

MAJ McCALL: They certainly are.

LCDR HAY: What those standards effectively provide are the performance limitations or the performance capabilities of the platform. Do you agree with that?

30

MAJ McCALL: That's only part of it.

35

LCDR HAY: Do the manufacturers in civilian aviation generally publish tables?

MAJ McCALL: Yes.

40

LCDR HAY: You've heard of a CAT A Table?

MAJ McCALL: You're probably talking about – there's a whole bunch of tables. But I think you probably really need to consider that they're not

CAT A Tables. So it would probably be defined as the WAT Tables, which is the weight, altitude and temperatures.

5 LCDR HAY: Now, I'm going to come back and ask you about the performance classes in a minute. Firstly, the categories, CAT A, CAT B, essentially in a nutshell relate to the ability of the platform to operate in the case of a failed engine or an engine failure?

10 MAJ McCALL: It gives you engineering data to ensure that you eliminate the risk or you accept some risk.

LCDR HAY: Yes.

15 MAJ McCALL: Sorry. The eliminate risk is for the CAT A data and the CAT B data then adjusts and allows you to have different data for operating in different conditions; that is, outside of an airfield or different distances.

20 LCDR HAY: Just going back to my question though. Those considerations, are they basically centred on the ability of the platform to continue to operate in the event of an unexpected, unscheduled engine failure?

MAJ McCALL: Yes.

25 LCDR HAY: Then the Performance Classes 1, 2 and 3, they take into account a number of other considerations, other factors beyond the category of the platform. Do you agree?

MAJ McCALL: Yes.

30 LCDR HAY: They will include things like the weight of the aircraft?

MAJ McCALL: Yes.

35 LCDR HAY: They will take into account things such as the environment in which the aircraft is operating at the time?

MAJ McCALL: Yes.

40 LCDR HAY: That is, when I talk about the environment, I am talking about the physical environment below the aircraft at the time of the unexpected, unscheduled engine failure. Is that right?

45 MAJ McCALL: Below and in front of, or in the path that you decide to move the aircraft.

5 LCDR HAY: Yes. But the performance class is essentially a bunch of considerations, taking into account factors including the classification or the category of the aircraft, A or B.

MAJ McCALL: I like your technical term “bunch of indications”. Yes.

10 LCDR HAY: Is it fair to say that Airbus did not provide CAT A Tables for the MRH-90?

MAJ McCALL: Airbus had the CAT A Tables. We didn’t want them.

15 LCDR HAY: Now, I’m not going to go into why you say, “We didn’t want them”.

MAJ McCALL: Well, we didn’t really need them because we, as an organisation, decided that the CAT A Tables probably didn’t need to be needed, and we used all of the data – and we still had some of the CAT A information in the Operators Manual, but we were happy to just use the

20 CAT B data.

LCDR HAY: Would you agree with this proposition, the reason that Army didn’t want or didn’t need the CAT A Tables is that strictly speaking they don’t really have application to Military operations?

25 MAJ McCALL: No, that’s absolutely rubbish.

LCDR HAY: Now, I then want to just ask you about your two statements. You provided a statement on 23 October 2024.

30 MAJ McCALL: Yes. Yes, sorry.

LCDR HAY: That statement was brought about, was it, as a result of some contact by the Inquiry staff asking questions about the OPEVAL – your involvement in the OPEVAL?

35 MAJ McCALL: Yes.

LCDR HAY: And your involvement with Standards?

40 MAJ McCALL: Yes.

LCDR HAY: As is the case with witnesses approached by the Inquiry staff, you were also asked whether or not there was any other observations or comments that you wish to make about matters relevant to the Inquiry?

45

5 MAJ McCALL: The Inquiry gave me the opportunity when it asked the question that, “Were there any other warnings that you put into the Standards Manual because you were concerned about the safety of the operation of this weapon system?” I said, “Yes, I put in a whole bunch of warnings and all of them had to do with performance class associated with operation of this machine”. The reason I did that was to highlight the organisation’s risk appetite which led to an accident.

10 LCDR HAY: Now, can I just ask you to turn, if you would, to page 16 of your statement, the first statement, 23 October. Just to understand, Major, I want to make this very, very clear, I’m not asking you to, and you ought not to, repeat or directly refer to the contents of paragraphs 12 through 14. Do you understand?

15 MAJ McCALL: Yes.

LCDR HAY: At paragraphs 12 through 14, you provided information to the Inquiry that you considered, or you consider, to be relevant to the Inquiry. Do you agree?

20 MAJ McCALL: Yes.

LCDR HAY: Again, it’s very important that you understand that I’m not asking you about the content of the statement, I’m just asking you about some of the details around what you report at paragraphs 12 through 14. Do you understand the distinction?

25 MAJ McCALL: Sure.

30 LCDR HAY: Now, you had discussions and you received an email from a person by the name of Daniel Perren about a week or so before you prepared your statement. Is that right?

35 MAJ McCALL: Correct.

LCDR HAY: How do you know Daniel Perren?

40 MAJ McCALL: I’ve known him for being in the Army.

LCDR HAY: How long have you known him?

MAJ McCALL: Probably 20 plus years – probably 25. It might be 30.

LCDR HAY: So is it fair to say that you knew him around about the 2018/2019 period?

MAJ McCALL: Certainly.

5

LCDR HAY: You mention in your statement that you had a discussion or discussions with Daniel Perren sometime around 15 October 2024; is that right?

10 MAJ McCALL: Yes. Well, we talked often because he was assisting – he was actually involved in the introduction of the MRH-90 in the Operational Airworthiness sense, and it's not that we were not talking constantly, we were talking quite a lot about Op Airworthiness issues consistently and constantly over the last five, 10, 15 years.

15

LCDR HAY: Do you have your second statement with you there as well?

MAJ McCALL: Second statement? No, I don't think so.

20

LCDR HAY: You don't.

MAJ McCALL: Don't know.

25 MS McMURDO: We can get that. It's there. I think it might be perhaps at the end of all those annexures. It might be there at the very end of the bundle.

LCDR HAY: Actually, you might find it at the back of that bundle.

30

MS McMURDO: Yes.

MAJ McCALL: You want me to scratch through.

LCDR HAY: If it's with you, if you could just track it down, please.

35

MS McMURDO: Just have a look at the last page.

MAJ McCALL: Yes.

40

LCDR HAY: Now, just to be clear, I just repeat that warning that I gave to you a moment ago. I'm not asking you to repeat or to place on the record the contents of this statement. Do you understand?

45

MAJ McCALL: Yes. My statement doesn't seem to be there. The email is there.

LCDR HAY: Could I just grab that bundle for a moment.

5 MS McMURDO: Well, it was just as well we found out, because it doesn't seem to be there. So seeing as it's part of the – it hasn't a separate exhibit number. We'd better make sure that it is provided, so we're getting a copy provided now. Thank you. Counsel representing have kindly provided a copy, so that will be 124B.

10 LCDR HAY: Can you just satisfy yourself that what I've put in front of you now, Major, is your statement of 8 November 2024?

MAJ McCALL: Yes.

15 LCDR HAY: You were asked – I'm not sure now that you were necessarily asked, but you've seen that document recently, have you?

MAJ McCALL: What, this one?

20 LCDR HAY: Yes.

MAJ McCALL: No, I've just seen it now.

25 LCDR HAY: Was there anything about that statement, looking at it now, that you wanted to change or add or amend?

MAJ McCALL: No.

30 LCDR HAY: I'm just going to draw your attention to paragraph 3 for a moment. You'll find that on the first page.

MAJ McCALL: Correct. Paragraph 3?

35 LCDR HAY: Paragraph 3?

MAJ McCALL: Yes.

40 MS McMURDO: There are two paragraphs 3 in the statement, so just clarify.

LCDR HAY: Is there? Can you see the - - -

MAJ McCALL: The first one?

45 LCDR HAY: I'm sorry. Do you see the first paragraph 3?

MAJ McCALL: Yes.

5 LCDR HAY: Just read that to yourself for a moment, then I'll have some questions for you about that paragraph.

MAJ McCALL: Yes.

10 LCDR HAY: You've read that?

MAJ McCALL: Yes.

15 LCDR HAY: You received an email from Daniel Perren around about 15 October 2024.

MAJ McCALL: Yes.

20 LCDR HAY: You say that you had had private discussions – plural – with him.

MAJ McCALL: Yes.

25 LCDR HAY: Were they in advance of the email that he sent to you on 15 October?

MAJ McCALL: Yes, they were. Well, they were just in discussions on risk assessment and op airworthiness issues and I think we just discussed around the issues associated with the contents of the email.

30 LCDR HAY: Yes.

MAJ McCALL: Just to give you a little bit more context - - -

35 LCDR HAY: I don't want context. I just want to know when these discussions took place. So are you able to say - - -

MAJ McCALL: No. No, I will give you the context.

40 LCDR HAY: Sorry, Major.

MAJ McCALL: Daniel Perren was the one who started the performance class stuff for me, so we spent a lot of time dealing and talking about that.

LCDR HAY: My question is a very pointed question about the timing of your discussions with him, in particular, about the contents of his email of 15 October.

5 MAJ McCALL: Yes.

LCDR HAY: Now, do you understand that?

MAJ McCALL: Yes.

10

LCDR HAY: You've usefully described what the email covered. Do you accept – and I'm just asking you now to, if you would, go down to the second paragraph numbered 1.

15 MAJ McCALL: Yes.

LCDR HAY: Can you tell the Inquiry, without going into the detail of what's captured there, when was the first time that Daniel Perren raised that matter – that is, the matter captured in that paragraph – to your attention?

20

MAJ McCALL: Probably at some stage around the Nowra incident.

LCDR HAY: So the Jervis Bay incident?

25 MAJ McCALL: Yes.

LCDR HAY: And we know that that incident took place sometime in 2023?

30 UNIDENTIFIED SPEAKER: March.

LCDR HAY: March 2023?

MAJ McCALL: Yes.

35

LCDR HAY: Had he spoken to you at all in 2018 or '19 about what's captured there in paragraph 1?

MAJ McCALL: No.

40

LCDR HAY: What about '20, '21, '22?

MAJ McCALL: No, not to my recollection.

LCDR HAY: You would remember something like that, wouldn't you, if that was brought to your attention?

MAJ McCALL: Do you think so?

5 LCDR HAY: Well, wouldn't you?

MAJ McCALL: Of course I would.

10 LCDR HAY: You would.

MAJ McCALL: Yes.

LCDR HAY: Are you able to say, given that, that you were not spoken to or told about that matter in 2018, 2019, '20, '21 or '23?

15 MAJ McCALL: No.

LCDR HAY: You can't say?

20 MAJ McCALL: No. No, he didn't talk about that. But that was - - -

LCDR HAY: He didn't. Right.

25 MAJ McCALL: But we talked about lots of other things associated with the op airworthiness elements that we were dealing with.

LCDR HAY: Now, in 2018 you gave evidence yesterday that – well you were aware that D19 was an OC at the Regiment, 6 Avn Regiment?

30 MAJ McCALL: I knew he was there for a short period of time. And then I didn't really know what happened to him after that.

LCDR HAY: And if that had been conveyed to you, what's contained in paragraph 1, the second paragraph 1 of your statement, if that had been conveyed to you at that time, would you have spoken to anyone about that?

35 MAJ McCALL: Yes. I would've spoken to the individual to say, "Hang on, that's inconsistent with your position". In fact, I didn't know who it was when he was talking about it because Dan didn't give me the name. He just said, "Look, there's an individual who said" – and I said, "Who the hell talks like that?"

40 LCDR HAY: Yes.

45

MAJ McCALL: And when I got the name, I was, “Oh, no, that’s surprising”. And in my view, it would be. “Well, no, it’s things that I’ve heard under frustration associated with op airworthiness elements”. And, you know, as you were saying, “Hey, isn’t it easier just to stop everything?”
5 Well, no, that’s an adolescent approach to risk management. Because, yes, why don’t you just stay in bed. No, if you get something like that at that level, that displays and becomes counterproductive to the Command requirement to have safety as your priority.

10 LCDR HAY: And just going back to my question. If in that period, 2018/2019, that had been conveyed to you, you say you would’ve spoken to the individual in the first instance?

MAJ McCALL: Sure.

15 LCDR HAY: You didn’t, though?

MAJ McCALL: No. Because he’s a professional officer and I considered that he had the same concept of risk management and command and safety as a priority.
20

LCDR HAY: Yes. Let me just – 2018/2019, according to your statement, you were the MRH-90 Standards Officer, Specialist Pilot Captain?

25 MAJ McCALL: Correct.

LCDR HAY: And so beyond any professional courtesies, did you have a legal obligation, an ethical obligation, to confront that person if you thought that those words had been said and that they captured an attitude held by him at the time?
30

MAJ McCALL: Well, there’s the saying within the Army, isn’t there, “The standard you walk past is the standard you accept”?

35 LCDR HAY: Yes. Well, do I take it from that, that that’s a yes, then?

MAJ McCALL: I would.

LCDR HAY: Now, just in relation to that same period, 2018/2019, do you recall conducting a flight from Townsville to Oakey with then BRIG Jobson?
40

MAJ McCALL: Yes.

LCDR HAY: And is it fair to say that during that flight you were the pilot in command?

MAJ McCALL: Correct.

5

LCDR HAY: And the Brigadier was the co-pilot?

MAJ McCALL: Yes.

10

LCDR HAY: Now, yesterday you spoke about five entities being in the aircraft. Do you accept this: that the pilot in command concept involves special command?

MAJ McCALL: I'm not sure what you mean by "special command"?

15

LCDR HAY: As the pilot in command, his rank – he outranked you at that time. Do you agree?

MAJ McCALL: He does.

20

LCDR HAY: His rank was secondary to your position as pilot in command for the safe operations of that aircraft?

MAJ McCALL: Yes.

25

LCDR HAY: Now, beyond that concept, do you agree that you essentially had a captured audience for that flight between Townsville and Oakey if you had any concerns about the culture at 6 Avn at the time?

30

MAJ McCALL: Yes.

LCDR HAY: Did you raise any issues like that with the Brigadier at the time?

35

MAJ McCALL: I didn't need to.

LCDR HAY: Because you didn't have any?

MAJ McCALL: Correct.

40

LCDR HAY: Thank you. Thank you, those are my questions.

MS McMURDO: What was the date of that flight, please?

LCDR HAY: It was sometime in that period 2018/2019. Do you recall now when that was?

5 MAJ McCALL: No, but I was doing the Brigadier's transition to the aircraft type.

LCDR HAY: And yesterday – sorry, Madam Chair, your question just prompted some more thoughts. Is it fair to say that you're a bit of a fan of the MRH? Is that right?

10 MAJ McCALL: No, I consider the MRH to be a technically good and well-engineered machine, and - - -

LCDR HAY: You said yesterday it was the safest, best capable aircraft that you had flown in your time with Army Aviation. Wasn't that the effect of your - - -

MAJ McCALL: Correct.

20 LCDR HAY: And part of that flight between Townsville and Oakey, were you also demonstrating to the Brigadier some of the features and functions of the aircraft?

MAJ McCALL: Well, I was showing him how capable the machine was. How that it couldn't get lost and how we had legs to fly from Oakey to Townsville, which not very many rotary-wing aircraft can do.

LCDR HAY: Yes, thank you. Those are my questions.

30 MS McMURDO: Who's next, please?

MAJ McCALL: If I could, I did sort of mention that I'd like to just revisit the analogy associated with the cruise control in a car?

35 MS McMURDO: You can do that now or we can do it in re-examine.

MAJ McCALL: It was just something - - -

40 MS McMURDO: Perhaps do it now because some re-examination might - - -

MAJ McCALL: Yes. It was right at the end of yesterday.

45 MS McMURDO: Yes.

MAJ McCALL: And it was a concept that I woke up at about 2 o'clock this morning thinking, "Yes, that's an analogy, it's a reasonable analogy, but I think I could just put it in context of risk and hazard identification".
5 The cruise control in a vehicle at the 2D – and I think the question you asked about was if you engaged the cruise control and you put it in a standby mode, is it not engaged? And I'll just continue - - -

LCDR HAY: Carry on.

10 MAJ McCALL: Yes, you could probably say it's still engaged, but what I'd like to present - - -

MS McMURDO: Just let him finish this – if you've got something arising, that's fine.

15 Lcdr HAY: Yes, I'll just stand here though for it.

MS McMURDO: Thank you. Yes.

20 MAJ McCALL: Magnificent. Yes, but what you've got in your vehicle is, you're operating to a Standards Manual that is already designed for you which you may or might not know exists. And if you're deciding to remove an engineering control or put it into standby, you're operating on a transport system where the Standards Manual has been written by, if not hundreds,
25 possibly thousands of people. And you've got the defences associated with lines on the road, with friction quotients for vehicle traffic on the road. You've got an understanding of vehicles in front of you which have design features in it to tell you when they're slowing down. You have give way signs, stop signs, traffic lights to assist you to operate that vehicle.

30 And the Standards Manual is written for you to operate in that world and you went from an L-plate to a P-plate and then you started to operate that machine in accordance with all of the standards that are around you. So they are all the engineering and the non-technical skills that you're dealing
35 with, and you're deciding to put one of your automatic functions in standby. But everyone else is still helping you in accordance with the Standards Manual.

40 Now, I put your vehicle 400 kilometres west of Derby and you've got – I don't know if you have a son or a daughter, but you've got a junior pilot of your machine and your machine just happens to be a heavy rigid 10 tonne, and you're deciding to go driving late in the afternoon and you're going to pull out with the heavy rigid with heavy flexibles who are going to be driving out on the dust roads. And you decide to go in convoy with them
45 at 185 kilometres an hour.

5 The Standards Manual that is designed for the road system with all the lines, with all the traffic lights, with all those things, they're not there to assist you. Would you modify and look at the hazards and the risks? And would you modify your use of your heavy rigid vehicle and the automation that is available to you? And how would you consider and review and look at those risks and start to eliminate some of those risks and modify how you're going to do your transport mission in that particular area?

10 That's what the Standards Manual is. And that's that context that I would give you that for the automation of that vehicle.

15 LCDR HAY: No, Major, I am sorry that I caused any loss of sleep to you but, frankly, you have completely misunderstood the purpose of my analogy. Because do you remember when I started my cross-examination yesterday, I reminded you that I'm a Legal Officer, not a helicopter pilot? Do you remember me saying that?

20 MAJ McCALL: Maybe.

LCDR HAY: Yes. And do you remember me, in particular, taking you to the SI and pointing you to the word "selected"?

25 MAJ McCALL: Yes.

LCDR HAY: And your response was, before I could finish my question, your response was, "Yes, many people take that view". The point that I was making is, when you depress the trigger, override the altitude hold, the altitude hold is still technically selected. Do you agree with that?

30 MAJ McCALL: Well, what does the order say? Is it engaged or selected?

LCDR HAY: It says "selected".

35 MAJ McCALL: It's selected, yes.

LCDR HAY: It remained selected even if you were depressing the trigger overriding the autopilot function. Do you agree?

40 MAJ McCALL: It remains selected, but you're now adjusting the datums.

LCDR HAY: But it remained selected?

45 MAJ McCALL: You're adjusting the datum, so those datums can be adjusted below the height that you want it to be adjusted.

LCDR HAY: Yes, thank you.

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

5

<CROSS-EXAMINATION BY MR O'MAHONEY

10 MR O'MAHONEY: Major, my name is O'Mahoney and I appear for Airbus in this Inquiry. Sir, I think I'm right in saying you said some positive things about the MRH-90 yesterday?

MAJ McCALL: Yes.

15

MR O'MAHONEY: In particular, I think you described it as the safest aircraft – I'm paraphrasing – that you've flown in across the arc or the journey of your career.

20 MAJ McCALL: Correct.

MR O'MAHONEY: And no doubt it's fair to say you've flown a fair few different types of aircraft across that journey?

25 MAJ McCALL: Yes.

MR O'MAHONEY: Could you just very briefly step the Inquiry through the features of the aircraft that led you to that conclusion?

30 MAJ McCALL: Well, it starts with the twin-engine design. It also goes with all the multifunctions and the flight control systems and the inertial navigation systems, the mission management systems, although some of the mission management systems were external to the aircraft. But to load that machine up with all the data that it needed for a particular mission, during
35 day or night, I could structure a mission and operate with confidence in pretty much most conditions that would be expected to be encountered should I take it into a conflict zone.

40 So I like the redundancy. I like the flight control systems. It gave me flexibility to fly the machine aggressively or it gave me the options to sit back, relax, turn the air-conditioning on. And the vibration reductions that were designed into the airframe allowed me to operate for a long period of time. And then, when I finished getting out of that aircraft, I didn't feel like I'd been beaten to pieces. It was a very comfortable machine, and it was

fast. And I was never concerned about running out of fuel, because I could carry up to four hours of fuel.

5 And that was internal and I could still have a great big cabin in the back to put anything I wanted. I could wheel it in, I could lift it in. I had weather radar. And the aircraft was fitted with and for electronic warfare self-protection systems. So, yes, it was the full mission package.

10 MR O'MAHONEY: Thank you. I don't have any further questions.

MS McMURDO: Yes, applications to cross-examine?

COL THOMPSON: Yes, I seek leave, ma'am.

15 MS McMURDO: Thank you.

<CROSS-EXAMINATION BY COL THOMPSON

20 COL THOMPSON: Good morning, MAJ McCall. COL Thompson, Legal Officer for BRIG Dean Thompson. He was the Brigade Commander in 2023, 16 Aviation Brigade. Now, you said yesterday several times, and again in effect this morning, that Command – that is, Defence represented
25 by Army Aviation Command – has a legal obligation to eliminate risks under the *WHS Act*. Do you remember saying that?

MAJ McCALL: Yes.

30 COL THOMPSON: Is that the premise on which you gave your evidence yesterday, including your two statements?

MAJ McCALL: No, that's just part of the WHS requirements, which is written into the Standing Instructions that the two star signed.

35 COL THOMPSON: Is that the premise - - -

MAJ McCALL: It's in the orders.

40 COL THOMPSON: Is that the premise on which you wrote the Standards Manual, that Defence must eliminate all risks to safety?

MAJ McCALL: It's eliminating where we can, and minimising where we can't.

45

COL THOMPSON: I put it to you that you're mistaken about that proposition. In fact, Defence, through Army Aviation Command and 16 Aviation Brigade, has a duty to take all reasonably practical steps to ensure safety, and that means taking all reasonably practical steps to eliminate risks. And where that can't be done, taking all reasonably practical steps to minimise risks. Does that resonate with you?

MAJ McCALL: It depends how you read the Act and what it's written into the SIs, but - - -

COL THOMPSON: I'm reciting verbatim from two well-known provisions of the *WHS Act*.

MAJ McCALL: Mm-hm.

COL THOMPSON: You can take that from me. Sections 12 and section 19. Would you agree with me that that legal obligation is a far cry from the proposition that you are putting – must eliminate all risks to safety?

MAJ McCALL: No, look, where you can, you have to eliminate the risks, in my view. And where you can't – because there's a number of issues why you can't eliminate the risks – then you start minimising.

COL THOMPSON: Now, you say that the Standing Instructions published by Army Aviation Brigade are an order, it's law insofar as it's an order from the CDF - - -

MAJ McCALL: Yes.

COL THOMPSON: - - - for everyone to comply with the rules and everything else in the Standing Instructions. Now, I've put it to you there's nothing remotely resembling your proposition in the Standing Instructions, that all risks to safety must be eliminated. Nothing. Nothing remotely resembling that.

MAJ McCALL: Yes, I'd go back and have a look at the SIs right in front. But again, it comes down to safety of the Command priority. You would agree that that's written in there?

COL THOMPSON: Sorry, I'm asking you for your evidence. I don't give evidence, I just ask the questions.

MAJ McCALL: No. No, I'm engaging in discussion. Safety is a Command priority and the SIs distil the OH&S requirements or the WHS requirements and, we have a duty that we need to review hazards and where

we can, eliminate those hazards and where we can't eliminate those hazards because it's too costly or we can't, or we still need to conduct an effect of the mission, then we start minimising the risk.

5 COL THOMPSON: Now, this question was put to you by my learned
friend this morning and I just want to put it again to make sure that I
understand your evidence. You're not suggesting to the Inquiry that Army
Aviation Command can't participate in exercises such as TALISMAN
10 SABRE, which involves low flying – that is, less than 500 feet – in
formation, in low visibility, at night where there's (indistinct)
around. You're not suggesting that, are you?

MAJ McCALL: No.

15 COL THOMPSON: Provided - - -

MAJ McCALL: Yes, because you can still operate there, but you've got
to assess what the hazards are and you've got to start dealing with them.

20 COL THOMPSON: Now, did I understand you to say yesterday, and
today, that there should have been a risk assessment done on the day of that
fateful flight on 28 July, that formation flight on 28 July 2023? Did you
say that?

25 MAJ McCALL: Yes, it's in the doctrine and it's also in the Command
requirements of Mission Command and Formation Command. And it's
also the requirement of the Aircraft Captains. And it could be an immediate
risk management, but - - -

30 COL THOMPSON: Just remind me – sorry?

MAJ McCALL: But there's also an exercise requirement to have an
understanding of the risk associated with what's going on with that exercise.

35 COL THOMPSON: Should it have been a written risk assessment on
28 July '23, or could it have been a verbal risk assessment among the crew?

MAJ McCALL: That's up to the organisation.

40 COL THOMPSON: So perhaps a written risk assessment, but not
necessarily. It could have been verbal?

MAJ McCALL: It could have been. But it needs to be – you still need to
deal with the risks.

45

COL THOMPSON: Thank you. You're not suggesting there wasn't a risk assessment done on the day?

5 MAJ McCALL: No, I'm not. No. But I wasn't involved in the exercise. What I'm involved in was the Standards Manual that is the basis of the way to operate the machine.

10 COL THOMPSON: Yesterday you used the phrase "risk management" and also "risk assessment". You're not using the two terms interchangeably, are you?

MAJ McCALL: No. Risk assessment is looking at the hazards and then dealing with hazards. And risk management is the process.

15 COL THOMPSON: I'm sorry, risk assessment in Army Aviation is part of risk management. You'd agree with that?

MAJ McCALL: Yes.

20 COL THOMPSON: In fact, it's the second step; that is, risk assessment is the second step of risk management. You'd agree with that?

MAJ McCALL: Yes.

25 COL THOMPSON: The first step meaning to identify the hazards.

MAJ McCALL: No, the first step is to identify the context of where you're operating.

30 COL THOMPSON: And the hazards of the context of where you're operating?

MAJ McCALL: Yes, which are, as individuals have pointed out, many and varied.

35 COL THOMPSON: And the second step is risk assessment; that is, measuring the likelihood of the risks that you've identified eventuating – wait for it.

40 MAJ McCALL: Yes.

COL THOMPSON: Against the consequences of the risk eventuating, such as mere property damage, injury to people, deaths and so forth. Do you agree with that?

45

MAJ McCALL: Yes.

COL THOMPSON: And then the third step is implementing controls to manage those risks.

5

MAJ McCALL: Well, it's a step, yes.

BRIG THOMAS: Now, that risk management process, which includes risk assessment, would you agree with me that's all dealt with in the Standing Instructions?

10

MAJ McCALL: No.

COL THOMPSON: Should it be?

15

MAJ McCALL: Well, that is - - -

COL THOMPSON: Are you saying it's a shortcoming of the Standing Instructions?

20

MAJ McCALL: No, Standing Instructions are a set of orders. But the Standing Instructions are, you know, when you go to 400 kilometres west of Derby, you've got to deal with the context. What's the context? What's the mission? What's changed? What's different.

25

COL THOMPSON: Well, listen to the question. I'm putting it to you that that risk management process is quite clearly dealt with in the Standing Instructions. Would you agree with that or disagree?

30

MAJ McCALL: Yes, it's dealt with.

COL THOMPSON: And, indeed, it's dealt with by saying, effectively, "Thou shall comply with the *Work Health and Safety Act*, which includes mandatory risk management processes.

35

MAJ McCALL: Yes.

COL THOMPSON: Thank you, ma'am.

40

MS McMURDO: Thank you. Next application. Yes.

<CROSS-EXAMINATION BY LTCOL HEALEY

5 LTCOL HEALEY: MAJ McCall, I'm LTCOL David Healey, and I represent the interests of BRIG Fenwick. Good morning.

MAJ McCALL: Good morning.

10 LTCOL HEALEY: My questions are going to be fairly narrow in the hope that you can assist me with some technicalities. I understand my learned friend, Counsel Assisting, took you through your statement yesterday. Have you got that with you?

15 MAJ McCALL: Yes.

LTCOL HEALEY: The very first statement that you made?

MAJ McCALL: Yes.

20 LTCOL HEALEY: And he established at question 1 that you were, in 2023, the Army Aviation Standards Officer; is that right?

25 MAJ McCALL: 2023, I may have been. Yes. That is the SO1 or Acting SO1, or just an SO2?

LTCOL HEALEY: Thank you, Major. And I understand my friend also took you through an annexure to your statement about the Standardisation Manual. Do you recall that?

30 MAJ McCALL: Not really. If you can - - -

LTCOL HEALEY: Well, it's attached to your document, so - - -

35 MAJ McCALL: Yes, get to the point, I suppose, of where you want me to look.

LTCOL HEALEY: Yes, so I'll get there. I just want to narrow your focus and get you to assist me. Have you heard of the system called PEX?

40 MAJ McCALL: Yes.

LTCOL HEALEY: Would you be able to just describe to the Inquiry what PEX is?

MAJ McCALL: Patriot Excalibur is, among other things, a logbook of experience, and it's a software-based system to capture qualification, competence and tracking of qualifications that need renewal. And, generally, that will be in the orders of months or years associated with a particular qualification. And that qualification could be helicopter
5 underwater escape training, which needs to be done periodically.

Non-technical skills, risk management skills, this system tracks the dates when they need to be done. It looks backwards for a period of a year or
10 several years and then it just identifies when you become current or uncurrent, and it allows you to keep ahead of your currency requirements.

Is that what you understand it to be yourself, or you're happy with that?

LTCOL HEALEY: I'm happy with your explanations. I'm a Legal
15 Officer, as my friend alluded to this morning when he referred to himself. It's not my technicality. So just in terms of what you were asked yesterday in relation to the warning that you put into the Standardisation Manual, that was 13 months from the brief that you gave to BRIG Fenwick.
20 Do you recall that?

MAJ McCALL: No. I recall the warning that came out of the OPEVAL and then the multiple warnings that were then put into the Standards Manual.
25

LTCOL HEALEY: Correct. That's what I'm referring to. Would that be something that could go into PEX, in your experience, the warning?

MAJ McCALL: No. Well, PEX would advise the organisation that an
30 amendment list was changed and that you need to go and review that amendment list. And usually that would be called a flight crew information file. And that flight crew information file would be – it's like a pilot's to read book, or orders to read book. That then gets sent out to all of the aircrew, and that flight crew information file is either a no go – it gives you
35 a red indication that says, "You can't go flying until you read this", or a yellow indication which says, "You can go flying, but you need to read this within the next time period".

So, yes, it would've been identified as, "Hey, here's a new amendment and
40 you need to look at it".

LTCOL HEALEY: And do you recall if there was any warnings around
5.10 TopOwl put into that PEX system?

MAJ McCALL: It probably would've been as part of the flight crew

information file which says, "Go and have a look at this document".

5 LTCOL HEALEY: And in your experience, are pilots required to confirm and acknowledge reading this prior to flying?

MAJ McCALL: Yes. Yes, because that's what PEX forces them to do.

10 LTCOL HEALEY: And just one last thing from me, have you got your statement in front of you?

MAJ McCALL: Yes.

15 LTCOL HEALEY: If you turn to paragraph 10 of your statement and, more specifically, we're looking at subsection (c) of 10.

MAJ McCALL: Could you give me a page number, please?

20 LTCOL HEALEY: Yes. It's a bit of a mess this, but it's page 11/17. And just let me know when you've reached that page?

MAJ McCALL: Yes.

25 LTCOL HEALEY: You'll see the second paragraph down, you start talking about HMSD version 5.10. Can you see that?

MAJ McCALL: Yes.

30 LTCOL HEALEY: And it resulted in several warnings, and you annex that.

MAJ McCALL: Yes.

35 LTCOL HEALEY: And in that same paragraph you state that there was close to approximately 290 warnings that already dealt with many other relevant serious issues. Can you see that?

MAJ McCALL: Yes.

40 LTCOL HEALEY: Now, I'm not going to ask you to repeat all of those particular warnings but you then state in that sort of last line of that paragraph that:

With at least 35 of those warnings identified in controlled flight into terrain.

45

Do you see that?

MAJ McCALL: Yes.

5 LTCOL HEALEY: Are you able to just identify some of those warnings for the Inquiry that would - - -

10 MAJ McCALL: A lot of the warnings ended up being associated with landing in dust or landing in confined areas with dust, because that became – that is a problem with helicopters. You sort of kick up a lot of dust or snow or – depending where you’re operating – and inadvertent drifting. So that came out of an ARDU testing.

15 So that was dust landings and dust take-offs and others were associated with just terrain flight and inadvertent descents, inappropriate use of flight control systems, overbanking. Where we’ve had accidents – we had an overbanking accident just near Amberley where the aircraft STIG turned and flew into a tree. So they’re things that we’ve had happen in the organisation and they’ve happened around the world and we try and take
20 what’s left out of those accidents and that becomes part of the organisational memory that is injected into the Standards Manual.

LTCOL HEALEY: Those are my questions.

25 MS McMURDO: Thanks, LTCOL Healey. If I could just clarify. So warnings would often be communicated by PEX?

MAJ McCALL: No, ma’am.

30 MS McMURDO: No?

35 MAJ McCALL: One of the things that when we first started writing our Rules and Regulations – and this was early in the 2000s, after the 707 accident – we tried to put one source of truth for a particular area of reading. PEX is just used as a interface with the aircrew to say, “There’s a whole bunch of things that you need to be aware of, but here are some changes to the documentation that we, as the regulators, want you to go and read”.

40 And PEX is just that interface that all Aircraft Captains need to interface with before they go to their Authorising Officer, or before they go to their aircraft. So it’s the one point where we can – I suppose I could use it as an analogy of a noticeboard. And it’s a noticeboard where you walk past and, you know, anything surrounded in red is, you can’t walk past this particular

notice. And if that thing says, “You need to go back to your office and read this document before you continue on with your mission” - - -

5 MS McMURDO: Do you know if anything on version 5.10 was put onto PEX at the time of service release?

MAJ McCALL: I’m pretty certain it would’ve been a FCIF, or a flight crew information file, that said, “Hey, we’ve done some changes to these manuals, you need to just go and check this”.

10 MS McMURDO: So it may well have been done, but if so, it would’ve been done at the time the changes were done to the STANMAN.

MAJ McCALL: Yes. Or yesterday we were talking about INAM 56. I can’t remember INAM 56, but if INAM 56 came out, again, that gets passed through the organisation by the flight crew information file on PEX.

MS McMURDO: But it wouldn’t have worked by something coming out about the new version 5.10 warning that goes on PEX a substantial period of time before the STANMAN change. It would happen around about the same time.

MAJ McCALL: We generally tried to keep it all consistent so that you’ve – you know, I’ll read this. If I go to the document, yes, there it is. I go to the aircraft, yes, it’s uploaded. Yes, we tried – you know, all of those changes, we tried to make sure it was reasonably seamless.

MS McMURDO: Thank you. So anything arising out of that?

30 LTCOL HEALEY: Nothing arising, Madam Chair.

MS McMURDO: Thank you.

AVM HARLAND: In addition to PEX tracking the requirement to have read an amendment to a Flight Manual or a Standards Manual as they become available, as they’re published, does it also track the requirement to perhaps having done training packages that are associated with an upgrade to the aircraft, or a change to the aircraft?

40 MAJ McCALL: That would be a FCIF element, I suppose. The training packages – yes. Because PEX also has a history log in there. And that history log can’t be deleted. And the history log is elements where you’ve been forced to go and do some training and that, in some cases, would be required to be entered into the history log to show that you’ve done that training.

5 AVM HARLAND: So, effectively, PEX acts as a control to ensure that when aircrew go fly an aircraft in a particular configuration, they have done all the things that are required of them, which includes familiarising themselves through the manuals, with the changes that are associated with that, and that they have done the training that's required before they can go flying.

10 MAJ McCALL: Yes.

AVM HARLAND: And if everything hasn't been satisfied, then PEX would flag it, such - - -

15 MAJ McCALL: If it's been entered correctly, yes.

AVM HARLAND: If it was entered correctly, to say that particular aircrew individuals shouldn't go on that flight.

20 MAJ McCALL: Correct.

AVM HARLAND: Thank you.

25 MAJ McCALL: Or can go on that flight, but there would be some limitations that either the Aircraft Captain would present to the Authorising Officer, or the Authorising Officer wouldn't enforce upon the Aircraft Captain and change their mission profile or stop the mission.

AVM HARLAND: So proceed with conditions if it was appropriate?

30 MAJ McCALL: Yes.

AVM HARLAND: Thanks.

35 LTCOL HEALEY: Nothing arising, Madam Chair.

MS McMURDO: Thank you.

LTCOL HEALEY: Thank you, sir.

40 MS McMURDO: Yes, next application, please?

<CROSS-EXAMINATION BY FLTLT SEEFELD

5 FLTLT SEEFELD: Good morning, sir. My name is FLTLT Scott Seefeld. I act for D10. Perhaps if you could just take a moment just to look on the schedule in front of you to see who D10 is, please?

MAJ McCALL: Yes.

10 FLTLT SEEFELD: Sir, you were giving evidence yesterday about Chapter 2 of STANMAN and, in particular, evidence about if aircraft were being operated outside of the standard conditions set out in Chapter 2 of STANMAN. Do you recall that?

15 MAJ McCALL: In the nominal conditions.

FLTLT SEEFELD: “Nominal”, is that the right word?

MAJ McCALL: Correct.

20 FLTLT SEEFELD: And your evidence was that in those circumstances – you said these words – that “you would be required to assess the risk and deal with the risk”. That’s correct?

25 MAJ McCALL: Yes.

FLTLT SEEFELD: I just want to look at those words, “deal with the risk”, and the methods by which one might deal with the risk. Would it be fair to say one method – and this is perhaps a statement of the obvious – but one could deal with a risk by having a Risk Management Plan which had in it hazard controls to deal with the risk? That would be one method. Yes?

30 MAJ McCALL: Yes.

35 FLTLT SEEFELD: Another method – and I think it was touched upon a few moments ago – would be within Standing Instructions. Standing Instructions might have in them some way of dealing with the particular identified risk, yes?

40 MAJ McCALL: Yes.

FLTLT SEEFELD: You also gave evidence yesterday about audits being carried out by Standards. Now, I might need some help with the correct terminology for the organisation. Is it called Standards Branch?

45

MAJ McCALL: Yes, Standards Branch was what it was generally called.

5 FLTLT SEEFELD: Well, I'll just use that word, "Standards Branch". Am I correct in understanding that as far as these audits go, that Standing Instructions required Standards Branch to carry out audits of, among other things, Special Operations profiles?

MAJ McCALL: Yes.

10 FLTLT SEEFELD: And Standards Branch did do those audits. Yes?

MAJ McCALL: Yes.

15 FLTLT SEEFELD: Were you in Standards Branch in 2022? You can look at your statement if you want. I apologise, I don't have a copy of it here, but were you there in 2022?

MAJ McCALL: Look, I can't recall.

20 MS McMURDO: If you want to have a look at page 3 of your statement, that's where you've got your - - -

25 FLTLT SEEFELD: Yes, here we go. So it says here, in your statement in the table at the front, "Staff Officer Grade 2, 2022 Army Aviation Standards, MRH-90 Standards Officer".

MAJ McCALL: Yes.

30 FLTLT SEEFELD: Yes, okay. And that designation, SO2, would it be fair to say that there were other SO2 Standards in Standards Branch at that time as well?

MAJ McCALL: Yes. For each aircraft type.

35 FLTLT SEEFELD: Were there other SO2 Standards for MRH, in addition to you?

40 MAJ McCALL: At that stage, I think it was just me. I can't remember if the other Standards Officer had turned up at that stage, '22. I can't recall.

FLTLT SEEFELD: I'm not going to say any person by name. You saw yesterday sometimes that gets a bit sensitive, so I'll just refer to - - -

45 MAJ McCALL: It gets exciting.

5 FLTLT SEEFELD: Yes, and I don't need to. But I'm just going to ask whether you recall something happening, or you're aware of something happening. And if you're not, you can just say so. In particular, in April 2022, are you aware of one of the SO2 Standards carrying out an audit at 6 Avn Regiment?

MAJ McCALL: No, you'll have to - - -

10 FLTLT SEEFELD: You're not aware of it?

MAJ McCALL: No, you'll have to give me a bit more - - -

15 MS McMURDO: If you want to write down a name, you can write the name down and show it to Counsel representing and Counsel Assisting, and we can tender that.

FLTLT SEEFELD: I probably don't need to, ma'am.

20 MS McMURDO: It's not important. Okay, that's all right.

FLTLT SEEFELD: No, I don't think I need to. What I'm just going to put to you is this – or ask you if you're aware of this. Are you aware that an audit was carried out by one of the SO2 Standards at 6 Avn Regiment in April 2022 in respect to Special Operations profiles? Are you aware of that?

25 MAJ McCALL: No. You're just going to have to keep going because, at this stage, no.

30 FLTLT SEEFELD: No, all right, that's fine. Well, further to that, and you've perhaps already answered the question, but I'll ask it anyway. Are you aware that that audit included Special Operations profiles involving overwater by night and in formation profiles? I take it by your earlier answer, you're not aware of that either?

35 MAJ McCALL: No.

FLTLT SEEFELD: No, okay. That's all I have. Thank you.

40 MS McMURDO: Thank you. Any other applications to cross-examine? No.

45 LCDR GRACIE: Ma'am, there is one thing to clarify, but it's worth doing while the witness is here.

MS McMURDO: Yes, go for it.

<FURTHER CROSS-EXAMINATION BY LCDR GRACIE

5

LCDR GRACIE: Yesterday, Major, I took you to the OPEVAL, Exhibit 121, and I asked you some questions where there was a reference to the acronym SPCR.

10

MAJ McCALL: I remember what it is.

LCDR GRACIE: Well, that's fantastic because - - -

15

MAJ McCALL: It's Software Problem Change Request.

LCDR GRACIE: Thank you. The Commonwealth has also helped me with that. I should give you my phone number so that when we're both awake at 2 o'clock, we can discuss these things.

20

MAJ McCALL: Yes. Marvellous.

LCDR GRACIE: So thank you.

25

MAJ McCALL: I look forward to that, yes.

LCDR GRACIE: So, ma'am, sir, Software Proposal Change Request.

MAJ McCALL: No, I think it was a Software Problem.

30

LCDR GRACIE: Problem, was it?

MAJ McCALL: Yes.

35

LCDR GRACIE: That makes more sense.

MS McMURDO: So it's Software Problem?

MAJ McCALL: Change Request.

40

LCDR GRACIE: Change Request.

MS McMURDO: Change Request.

MAJ McCALL: That is something in the software didn't do what it was supposed to do, or you want to change it because it's a problem.

MS McMURDO: Yes.

5

LCDR GRACIE: Thank you, Major. Thank you, sir, ma'am.

MS McMURDO: That's it. Re-examination – or you want to go first? Yes, re-examination please.

10

<RE-EXAMINATION BY MAJ CHAPMAN

15 MAJ CHAPMAN: Thank you, Chair.

MAJ McCall, just a few matters. Do you understand that there's been, as a result of this accident, a DFSB investigation?

20 MAJ McCALL: Yes.

MAJ CHAPMAN: Can I just ask, have you been engaged as a subject matter expert by the DFSB?

25 MAJ McCALL: No.

MAJ CHAPMAN: Just in relation to enquiries into safety, are you familiar with what a CONFIR is?

30 MAJ McCALL: Yes.

MAJ CHAPMAN: In the context of DFSB? And it's C-O-N-F-I-R?

MAJ McCALL: Yes.

35

MAJ CHAPMAN: Can you explain, for the benefit of the Inquiry, what it is and the processes you understand to submit one?

40 MAJ McCALL: No, I haven't really looked at the process. But a CONFIR is an individual who identified something that they are, I'd probably have to say, passionate about and that they would send a report direct to the Commander of the Safety Bureau, bypassing their Command.

45 MAJ CHAPMAN: Now, you referred yesterday in your evidence to a particular matter which you raised with your superior at the time, who has

now been assigned the pseudonym D145. Do you recall that evidence?

MAJ McCALL: Yes.

5 MAJ CHAPMAN: Can I just ask you, did you take any actions in respect of that representation?

MAJ McCALL: No. I argued against the first area, and the original direction was reinforced by second indication.

10

MAJ CHAPMAN: Do you recall some evidence yesterday concerning steps taken in an unusual attitude state, recovery from unusual attitude change?

15 MAJ McCALL: Yes.

MAJ CHAPMAN: Now, do you understand, or are you familiar with, the expression “intervention techniques”?

20 MAJ McCALL: Yes.

MAJ CHAPMAN: As a general proposition, does the MRH STANMAN contain – for the MRH, contain intervention techniques?

25 MAJ McCALL: At the time that I was responsible for it, no, I don’t think so.

MAJ CHAPMAN: And one of the intervention techniques, you’d be familiar with generally, is the verbal intervention; is that right?

30

MAJ McCALL: That’s just part of the non-technical skills associated, yes, with NTS. Which an element of NTS is crew resource management, which is communication in the cockpit, yes.

35 MAJ CHAPMAN: So you confirm. And my question is that, are you familiar with a verbal intervention is a form of intervention technique?

MAJ McCALL: Yes, I suppose I would agree that that could be part of that concept.

40

MAJ CHAPMAN: And are you familiar – I’m sorry to interrupt you, are you familiar with the two-challenge rule?

MAJ McCALL: Yes.

45

MAJ CHAPMAN: Could you just explain, for the benefit of the Inquiry, what the two-challenge rule is, as you understand it?

5 MAJ McCALL: Well, it really comes down to if you're the non-flying pilot or if you're a backseater and you're not happy with something, you present your concern verbally to whoever is doing something that you consider is possibly unsafe or you would like them to modify what they're doing. If that first intervention – using your words there – is not responded and you do it again, you know, there's varying versions of it.

10 But once that second one is given and that behaviour, or that profile or whatever it was, that is ongoing, supposedly, if you're able to, you can take command of the aircraft. But, you know, that also you could have the two-challenge rule external to your aircraft and someone talks to you through the radio, which says, "Hey, don't do that. Hey, don't do that". But there's not much you can do about it external to the aircraft.

20 There's not much you can do about it in the back of the aircraft other than to raise the volume of your concerns. In the front of the aircraft, you might take control of the aircraft.

25 MAJ CHAPMAN: Are you familiar with the articulation of it in this way? The two-challenge rule allows one crew member to automatically assume the duties of another crew member who fails to respond to two consecutive challenges?

MAJ McCALL: That's probably a more succinct way of saying it.

30 MAJ CHAPMAN: Are you familiar with – well, first of all, that articulation of it or one to the effect of it, is your evidence that that was not included in the STANMAN for the MRH?

MAJ McCALL: No, I think there would be a version of it in there.

35 MAJ CHAPMAN: Are you aware - - -

MAJ McCALL: I'd just have to have a look at it, but - - -

40 MAJ CHAPMAN: So your evidence is that you think there's a version of the two-challenge rule in the MRH STANMAN?

45 MAJ McCALL: Yes, there would be. If it's not, I'd be sort of surprised that it's not. But it's also part of the crew resource management or the non-technical skill periodic training. So that element of that – once you're determined to be competent out of the non-technical skills, because those

sorts of interfaces are embedded in the non-technical skills training. So by being competent in the non-technical skills, those elements, which is part of crew resource management are part of that competency.

5 MAJ CHAPMAN: And is what you're talking about there, the area you'd expect it to be in generally described, drawing on your experiences as a Standardisation author and pilot in cockpit automation management philosophy and NTS, non-technical skills?

10 MAJ McCALL: It would be possibly part of that chapter. But more than likely in Chapter 2, Airmanship.

MAJ CHAPMAN: I'm just going to ask you to comment on your recollection of whether there was a requirement in the STANMAN, the
15 MRH STANMAN, for feet wet checks overwater operations?

MAJ McCALL: There's a maritime chapter that was put in that I had
5 Regiment do a lot of, so I think it's in there.

20 MAJ CHAPMAN: So you think it's in there.

MAJ McCALL: But it would also be in the SOPs for the Brigade for maritime operations.

25 MAJ CHAPMAN: And my next question was about maritime operations. So your recollection is that maritime operations is featured in the MRH STANMAN?

MAJ McCALL: Yes, but maritime operations generally, the concept there
30 is that you're working with a maritime surface or subsurface fleet; that is, you're working with the maritime element of the ADF. Flying overwater isn't maritime, it's flying overwater.

MAJ CHAPMAN: There was some evidence that you gave yesterday
35 concerning the concept of cockpit gradient. Do you recall that?

MAJ McCALL: Yes.

MAJ CHAPMAN: And active feedback?

40

MAJ McCALL: Yes.

MAJ CHAPMAN: Are those matters which are expressly set out
45 anywhere in the STANMAN to your recollection, in the MRH STANMAN?

5 MAJ McCALL: Cockpit gradient would be in Chapter 2. But again, it's a sub-element of the non-technical skills competency which is a two, three-year currency requirement.

MAJ CHAPMAN: It's your evidence across all these examples that are given of intervention techniques that your recollection is that they appear in one place or another in the MRH Standards Manual.

10 MAJ McCALL: I'm pretty certain they do, yes.

MAJ CHAPMAN: And if they were not in there, you'd be surprised, I think was your evidence.

15 MAJ McCALL: I think so, yes. I spent a lot of time writing those things.

MAJ CHAPMAN: Thank you.

20 AVM HARLAND: Just on the non-technical skills, when is that training done? Is that done as part of aircraft conversion? Is it done at the Helicopter School, HATS, or - - -

25 MAJ McCALL: I'm pretty certain it starts at 1 FTS. You know, there's a base level non-technical skills and then it's continued through the training continuum. And each aircraft type changes how they're dealing with the crew because you've got individuals coming from 1 FTS, which is pilot instructor, but then they go to 723 pilot instructor. I don't know if they start dealing with aircrewman in the back. And then as you develop through and you get more and more crew, you know, you can have – in a Chinook, you

30 can have a party in the back with the amount of people that you've got there. And they're all doing different things.

35 So you've got to be able to talk and listen and identify how you deal with those crew members in different mission profiles. So it's continual training.

AVM HARLAND: And is the NTS – I think you referred to, like, a refresher requirement or an ongoing requirement.

40 MAJ McCALL: Yes.

AVM HARLAND: Is that tracked in PEX?

MAJ McCALL: Yes.

45

AVM HARLAND: Yes, thank you.

MS McMURDO: Yesterday, you mentioned, and again today in cross-examination, the term “performance class”. What does that mean?

5

MAJ McCALL: Performance class is – have you heard the term, or has the term come out “OEI accountability”, one engine inoperative accountability? Well, the performance class element of it is – the term “accountability”, what’s its definition? The definition of that is performance class you can operate the aircraft to eliminate the risk. And I state that for everyone listening, you eliminate the risk of a single engine failure by operating in Performance Class 1.

10

And I brought up the Qantas aircraft that flew out of Sydney. They took off, essentially – and I’m being fairly broad here – but they took off in a Category A certified aircraft, essentially Performance Class 1, suffered an engine failure and were able to fly the aircraft to an area, reduce its weight, and bring everyone back safely.

15

The MRH is, and was, capable of operating single engine safely. And it was capable of operating Performance Class 1, if you adjust the configuration of the aircraft by reducing its weight. And you can reduce its weight in a number of ways. You can take off things that you don’t need for your mission and you can reduce the weight by reducing your fuel load such that when you’re Performance Class 1 and you’ve planned to operate for a particular mission profile, the engine fails, you can just go, “Ah, we have suffered an engine failure, but we’re operating Performance Class 1. We were authorised Performance Class 1, we planned Performance Class 1, and we know what to do because we’ve been consistently trained to deal with this malfunction”. And it’s absolute safety of the airframe, the people in the airframe, the people under or around the airframe, and the people or installations in the path of the airframe that I plan to fly.

20

25

30

It also includes the surface that you intend to land on and it also includes the training of the techniques of the departure elements and it also allows you to practice and train the landing of that aircraft. Performance Class 1 is the safest profile. Performance Class 2 – and these are elements that came out of the International Civil Aviation Organisation, ICAO – Performance Class 2 is where you now start loading the aircraft up where your take-off or landing area doesn’t meet certain distances requirements.

35

40

The surface might be mud. You know, it’s not a helipad and if you suffer an engine failure early in the departure process, you don’t have the speed or the capacity to continue flying and you have to land. And you might

damage the airframe and, as the instructors and pilots, you train people how to deal with that.

5 And you train people to look at their departure paths or their arrival paths and say, “If I had an engine failure, what would I do? How do I make sure that I don’t hurt people in the aircraft? And how do I make sure that I don’t hurt anyone outside my aircraft?” And I can stop flying the aircraft but I can safely abort the take-off, or I can safely land the aircraft after an engine failure in flight.

10 Because a helicopter is quite expensive to operate and it has a range of payload capabilities, Performance Class 3 is when you suffer an engine failure, you’ve loaded the aircraft up to such a point or you are in an environment where when the engine failure happens, the only option you’ve got is to crash-land.

15 MS McMURDO: So I presume then when you’re flying an MRH-90 you’re aiming to be at Performance Class 1?

20 MAJ McCALL: I always tried to get as close as possible to performance class – mainly operate Performance Class 2 when you’re out in confined areas or training, but again, we’re now talking about exposure of that airframe to risk and the chances of an engine failure. And when COL Langley and I were creating all the performance class process, we
25 determined that in Performance Class 2 we were looking at an exposure window of about 10 to 20 seconds of exposure; that is, to the risk of an engine failure.

30 But if you’re doing training, you know, with a new pilot or with new crew members, why wouldn’t you, in my view, as I said to all the instructors, operate at the most conservative profile that you can to conserve the force and conserve the individuals that you’ve got, so that when you do have an engine failure you know what to do? And it’s – you know, I always
35 presented that a malfunction in the aircraft only becomes an emergency when you mishandle that malfunction.

But if you’ve planned and trained to deal with that malfunction and you have the performance to operate single engine, then deal with your mission profiles and try to be as conservative as possible.

40 MS McMURDO: Thank you.

AVM HARLAND: When Army became aware of the MRH-90, the blade failure issue where there was a heightened possibility of an engine failure,
45 that preceded the Jervis Bay accident. Was there a control put in place for

only operate at Performance Class 1, given there was a heightened exposure to one engine - - -

5 MAJ McCALL: Well, the determination, as I saw, from my point of view, which was fairly low in the engineering area is that there was a heightened risk but it was still within certification limits. So, like, you know, I don't know what the number was, but it was 10 to the minus 9. And it went to 10 to the minus 8.5. And I don't know, but it was identified as still being within the certification limits. And part of the response of the organisation was that we were starting to look at the performance class which allowed you to deal with that problem, which then allowed the system to say, "Well, we're not always operating Performance Class 3. There's no reason to operate this aircraft all the time in Performance Class 3. We're operating within Performance Class 2 and Performance Class 1 most of the time".

15 And as I've said, the certification limit wasn't, you know, from 10 to the minus 9. It came down a bit, but it didn't come down to, "Okay, you're going to suffer an engine failure every one in 100 hours". I'm certain the organisation would've said "No, change the engines".

20 AVM HARLAND: Yes. So I guess, just to follow my question there, when that engine problem became known by the Army and you considered how to manage that risk, albeit slightly elevated, as you've described it, the conversation went to looking at performance class rather than mandating a particular performance class would be followed until the engines went through their repairs.

25 MAJ McCALL: Look, I wasn't involved in those discussions. But, essentially, as an Aircraft Captain responsible for the airframe and operated the aircraft to the most conservative limits at all stages, I don't think it was identified or – again, I wasn't involved in those discussions to say, "We'll just limit ourselves to Performance Class 1". And that would be, essentially, airfield to airfield or operating out into areas of 800 metres for a hard stand, you know, like a road or a very open field - - -

35 AVM HARLAND: And managing your weight and your loads and - - -

40 MAJ McCALL: Yes. That would be restrictive. And that's the concern of individuals going, "Hey, if you make us operate – if you bring in performance class, we're forced to operate at Performance Class 1". No, assess the hazards, identify what your mission requires and deal with and modify those hazards and risks as you need for the mission.

45 AVM HARLAND: So we've heard from other witnesses that the crews or the pilots weren't actually notified of a high potential for engine failure.

MAJ McCALL: I'm pretty certain they were. I mean - - -

AVM HARLAND: That's just what other witnesses have told the Inquiry.

5

MAJ McCALL: Yes. There were a lot of people going through CCBs. I can't remember what CCB – the Control Configuration Boards – and, you know, there's a lot of people at those things, and for them to say, "Oh, we didn't hear about that", the rumour control is fairly good, I'm certain they would've heard of it.

10

AVM HARLAND: I guess, was there a formal notification to them that you're aware?

15

MAJ McCALL: No, not that I'm aware.

AVM HARLAND: Because it was a consistent theme - - -

MAJ McCALL: Yes, it's a consistent theme - - -

20

AVM HARLAND: - - - amongst the line pilots.

MAJ McCALL: Yes. Look, I can't comment on that. It depends. I don't know when the engine issue was. I think it was in the mid-teens.

25

LCDR GRACIE: 2018, the Service Bulletin came in.

MAJ McCALL: Okay, not mid-teens, late teens.

30

MS McMURDO: It would surprise you if the line pilots were not informed before they flew of this issue?

MAJ McCALL: I can't remember if - - -

35

MS McMURDO: No, I'm just saying it would surprise you if they weren't informed?

MAJ McCALL: It would surprise me, yes.

40

MS McMURDO: Thank you.

AVM HARLAND: So you'd consider it to be good practice to let people know that they might have a heightened chance of an engine failure?

45

MAJ McCALL: Yes. But, look, a decision was made at some stage within

the organisation to accept those engines at a lower standard, but that lower standard was still within the certification basis of the engine.

5 MS McMURDO: Yes, but if the pilot who's flying it doesn't know about it, the pilot is not in a very good position to identify the risk and eliminate or deal with it, or mitigate it?

10 MAJ McCALL: You know, I would say yes, I would agree. But it's still a twin-engine aircraft, which means at some stage you're going to suffer a single engine failure. I've had one single engine failure in 40 years.

15 MS McMURDO: Sure. I appreciate that the risk might still have been small and within acceptable limits from one perspective but if you say that the responsibility is on the Captain to eliminate or mitigate the risks, if they don't know the risk, is not informed of the risks, it's very difficult for them to do that, isn't it?

20 MAJ McCALL: It's not difficult for them to do that. It's just part of their DNA when they're operating a twin-engine aircraft. As - - -

MS McMURDO: Yes, but how can you mitigate a risk if you're not aware of it? You say you've always got to mitigate the risk of engine failure.

25 MAJ McCALL: Yes.

MS McMURDO: Yes.

30 MAJ McCALL: Yes, but when you're flying a single engine aircraft, we spent a lot of time teaching people how to deal with the engine failure by order rotation. That caused Army Aviation to be one of the most crashed organisations within the Defence Force because we were doing so many order rotations that we were exposing ourselves to practise order rotations and we were damaging aircraft practising for an engine failure.

35 And that was one of the reasons that our training fleet went to a two-engine fleet, to allow us to operate with two engines so that when we – as one of my instructors said over in the States, “When you're operating a twin-engine helicopter, it's not if you have an engine failure, it's when in your career you will have your engine failure, and you've got to be able to deal with it”. And that's why we spend a lot of time teaching people how to deal with one engine inoperative cases.

40 MS McMURDO: Understand. Thank you.

45 MAJ CHAPMAN: No further questions.

AVM HARLAND: I just have one further one. It's related to performance. And it's just regarding weight and balance of the aircraft. Where would we find the guidance on weight and balance? Is it in the STANMAN or the Flight Manual? And how is that normally done by the crew?

MAJ McCALL: It was Chapter 4, Performance. And we had a specific weight and balance Excel spreadsheet which was technically managed by the engineering authority. That was Airbus.

AVM HARLAND: Yes.

MAJ McCALL: And that Excel spreadsheet was modified for performance class, and all of that information in that Excel spreadsheet was pulled out of the Flight Manual and the operator manual. And that weight and balance and the performance elements also of that weight and balance rolled into the performance elements which were attached to the back of the checklist.

And also, the weight and balance was able to be calculated inside the aircraft by entering into the Display Keyboard Unit, the DKU, and that gave you your performance and your weight and balance up on one of your screens. So when you came in and picked up a bunch of Troops in a hole in the trees, you just said, "How much weight just came on?" You could calculate all the weight. And that was another thing that I liked about the MRH, you could calculate all your weight and balance inside the aircraft, determine what your weight was, determine your safety margin, and then operate safely in accordance with that.

So it was in a number of places, but it was formalised and controlled.

AVM HARLAND: So you have a baseline weight and balance for the aircraft.

MAJ McCALL: Yes.

AVM HARLAND: And then you have an active way of adjusting it based on your load and fuel, and - - -

MAJ McCALL: Yes.

AVM HARLAND: Yes, okay.

MAJ McCALL: And an active way of cross-checking, which was in the hard copy checklist. So you could then determine what your performance class was and you could adjust your in ground effect or out of ground effect weight margins.

5

AVM HARLAND: Great. Thank you.

MS McMURDO: Nothing further?

10 MAJ CHAPMAN: Nothing further.

MS McMURDO: Thank you very much, MAJ McCall. We really appreciate that you've tried very hard to assist the Inquiry in every way you could. I hope you feel as though you've had the opportunity to give the Inquiry all the information you wanted to give us. Yes?

15

MAJ McCALL: Yes, thank you.

MS McMURDO: And as I said yesterday, you know, you've been giving evidence for a long time. Sometimes you were asked a lot of questions, persistent questions. Please don't hesitate to use the support facilities that are available to you if you need them.

20

MAJ McCALL: Thank you, ma'am.

25

MS McMURDO: Thank you very much. You're excused. We'll have a 10-minute break now, thank you.

30 <WITNESS WITHDREW

HEARING ADJOURNED

35

HEARING RESUMED

MS McMURDO: Yes, MAJ Chapman.

40

MAJ CHAPMAN: Thank you, Chair. The next witness to be called is COL Tim Connolly, noting that COL Connolly will be appearing via AVL means, pursuant to a Direction that you've given.

45 MS McMURDO: Yes, we have COL Connolly on the line now.

<COL TIMOTHY SEAN CONNOLLY, Affirmed

5

<EXAMINATION-IN-CHIEF BY MAJ CHAPMAN

MS McMURDO: It's still morning, COL Connolly, here in Queensland.

10

COL CONNOLLY: It's just after midday here, so I apologise if I'm in the wrong time zone.

MAJ CHAPMAN: Thank you, COL Connolly. My name is
15 MAJ Chapman. I'm one of Counsel Assisting. Can you see and hear me?

COL CONNOLLY: I can't see, but I can hear, thank you. I can see you now.

20 MAJ CHAPMAN: Thank you very much. Can you see the Inquiry Board?

COL CONNOLLY: I just did, yes. I'm assuming the camera's going to – yes, I do.

25

MAJ CHAPMAN: Sir, can you please state your full name?

COL CONNOLLY: Timothy Sean Connolly.

30 MAJ CHAPMAN: Can you confirm that you have received each of the following documents prior to today, and I'll just list them: a section 23 Notice requiring your appearance to give evidence?

COL CONNOLLY: Yes.

35

MAJ CHAPMAN: An extract of the Inquiry Directions?

COL CONNOLLY: Yes.

40 MAJ CHAPMAN: A copy of my Appointment as an Assistant IGADF?

COL CONNOLLY: Yes.

45 MAJ CHAPMAN: Frequently Asked Questions Guide for Witnesses at IGADF Inquiries?

COL CONNOLLY: Yes.

5 MAJ CHAPMAN: And a Privacy Notice for witnesses giving evidence?

COL CONNOLLY: I'll need to check that.

10 MAJ CHAPMAN: Thank you. We can come back to that. Have you Prepared, for the purposes of appearing today, a statement?

COL CONNOLLY: I have.

MAJ CHAPMAN: Do you have a copy with you there, sir?

15 COL CONNOLLY: I do.

MAJ CHAPMAN: Is it a statement which is dated 20 February 2025?

20 COL CONNOLLY: That's correct.

MAJ CHAPMAN: Is it four pages in length?

COL CONNOLLY: It is indeed.

25 MAJ CHAPMAN: Then there are no annexures?

COL CONNOLLY: No annexures, no.

30 MAJ CHAPMAN: Do you wish to make any amendments to that document?

COL CONNOLLY: No.

35 MAJ CHAPMAN: Thank you, sir. Chair, I tender the statement of COL Timothy Sean Connolly dated 20 February 2025.

MS McMURDO: Exhibit 126.

40 MAJ CHAPMAN: I will hand up a tender copy.

MS McMURDO: Thank you.

45 **#EXHIBIT 126 - STATEMENT OF COL CONNOLLY**

5 MAJ CHAPMAN: Sir, just before I begin, I'd like to remind you of security obligations and if there's anything which I ask you or you're proposing to reply with which you consider may get us into security territory, could you please let me know, and we may need to go into a private hearing about those matters.

COL CONNOLLY: Understood.

10 MAJ CHAPMAN: Thank you. Sir, can I just confirm that, together with your section 23 Notice, you received a number of annexures – two annexures, and they were respectively a decision brief to BRIG Fenwick which is dated 20 March 2020?

15 COL CONNOLLY: Yes.

MAJ CHAPMAN: I'll be referring to that as the March decision brief. The second is a decision brief also to BRIG Fenwick in April 2020.

20 COL CONNOLLY: Yes.

25 MAJ CHAPMAN: Thank you, sir. Sir, if I may, I'll just begin with some brief background, what you have to say about your professional experience which is at page 1, paragraph 4. And I'll just quickly run through that and ask you to agree, sir. So you commenced service with the Army in July 1988, graduating from the Royal Military College – Duntroon in December '89.

30 COL CONNOLLY: Correct.

MAJ CHAPMAN: You commissioned into the Royal Corps Australian Electrical and Mechanical Engineers. Correct?

35 COL CONNOLLY: That's correct.

MAJ CHAPMAN: You were then selected and served in another Regiment that you identify at paragraph 4, between 1995 and 1999.

40 COL CONNOLLY: That's correct.

MAJ CHAPMAN: You commenced pilot training with Army in 1999 and ultimately went to Black Hawks with the 5th Aviation Regiment.

45 COL CONNOLLY: That is correct.

MAJ CHAPMAN: Your career, you've served in a number of roles, both flying, Command and staff roles. Is that accurate?

5 COL CONNOLLY: That's correct.

MAJ CHAPMAN: You've also served as an Exchange Officer flying with Army in Timor-Leste, Afghanistan, and Iraq.

10 COL CONNOLLY: Yes.

MAJ CHAPMAN: You've served as a staff role Director Land Force Design; is that correct?

15 COL CONNOLLY: In Army Headquarters, that's correct.

MAJ CHAPMAN: Relevant for this Inquiry is the Director Aviation Capability Management, DACM, in the period January 2019 to November 2020. Is that right?

20 COL CONNOLLY: That's correct.

MAJ CHAPMAN: Sir, your flying experience includes approximately 1950 hours and you are qualified Maintenance Test Pilot and Special Operations Captain, both on the Black Hawk.

25 COL CONNOLLY: That's correct.

MAJ CHAPMAN: Your tertiary qualifications include a Masters of Strategy and Management; is that correct?

30 COL CONNOLLY: Yes.

MAJ CHAPMAN: Now, I'll just turn to page 6 of your statement where you say you transferred from the full-time Army to the Reserves in March 2022. Correct?

35 COL CONNOLLY: At paragraph 6, that's correct.

MAJ CHAPMAN: Thank you. You say you ceased providing effective support as a Reservist around May 2023, and went inactive at that time?

40 COL CONNOLLY: Yes. After I – that is correct, yes.

MAJ CHAPMAN: And that you've been inactive in that category, from a SERCAT point of view, from May 2023 to the present. And you're

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currently in civilian employment?

COL CONNOLLY: Yes, I can't remember the exact date, but it was around about May '23. And, yes, I am in civilian employment.

5

MAJ CHAPMAN: Thank you, sir. You were asked by the Inquiry some questions in your Notice concerning your time as the Director of Army Capability Management, and you respond at paragraph 7 of your statement. Correct?

10

COL CONNOLLY: Yes.

MAJ CHAPMAN: We've established that you were in that role between January 2019 and November 2020?

15

COL CONNOLLY: Correct.

MAJ CHAPMAN: Your immediate supervisor was the Director-General Aviation, BRIG Fenwick, at the time?

20

COL CONNOLLY: That's correct.

MAJ CHAPMAN: When asked by the Inquiry to identify principal staff, you say you don't recall, although you recall LTCOL Karl Hamlyn as the SO1 Troop Lift Helicopters. Is that right?

25

COL CONNOLLY: That's correct.

MAJ CHAPMAN: Sir, you give a general description of the role and responsibilities of the appointment of DACM, describing the role as including to manage the in-service Aviation platforms and systems in conjunction with supporting Systems Program Office within the Capability and Sustainment Group, CASG. Do you see that?

30

COL CONNOLLY: On behalf of the Capability Manager, that's correct.

35

MAJ CHAPMAN: Thank you. Just to unpack that a little if I may, sir, when you say "in-service Aviation platforms", the Inquiry is to understand that DACM is not concerned with the procurement for a platform, in this case, the MRH. Is that right?

40

COL CONNOLLY: The Capability Management System, effectively. Certainly, if Army Aviation had an element that was largely focused on the future and the projects for new items, once they transitioned into service,

then DACM would assume the responsibility for supporting the management of them in service.

5 MAJ CHAPMAN: Thank you, sir. The Inquiry has heard some evidence concerning the AASPO, the Army Aviation Sustainment Project Office. Where does that office fit within the structure that you've just described?

10 COL CONNOLLY: The System Program Office, and every platform has one, is an element of the Capability Acquisition and Sustainment Group. That supports the Capability Manager to sustain a system.

MAJ CHAPMAN: Sorry, sir, continue.

15 COL CONNOLLY: Yes. So there's an element on the Army, Navy, Air Force side, so on the services side, which is the Capability Manager, that defines effectively what the service requires. There is an element in CASG that actually does the delivery side of the capability – sorry, delivers it to the Capability Manager in a fit for site, fit purpose.

20 MAJ CHAPMAN: So you said that the AASPO is within CASG. Is it independent of the Program Office? They're separate offices. Correct?

COL CONNOLLY: No, it is the Program Office.

25 MAJ CHAPMAN: It is the Program Office, right.

COL CONNOLLY: Not the Project Office, the Program Office.

30 MAJ CHAPMAN: Program Office. Thank you. I'd just like to ask you now some questions about the March 2020 decision brief, if you've got that to hand? Now, for the Inquiry's benefit, that appears as – I'll just get a copy of it – this is COL Lynch's statement, which is Exhibit 104. Sir, the Inquiry, I am taking you to tab 2 of Exhibit 104.

35 COL CONNOLLY: Are you talking about the March brief or are you talking about the April brief?

MAJ CHAPMAN: The March brief, sir.

40 COL CONNOLLY: Okay.

MAJ CHAPMAN: The one with the annotation "20/3". Do you have that?

45

COL CONNOLLY: I think that's the April brief.

MAJ CHAPMAN: No, sir, it's the one cleared by you.

5 COL CONNOLLY: Got it, yes.

MAJ CHAPMAN: Yes. That's the March brief, as I've described.

10 COL CONNOLLY: That's correct.

MAJ CHAPMAN: Do you recognise that to be the decision brief that you cleared, sir.

15 COL CONNOLLY: Yes.

MAJ CHAPMAN: It was drafted by COL Hamlyn and addressed to BRIG Fenwick.

20 COL CONNOLLY: Yes.

MAJ CHAPMAN: In response to a question about the role of DACM, you say in your statement that it's a role that's to coordinate the testing and evaluation, present a recommendation to the Director-General for approval, and then work with the Systems Program Office and Military Type Certificate Holder to gain service release. Correct?

25 COL CONNOLLY: That's correct.

MAJ CHAPMAN: You describe in your statement the purpose of this particular release. So this is the March decision brief. We have heard evidence about this from other witnesses. One purpose was to include distance to go information in the HUD for the benefit of the pilots. Correct?

30 COL CONNOLLY: That is correct.

35 MAJ CHAPMAN: That was a feature that was included in support of the introduction of the MRH into the Special Operations role?

40 COL CONNOLLY: It was an essential requirement for that role. That's correct.

MAJ CHAPMAN: Is the Inquiry to understand – and there has been some evidence about this – but 5.10 – and you understand I'm referring to TopOwl version 5.10 there?

45

COL CONNOLLY: The HMSD, yes.

MAJ CHAPMAN: HMSD. It was developed at the request of the German Forces. Do you understand that to be the case?

5

COL CONNOLLY: That's what I understood.

MAJ CHAPMAN: You say at paragraph 12 that it was the only known version that incorporated this option. Do you see those words?

10

COL CONNOLLY: That was my understanding.

MAJ CHAPMAN: Just to clarify, sir, when you say "this option", you're referring to the distance to go feature on the HMSD; is that right?

15

COL CONNOLLY: That's correct.

MAJ CHAPMAN: I'll just ask you some questions about the AATES testing which occurred in June 2019, and I'm referring there to the testing of HMSD 5.10 by the Army Aviation Test and Evaluation Section. Are you familiar with that, sir?

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COL CONNOLLY: I'm familiar with AATES, yes.

MAJ CHAPMAN: Are you familiar with the testing that they conducted in June 2019?

25

COL CONNOLLY: I don't recall the specifics of the testing, but they are tasked to conduct testing on all the aircraft at various stages of their life, and I assume that would have been one of them.

30

MAJ CHAPMAN: Yes. I'm just asking you, you recall that testing was conducted by AATES in respect of HMSD 5.10 at the time?

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COL CONNOLLY: Yes, that's correct.

MAJ CHAPMAN: You say in the balance of paragraph 12 – and I paraphrase – that while you understood the limitations expressed by AATES, you considered that they could be mitigated by the measures identified by Standards; is that right?

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COL CONNOLLY: By measures identified by the Standards Section.

MAJ CHAPMAN: By reference to the Standards Section, you're now talking about the Operational Evaluation activity that was conducted

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following the AATES testing; is that right?

5 COL CONNOLLY: I think it followed immediately afterwards, but yes, I'm referring to the Standards Section with the SO1 and SO2 Standards for the various aircraft type who would then define what would be appropriate mitigation measures.

MAJ CHAPMAN: Yes. And that you assessed – your words –
10 *on balance, that with these control measures in place, version 5.10 offered the improvements and should be implemented.*

Is that right?

15 COL CONNOLLY: Yes, it offered more than just that particular Functionality, it improved some other areas as well. Which I can't quite recall what all of them were, but it was an improvement over version 4.0, which was the version we had.

20 MAJ CHAPMAN: At paragraph 12 you offer the qualification at the end of the paragraph to say –
while we pursued the matter in future platform updates.

25 Do you see that?

COL CONNOLLY: Yes.

30 MAJ CHAPMAN: Just on that point, do you agree, sir, that the statement at least suggests that steps were being taken or were planned to be taken to go back to the original equipment manufacturer to apply to have the ambiguous attitude issue corrected in a future update? Would you agree with that?

35 COL CONNOLLY: Yes, along with a list of other functionalities that we would also like to see in the aircraft.

40 MAJ CHAPMAN: My question, sir, are you aware of anyone, being yourself or your staff, having contacted SUZ? Pausing there. Do you agree SUZ is the equipment manufacturer for the software? Do you agree with that?

45 COL CONNOLLY: I would not have. If anyone were to, I would have expected it would have been CASG and the Program Office would have contacted them. But I did not have any direct contact with SUZ.

MAJ CHAPMAN: I'll just separate that out just to make sure we're clear. So do you agree that SUZ was responsible for producing that software that we're discussing, 5.10?

5 COL CONNOLLY: I don't know who specifically is responsible for producing the software.

MAJ CHAPMAN: Are you aware if an amendment of the kind or a change of the kind that you're suggesting in this paragraph being contemplated, that would be something to go to SUZ?

10 COL CONNOLLY: Listen, I expect it would be, yes.

MAJ CHAPMAN: I think it's your evidence, before I interrupted that question with another question, that you didn't yourself make any application or enquiry of SUZ in respect of a fix to the ambiguous attitude presentation. Is that right?

15 COL CONNOLLY: No, I would not have from a Capability Manager side, anyway.

MAJ CHAPMAN: Do you know why not, given that what is said is that this would be pursued in future updates? So that's a reference in this document. Do you see the reference to "pursued in future updates"?

20 COL CONNOLLY: Yes.

MAJ CHAPMAN: Did you mean by that that efforts would be made or there was at least a plan to seek a fix for this ambiguous attitude in future updates. Do you agree with that?

25 COL CONNOLLY: Let me just explain. So the aircraft was purchased with a life of type of approximately 30 years. Like most major platforms, they need to be both maintained throughout their life. They need to be kept contemporary and, particularly for aircraft or any platform that has a relatively long life, there is a high likelihood that somewhere around about the middle of its life you would undertake something that is reasonably substantial.

30 COL CONNOLLY: Now, that was being contemplated, and it was expected. Most mid-life upgrades are quite large in nature, and it would be expected that if we were to make a significant change, that would be the ideal time to inject a change.

35 COL CONNOLLY: Now, that was being contemplated, and it was expected. Most mid-life upgrades are quite large in nature, and it would be expected that if we were to make a significant change, that would be the ideal time to inject a change.

40 COL CONNOLLY: Now, that was being contemplated, and it was expected. Most mid-life upgrades are quite large in nature, and it would be expected that if we were to make a significant change, that would be the ideal time to inject a change.

45 MAJ CHAPMAN: Thank you. That's understood, but returning to your

specific reference on paragraph 12, “should be implemented”. So that is version 5.10. Do you agree with that?

COL CONNOLLY: Yes.

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MAJ CHAPMAN: “While we pursued the matter in future platforms.” My question to you is, what is your knowledge, your state of knowledge, of how that issue is being pursued in future platforms? What steps were being taken, in short?

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COL CONNOLLY: Well, we were drafting up a list of all of, I guess, the requirements that we could conceive of that would be put into a future mid-life upgrade. This would just be added to the list.

15

MAJ CHAPMAN: Sorry to interrupt you, sir. When you say “would be”, do you know whether it was added to any list, or you’re just saying that was the plan?

COL CONNOLLY: That was the plan.

20

MAJ CHAPMAN: Just to return to paragraph 12 briefly, do we take it from paragraph 12, sir, that from your point of view it was reasonable to accept the risks associated with 5.10 in circumstances where it offered the benefit to the SO operations and you were satisfied that Standards had proposed controls to adequately manage the risk? Do you agree with that?

25

COL CONNOLLY: I think my statement is that it be implemented. My recommendation is that it be implemented provided there were the necessary control measures put in place. I would expect that Standards would define them quite specifically in order to mitigate the perceived risk.

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MAJ CHAPMAN: Was it on the basis that you expected Standards to do something that you gave the recommendation to the Director-General to approve service release of version 5.10?

35

COL CONNOLLY: Yes.

MAJ CHAPMAN: So it was on an expectation, as opposed to knowledge of them doing something?

40

COL CONNOLLY: Well, from memory, I’m just trying to think of the – could you just bear with me as I just double-check that brief. Yes, I cannot recall the specifics of their particular recommendations, but it would have been to provide necessary control measures around flight, and as manifested through training and or changes to any of the publications.

45

MAJ CHAPMAN: Thank you. So - - -

AVM HARLAND: Did you - - -

5 MAJ CHAPMAN: Sorry, sir.

AVM HARLAND: Excuse me. Did you consult with Standards to see if controls were available and appropriate, or was there an assumption made that they would just make it so?

10 COL CONNOLLY: No, sir. So the brief was drafted by my SO1, who I believe had that conversation with Standards.

15 AVM HARLAND: Okay, thank you.

COL CONNOLLY: And they were consulted clearly on the drafting of that brief.

20 AVM HARLAND: So, in the background, there was an expectation that an appropriate control could be put in place.

COL CONNOLLY: Yes.

25 AVM HARLAND: Okay, thank you.

MAJ CHAPMAN: Sir, moving on to paragraph 13 of your statement now, and you say that you had regular and frequent discussions with BRIG Fenwick, COL Lynch, and other staff. Do you see that?

30 COL CONNOLLY: Yes, I see that in the statement.

MAJ CHAPMAN: Yes. Thank you. Though you say you cannot recall any specific conversation that focused on service release of HMSD 5.10. Correct?

35 COL CONNOLLY: That's correct. I had many conversations with most of those individuals named, as a function of my job, but I cannot recall a specific one over the 5.1.

40 MS McMURDO: Do you recall that the AATES team maintained their concerns after the OPEVAL was conducted, and despite the mitigating of the risks that was suggested by the OPEVAL, that AATES maintained their belief or their opinion that the version 5.10 was unacceptable?

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COL CONNOLLY: I note that in the brief that I cleared, and I also note that in the subsequent briefs, which was referred to as the April DB, which I cannot recall ever seeing. Outside of that, I'm not aware of their continued reservations.

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MS McMURDO: Thank you.

MAJ CHAPMAN: So do you agree that from the time that AATES conducted its testing in June 2019 through to March 2020, when you recommended service release in this minute, that issue of the ambiguous symbology was a matter of significance within Capability and within the Standards teams?

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COL CONNOLLY: Well, we have test crew for a reason, and when they undertake testing, anything that is deemed – that they would deem as significant warrants cries for attention, absolutely.

15

MAJ CHAPMAN: But it was particularly significant, I would suggest, given you had the Flight Test Organisation giving an “unacceptable” recommendation.

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COL CONNOLLY: Are you asking me whether I agree with their recommendation, or are you asking me whether I - - -

MAJ CHAPMAN: No, I'm asking – sorry, I'm asking you – I'm putting to you that given the “unacceptable” finding made by AATES, this was a matter of significance that was discussed among DACM and the senior staff in the section.

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COL CONNOLLY: And I would expect with all instances where there was a disagreement, whether it even be small or large, that there would be consultation between all of the respective subject matter experts.

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MAJ CHAPMAN: Is the answer to that question, sir, “yes”?

35

COL CONNOLLY: Yes, my expectation is that there would have been consultation, absolutely.

MAJ CHAPMAN: And did that include discussions with the Director-General Aviation, BRIG Fenwick?

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COL CONNOLLY: Sorry, my discussions with him?

MAJ CHAPMAN: Yes.

45

COL CONNOLLY: Listen, I cannot recall having a conversation with him about version 5.1.

5 MAJ CHAPMAN: You can't recall having – can you recall having a conversation with COL Lynch about 5.1, specifically?

COL CONNOLLY: Listen, I'm not saying I didn't; I'm saying I cannot recall having a very specific conversation that you referred to with either of those two individuals.

10 MAJ CHAPMAN: So your evidence that you do not recall – you're not denying it, though you do not do not recall having any specific conversations about your recommendation for service release of version 5.10; is that right?

15 COL CONNOLLY: I do not recall that. Correct.

MAJ CHAPMAN: Now, when the decision brief – and this is the March one – was being issued, and it was ultimately approved, did you, as far as you can recall, receive any repechages or requests for information from the Director-General about that particular brief?

20 COL CONNOLLY: Once again, I cannot recall – I can't recall if he did or not.

25 MAJ CHAPMAN: So moving on, did you receive a copy of the AATES report around the time it was delivered in June 2019?

COL CONNOLLY: Once again, I cannot recall it coming direct to me, no.

30 MAJ CHAPMAN: And you can't recall it. When do you say you first saw the AATES report?

COL CONNOLLY: Well, it would have been during – if I did, it would have been during the presentation of the clearance of this brief.

35 MAJ CHAPMAN: And do you accept, sir, that the “unacceptable” finding made in the AATES report was the most adverse finding that the Flight Test Organisation could make in respect of this software upgrade?

40 COL CONNOLLY: Yes.

MAJ CHAPMAN: And do I have the narrative right, that following the AATES report, did you convene the TERC – and that's the Test and Evaluation Review Committee?

45

COL CONNOLLY: I did not personally convene it, but one would have been convened.

5 MAJ CHAPMAN: And did you attend that TERC, sir?

COL CONNOLLY: No, I did not.

MAJ CHAPMAN: Could you, in the - - -

10 COL CONNOLLY: Sorry, I do not recall attending it.

MAJ CHAPMAN: Yes. Just for the benefit of the Inquiry, can you just explain in your own words the function of the TERC?

15 COL CONNOLLY: Well, as you indicated, it's a Test and Evaluation Review process where the outcomes effectively of a test program would be discussed amongst a number of players, and a set of options provided for how to proceed.

20 MAJ CHAPMAN: And did a TERC necessarily follow every Test and Evaluation Report from the Flight Test Organisation, for example, or was it something that was discretionary?

25 COL CONNOLLY: I don't know of an instance where we wouldn't. So my expectation is clearly we would have one.

MAJ CHAPMAN: And accepting your evidence that you said you may or may not have been at that one, or you don't have a recollection of it, have you seen any minutes, or did you at the time see any minutes of that particular TERC?

30

COL CONNOLLY: I don't recall seeing anything.

35 MAJ CHAPMAN: And noting one was convened, or you're aware one was convened, do you know whether – or you would expect that representatives of AATES and DACM would have been present?

40 COL CONNOLLY: I would have expected there'd be representation from AATES, from DACM. There may very well – there probably would have been representatives from Standards. And depending on what it was that was being tested, there probably would be representatives from the Program Office.

45 MAJ CHAPMAN: Is the TERC something that the Director-General

attended or not commonly?

COL CONNOLLY: No.

5 MAJ CHAPMAN: Are you aware of who – I know you were not there, but from other knowledge of who briefed at that particular TERC, or you just don't have a recollection of it?

10 COL CONNOLLY: I don't have a recollection. Now, when you say "briefed", are you talking about who led it or are you talking about who provided input?

MAJ CHAPMAN: Specifically on the basis that AATES were there, who provided the brief of the outcome of the AATES report?

15 COL CONNOLLY: I cannot tell you.

MAJ CHAPMAN: Now, sir, there is some evidence that as a result of the TERC, that the Chair directed that further testing be undertaken. Is that your understanding of it?

20 COL CONNOLLY: Well, I'm not aware of the outcome of the TERC, so I don't – and I haven't seen the minutes, so I don't know if that was the outcome.

25 MAJ CHAPMAN: So your knowledge of the matter is that, not being there, if there was further testing, it would have been directed by LTCOL Hamlyn, who was attending in your stead; is that right?

30 COL CONNOLLY: If he was attending in my stead, and if there was a requirement to for the testing, yes, it would have been directed from me.

MAJ CHAPMAN: Were you involved at all in the decision taken to conduct further testing?

35 COL CONNOLLY: I do not recall that, no.

MAJ CHAPMAN: If further testing was deemed to be required in respect of an AATES report, would you expect that testing to be conducted by AATES or to proceed by way of an OPEVAL?

40 COL CONNOLLY: Once again, it's going to depend on the nature of the test that would be required, and if it actually required a flight test, then it would be an appropriate Flight Test Organisation.

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MAJ CHAPMAN: So do I understand your evidence then that, on the basis that this further testing, take it from me, required flight testing, that do you consider it would be unusual that the further testing was conducted by Standards and not by a Flight Test Organisation?

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COL CONNOLLY: Well, once again, the term “flight test” is a very specific term. It does not mean no flying. It means a very specific type of flying. It might be that the outcome is to amend a publication. It could be that the requirement is to conduct an Operational Evaluation. It could be – there are a number of options that would present themselves as a result of a TERC.

10

MAJ CHAPMAN: Well, let’s put this in the context of this matter. You’re aware, aren’t you, of the nature of the testing that was undertaken in the OPEVAL generally?

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COL CONNOLLY: Yes. Based on the other brief, yes.

MAJ CHAPMAN: So understanding the nature of that testing, had it not been directed to Standards and you were involved, would you have directed that testing to be conducted by AATES and not Standards?

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COL CONNOLLY: Not necessarily.

MAJ CHAPMAN: And what would be the considerations that come to bear on whether or not that would go to AATES or Standards, that particular testing?

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COL CONNOLLY: Listen, I think we’re probably venturing down the path here of trying to understand the risk management methodology. Is that where we’re trying to get to?

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MAJ CHAPMAN: Well, I’m just asking the question about considerations that would be bearing on a decision to direct flight testing of this nature to an organisation other than the Flight Test Organisation.

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COL CONNOLLY: Well, it might have been that there were – you’re asking me to hypothesise now.

MAJ CHAPMAN: I am.

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COL CONNOLLY: And there are good cases for getting the Flight Test Organisation to either redo the testing – potentially to redo it with some altered parameters, potentially to get another Flight Test Organisation – so not AATES in this case – to assist. It could be that the outcome was to do

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an Operational Evaluation to define what other ways you could mitigate the issue with.

5 MAJ CHAPMAN: When you became aware that Standards was conducting the Operational Evaluation, did you raise any issue with anyone with Standards conducting it and not the Flight Test Organisation?

10 COL CONNOLLY: I'm not aware of the outcome of the TERC, but the notion - - -

MAJ CHAPMAN: That's not my question, sir. My question is, when you became aware of the Operational Evaluation being conducted by Standards, did you raise with anyone why, for example, this isn't being conducted by AATES?

15 COL CONNOLLY: No.

MAJ CHAPMAN: Thank you. I'll just take you further on in your statement to where it discussed the OT-CRM. So that's paragraph 17. And you say that you cannot recall when the risks were recorded in the OT-CRM. Do you see that?

COL CONNOLLY: That's correct.

25 MAJ CHAPMAN: And do you agree, sir, that the OT-CRM – and would you mind just expanding on what that refers to, the acronym?

COL CONNOLLY: Yes, it's the Operational and Test Combined Risk Management.

30 MAJ CHAPMAN: Grateful.

COL CONNOLLY: So a summary or collation of known risks.

35 MAJ CHAPMAN: So it's effectively – put another way, it's a risk register. Would you agree with that?

COL CONNOLLY: That's correct.

40 MAJ CHAPMAN: And in the context of version 5.10, would you expect that a risk assessment to be conducted in support of a recommendation for service release?

COL CONNOLLY: Yes, I would expect that in the process to get to final service release, all of the identified control measures would be annotated and put into the OT-CRM.

5 MAJ CHAPMAN: So in respect of your brief to the Director-General, is any risk assessment – accepting this is DACM – conducted at that point in support of your decision brief?

10 COL CONNOLLY: Well, at the time, I'm reliant upon some of the advice and the recommendations that would come from Standards.

15 MAJ CHAPMAN: And is it typically the case that in respect of a modification like this, that the risk assessment is more a function of the Operational Airworthiness Section?

20 COL CONNOLLY: Well, operation on the technical side don't operate in isolation. And occasionally – in this instance, it would have been probably an operational risk calculation that would have been informed by the technical outcomes.

25 MAJ CHAPMAN: Thank you. And so the risk assessment, on your evidence, is probably conducted in order so that it can be briefed to the decision-maker – here, the Director-General – to support their own risk assessment, and a decision about how to proceed?

COL CONNOLLY: Sorry, could you just reframe that?

30 MAJ CHAPMAN: So I think your evidence is you accept that a risk assessment would be conducted to be briefed to the decision-maker – here, the Director-General – in support of their own decision-making as to risk assessment.

35 COL CONNOLLY: Well, there's a process to get the actual service release undertaken. And in this case, the Director-General's approval is just one of the steps. It would still need to go through the Configuration Control Board and be approved by the Type Certificate Holder.

40 MAJ CHAPMAN: There has been quite a lot of evidence about the CCB, but if I could take you back? My question was, would the DG – the Director-General Aviation is here considering a decision brief to approve service release of an update. Correct?

COL CONNOLLY: Yes.

45 MAJ CHAPMAN: And in doing so, the brief to the Director-General is

some form of risk assessment. Do you agree with that? Or you would expect a form of risk assessment to be briefed to the Director-General?

5 COL CONNOLLY: Well, in many cases – well, in the case of the brief, part of the risk assessment is undertaken inside that brief, and it's provided, but I do – I think to your point, you're referring to a more detailed assessment and collation of the risks. That would have been a separate document.

10 MAJ CHAPMAN: Well, let me put it this way. So returning to paragraph 17 of your statement, you say you cannot recall when the risks were recorded in the OT-CRM. Do you see that?

15 COL CONNOLLY: Yes.

MAJ CHAPMAN: So isn't that to suggest that you were aware that a risk assessment was undertaken, recorded at some stage, but you can't be sure when it was uploaded into the OT-CRM? Is that what you're suggesting there?

20 COL CONNOLLY: Yes, I cannot recall when the risks were loaded into the OT-CRM.

25 MAJ CHAPMAN: Though you say that you're certain, are you, that a risk assessment was recorded in the OT-CRM in respect of version 5.10? Is that your evidence?

COL CONNOLLY: No, I'm saying I cannot recall them being recorded.

30 MAJ CHAPMAN: Okay.

MS McMURDO: And it should have been recorded?

35 COL CONNOLLY: If the decision – Madam Chair, if the decision was made and we were to continue down that path – because there's not a risk until you actually go – until the decision is actually made. At that point in time, it would have been recorded in the OT-CRM.

40 MS McMURDO: Well, it should have been. It should have been.

COL CONNOLLY: Yes.

45 MS McMURDO: It should have been, and you would expect it to have been.

COL CONNOLLY: I expect it should have been, yes.

5 MAJ CHAPMAN: But you don't – sorry, Chair. You don't have a recollection specifically of this, of anything being recorded in the OT-CRM?

COL CONNOLLY: No, I don't. I do not personally oversee the OT-CRM.

10 MAJ CHAPMAN: So the Inquiry has heard evidence to the effect, sir, that there's no record of a risk assessment in respect of version 5.10 on the OT-CRM. Does that surprise you?

15 COL CONNOLLY: It does.

MAJ CHAPMAN: Can I just ask you to read, without repeating due to the security classification, paragraph 9 of the decision brief, which is on page 2. And just let me know when you've read that.

20 COL CONNOLLY: Yes, I've read that.

MAJ CHAPMAN: Now, I think you address this at paragraph 18 of your statement, so I'd ask you to go there. Can I just ask you to reflect on the last sentence in paragraph 9 of the March decision brief? And tell me when
25 you've read that.

COL CONNOLLY: Yes.

MAJ CHAPMAN: And that generally refers to active steps to propose to
30 be taken to address risks. Do you agree with that?

COL CONNOLLY:

35 *To investigate options of future - - -*

MAJ CHAPMAN: No, I'd ask you not to read it, sir, because of the - - -

COL CONNOLLY: Yes.

40 MAJ CHAPMAN: Thank you.

COL CONNOLLY: Yes.

45 MAJ CHAPMAN: And if we go to paragraph 18 of your statement, you say that there was underway, in effect, these steps to scope the changes

during the mid-life of the aircraft, do you see that?

5 COL CONNOLLY: There was work underway – I see what you’re referring to. There was work underway to work towards a mid-life upgrade.

MAJ CHAPMAN: And what my question is, what steps were being taken to eliminate risk in the future?

10 COL CONNOLLY: Are you talking broadly about the aircraft or - - -

MAJ CHAPMAN: In respect of this HMSD V5.10, if they were underway?

15 COL CONNOLLY: Well, they weren’t underway at that point. My plan was to include them.

MAJ CHAPMAN: So your reference to “underway” is a reference back to a plan, not actual steps being actively taken?

20 COL CONNOLLY: No. No, the reference to the “underway” is about the whole process of a mid-life upgrade and determining all the requirements of things that would need to go into it. All I’m suggesting there is that – because there were a number there. We were looking at, you know, do the engines need to be changed mid-life? Do we need to have some other
25 additions to the aircraft? Are there mission profiles that we could add or subtract? All of these things feature in our mid-life upgrade.

What I’m suggesting there is that the issue of what we were seeking out of version 5.1 would be incorporated into that body of work.

30 MAJ CHAPMAN: Understood. If I could take you to the April 2020 decision brief? If you could turn that up, please? That was included in your section 23 Notice.

35 COL CONNOLLY: Yes.

MAJ CHAPMAN: And that, for the Inquiry’s benefit, is 104, tab 1 – exhibit.

40 Now, you address this from paragraph 19 of your statement. And do you recognise that document as the second decision brief to the Director-General in April 2020?

45 COL CONNOLLY: Well, I recognise it as a decision brief to the Director-General. I do not recall seeing this.

MAJ CHAPMAN: So you recognise that as a second decision brief.
Correct? And you say in your evidence that you do not recall this second
brief; is that right?
5

COL CONNOLLY: That's correct.

MAJ CHAPMAN: So do we take it that you've not seen this document
prior to the Inquiry providing it to you as part of the section 23 Notice? Is
that your evidence?
10

COL CONNOLLY: Listen, I cannot recall seeing this particular brief.

MAJ CHAPMAN: And having now - - -
15

COL CONNOLLY: We are talking about five years ago.

MAJ CHAPMAN: Yes, sure. Having now reviewed the document, do
you understand that it also recommends service release from, I suppose, an
operational airworthiness perspective?
20

COL CONNOLLY: The sentiment, yes, clearly recommends it.

MAJ CHAPMAN: And can I just ask whether, in your experience, it
would be typical or atypical for these two decision briefs to be sent up in
respect of the one modification?
25

COL CONNOLLY: Well, it would be typical for them to go together, or
at least to make reference to each other. Having not seen this one, I don't
recall whether it was a result of a question from the first or was arrived at
independently.
30

MAJ CHAPMAN: And you make the point at paragraph 22 that
Operational Evaluations are not unusual; is that right?
35

COL CONNOLLY: That's correct.

MAJ CHAPMAN: And that's because you say it's not always possible to
eliminate risk.
40

COL CONNOLLY: That's correct.

MAJ CHAPMAN: And you say that you – or you explain that you work
through a process to manage risk, including engineering, administrative
controls, and that an Operational Evaluation is key to understanding what
45

may or may not be suitable. Is that right?

5 COL CONNOLLY: Yes, I'm just referring to the hierarchy of controls there where clearly elimination is the most preferred outcome. It's just not always possible, and so we would work through a process – you know, substitution, engineering, administrative controls, down to what can the individuals wear in terms of PPE – that would mitigate the risk. And you do that for every single – you know, it's not specific to 5.1, nor is it specific to that aircraft.

10 MAJ CHAPMAN: And I think we may have established, but I'd ask you to agree whether it was unusual to have an Operational Evaluation following a Flight Test Organisation report? Is that right?

15 COL CONNOLLY: Is it unusual? No, I wouldn't have classed it as unusual.

MAJ CHAPMAN: Well, let me ask you this question. Drawing on your experience, how many "unacceptable" flight test reports have you seen?

20 COL CONNOLLY: Okay, that's different. That's different. You're talking now about the very specific finding of "unacceptable".

MAJ CHAPMAN: Yes.

25 COL CONNOLLY: And that I do think was probably a little odd. However, the nature of an Operational Evaluation can stem – or the reason for it can stem from its multitude – multiple factors. You could actually have a flight test report that had findings or recommendations that were not as significant as "unacceptable", and the way you might then seek to mitigate the risk that they present is to conduct an evaluation.

30 MAJ CHAPMAN: So just to go back on what your answer was before, that you do accept, in the context of an "unacceptable" finding from a Flight Test Organisation, that an OPEVAL in response is unusual.

35 COL CONNOLLY: Probably unusual, yes.

MAJ CHAPMAN: And your expectation is that that matter would be returned to the Flight Test Organisation for further testing.

40 COL CONNOLLY: Or at least to get their perspective or view on it, absolutely.

45 MAJ CHAPMAN: Thank you. And, sir, lastly, you address at

paragraph 24 the members of Bushman 83 and say that the only crew that you personally knew was WO2 Joseph Laycock. Is that correct?

COL CONNOLLY: That's correct.

5

MAJ CHAPMAN: And you reflect that you served together for many years and on many occasions and were part of the same crew; is that correct?

COL CONNOLLY: That's correct.

10

MAJ CHAPMAN: And that you would eventually serve as his Commanding Officer at the 6th Aviation Regiment; is that correct?

COL CONNOLLY: That's also true.

15

MAJ CHAPMAN: And, sir, you conclude by saying that you always sought out and valued his contribution, concluding that:

He is an immense loss to the Aviation capability.

20

COL CONNOLLY: He was an incredible soldier, and yes, the capability is less for his absence now.

MAJ CHAPMAN: Thank you, sir, those are my questions.

25

MS McMURDO: Before we start the cross-examining, could I just ask you one thing? Do you recall at the time of the decision brief in March 2020, was there a desire within the organisation to progress this as soon as possible; that is, the roll out of 5.10, so that it could be used by Special Operations?

30

COL CONNOLLY: Madam Chair, there was a – the last part of the overall capability that had not yet had the aircraft transitioned to them was the Special Operations capability, and there was clearly a desire to continue to progress that. This particular – or the functionality that was being sought, this appeared to be the only mechanism to provide it at that time.

35

MAJ CHAPMAN: Can I just ask one further - - -

40

MS McMURDO: Yes.

MAJ CHAPMAN: And, sorry, sir, just do you know whether or not version 5.10 had been installed on the fleet that was for the purposes of the Special Operations Qualifications Course in – I think it was May 2020, 2021.

45

COL CONNOLLY: Listen, I can't recall that specifically. And I would expect that probably would have been the case then.

5 MAJ CHAPMAN: There's been some evidence, to be fair, that the intent was to – and I think it's reflected in the decision briefs – the intent was to have version 5.10 installed on the aircraft for the Special Operations Qualifications Course. Do you recall that?

10 COL CONNOLLY: I don't, but if that's the context - - -

MAJ CHAPMAN: Yes.

COL CONNOLLY: Well, then I accept it as given.

15 MAJ CHAPMAN: And my question is simply whether or not you had any recollection of that target not being met because the software wasn't installed, as on this evidence, by the time of that course?

20 COL CONNOLLY: If I'm meant to get – I'm just going to read between the lines here. Is this about was there some sort of unwritten imperative to progress this quickly? What I would suggest is that there were a number of – the introduction of this aircraft into that capability was being managed intensively, okay? And there was no rushing that myself or anybody else
25 were undertaking to progress anything quicker.

MAJ CHAPMAN: Thank you, sir. Those are my questions.

MS McMURDO: Yes, applications to cross-examine, please.

30 LCDR GRACIE: Yes, ma'am.

MS McMURDO: Yes. LCDR Gracie.

35 <**CROSS-EXAMINATION BY LCDR GRACIE**

40 LCDR GRACIE: I'll try and avoid going over old ground, ma'am. So, sir, my name is LCDR Malcolm Gracie. I represent the interests of CAPT Danniell Lyon of Bushman 83.

COL CONNOLLY: Thank you.

5 LCDR GRACIE: So that I can perhaps park to one side the evidence that we've seen in relation to the wording of the Standardisation Manual and particular control measures, can I just ask for some clarity as to whether or not you would be involved in that process, or is that a Standards, perhaps AATES, scenario?

COL CONNOLLY: No, the Standardisation Manual is drafted by and is controlled by the Standards Section.

10 LCDR GRACIE: You wouldn't get involved in that aspect of the wording or the particular control measures that would be included in the STANMAN then?

15 COL CONNOLLY: Listen, I think if you were to go back to one of the previous questions about the TERC, one of the reasons for having many players around that particular sort of meeting – and the same for the Configuration Control Boards – is to ensure that all of the work that's relatively done by individual sections is somehow cohesive. So I personally would not necessarily have been requested to comment on the
20 wording in the STANMAN, and I can't recall ever being asked to. But in the compilation of STANMAN, quite often Standards Section would seek commentary from others.

25 LCDR GRACIE: And would that include LTCOL Hamlyn then, in your area?

COL CONNOLLY: It may very well have done.

30 LCDR GRACIE: Did he raise with you any issues raised by MAJ Wilson on behalf of AATES with then LTCOL McCall in relation to the particular control measures that AATES felt were necessary to be included in the STANMAN?

35 COL CONNOLLY: Listen, I can't recall having a conversation with him about that or him bringing it to me.

40 LCDR GRACIE: Or him being – I'm sorry, I withdraw that. I won't go there. Could I ask for you to have a look at your brief of – your decision brief to DG AVN of 20 March 2020? That's the Exhibit 104, Annexure E. You've got it there on your screen, have you?

COL CONNOLLY: Yes, go ahead.

LCDR GRACIE: Thank you. Can I take you to paragraph 3 and ask if you could just read that second sentence at 3 to yourself in relation to the essential requirement for SO approach?

5 COL CONNOLLY: Yes.

LCDR GRACIE: Could I just ask whether – and the way I read it is that that is an expression of your view rather than anything that's come out of the OPEVAL or anything else. Is that a fair proposition to put to you?

10

COL CONNOLLY: No. The nature of the requirements for the progress of the aircraft into the Special Operations capability wasn't defined by me. Whilst I have some history in that organisation, there's a separate process for identifying the essential requirements, or even the nice to have, or the desirable ones.

15

Now, in this case, I do understand the reason for it being essential and would agree with it.

20 LCDR GRACIE: But your experience is not with that distance to go or distance to run information in relation to the MRH-90. That's based on your experience with Black Hawks, isn't it?

COL CONNOLLY: That's correct.

25

LCDR GRACIE: So insofar as you had a particular view, based on your experience, it wasn't MRH-related, it was Black Hawk related.

30 COL CONNOLLY: Well, it's actually not related to any aircraft type. It's related to – and I don't want to stray outside of the classification here, but it's related to the profiling approach that's used regardless of the aircraft type.

35 LCDR GRACIE: When you wrote paragraph 3, did you have the OPEVAL in mind though in terms of your characterisation of its essentiality?

COL CONNOLLY: Yes, I did not write the brief; I cleared it. But I would agree that it is an essential requirement, and I did at the time.

40

LCDR GRACIE: I won't take you to it, but we do have the evidence of the OPEVAL, and to summarise it – and I'll be corrected by someone if I have put it inaccurately – of the 12 line pilots, QFIs and SO1, and COL Langley, as former or current test pilots, so of that mix seven of those

12 did not regard the distance to go/run as impacting on their ability to conduct SO approaches. Were you aware of that?

COL CONNOLLY: No.

5

LCDR GRACIE: Had you been aware of that, would that make you revisit your assessment as to its essentiality in paragraph 3 of your decision brief?

10 COL CONNOLLY: I would query why they felt that was the case with the individuals.

LCDR GRACIE: So were you, in effect, relying upon perhaps LTCOL Hamlyn's drafting of that characterisation of essentiality if you
15 thought it was referable to the OPEVAL?

COL CONNOLLY: So the essential requirements were not derived by asking those individuals you referred to before about whether they felt something was essential or otherwise. Most of the essential requirements
20 for – in fact all of the essential requirements for the aircraft and all of its supporting systems were derived through a separate process.

LCDR GRACIE: Remember I asked whether or not it was your personal opinion or based upon the OPEVAL, and you said it was drafted by someone else. So all I'm trying to ascertain is, what are you clearing in
25 relation to this draft, or the draft that you get, to satisfy yourself of essentiality as opposed to what the majority of those pilots in the OPEVAL determined?

30 COL CONNOLLY: So all that I'm saying is what was stated there correlated with my experience and my view of the need.

LCDR GRACIE: There is some evidence in relation to a brief back in 29 May 2017 by then DACM COL Barton, who expressed a view about the
35 essentiality of the distance to go function, and that seems to have been embraced by LTCOL Hamlyn as a feature that Army saw as being essential. Did you simply follow that thinking through in accepting what you put in paragraph 3, that it was just a foregone conclusion that it was essential?
40

COL CONNOLLY: No, as I indicated to you, the essential requirements had already been derived. However, in this particular instance, as a qualified Special Operations Captain, albeit on Black Hawk, it correlated
45 with my view.

LCDR GRACIE: So does it mean that until the version 5.10 upgrade of the symbology, the version 4 that was being utilised was somehow deficient by not having that feature?

5 COL CONNOLLY: It's a feature – so we're starting to venture down a path here that could become above this classification. What I would say is that for the other mission types that Army Aviation conducts in that utility platform, the absence of the distance to go feature would not be significant, all right? However, for that particular profile, the Special Operations one,
10 it would be.

LCDR GRACIE: So until this upgrade, was the MRH-90 at 6 Avn operating in a deficient operating environment by not having that essential requirement?
15

COL CONNOLLY: Well, they weren't conducting the Special Operations role on that aircraft prior to this.

LCDR GRACIE: Prior to the upgrade?
20

AVM HARLAND: Was that "they were" or "were not"?

LCDR GRACIE: Weren't.

25 COL CONNOLLY: Were not.

AVM HARLAND: Were not.

LCDR GRACIE: And you're quite sure about that?
30

COL CONNOLLY: I'm reasonably confident. If they were, there would have been a number of limitations. But I cannot recall that they were.

LCDR GRACIE: Did you say "a number of limitations", sir?
35

MS McMURDO: Yes, he said - - -

COL CONNOLLY: A number of mission tasking limitations.

40 Lcdr GRACIE: Could I ask you to look now, please – same decision brief, at paragraph 7, where you've cleared those two subparagraphs, (a) and (b), and reflected the position of SO1 OT&E about the risk.

COL CONNOLLY: Yes, I can see that.
45

LCDR GRACIE: After this brief went to BRIG Fenwick, did he express to you any concerns or a request for a revision of those fairly serious matters that you've summarised from the AATES position?

5 COL CONNOLLY: As I said, I cannot recall having a conversation with him over this matter.

LCDR GRACIE: Did you later become aware that he requested anything by way of a revised decision brief in relation to the service release to deal
10 with those concerns in paragraph 7?

COL CONNOLLY: Listen, you're talking about something that's five years ago, and I cannot recall.

15 LCDR GRACIE: Having now seen the 20 April decision brief that came through LTCOL Norton and COL Lynch – SO1 Standards and DOPAW, respectively – were you surprised to see that there was that subsequent brief?

20 COL CONNOLLY: Well, on seeing that brief, I can see that – well, I have an expectation that he probably precipitated it.

LCDR GRACIE: And did you, on seeing that brief, get the feeling that you might have been bypassed in terms of BRIG Fenwick seeking to
25 overcome those concerns that you had identified in paragraph 7?

COL CONNOLLY: No. It may just be that I can't recall it, but it's his prerogative to seek additional information from where he needs it.

30 LCDR GRACIE: Do you think you might have been bypassed somehow by that subsequent brief being raised?

COL CONNOLLY: No - - -

35 LCDR GRACIE: In that you weren't copied into it, and don't recall having seen it.

COL CONNOLLY: Well, it is a little odd that I was not included as an addressee on it, yes.

40 LCDR GRACIE: But you've already cleared a document for service release. You've faithfully, I put, set out the concerns of AATES. But then four weeks later there's another document that you don't see that attempts to achieve the same recommendation for service release. How do you
45 explain that, sir?

COL CONNOLLY: Well, I have an expectation that BRIG Fenwick sought additional information, and in this case, it was forthcoming from COL Lynch via that brief.

5

LCDR GRACIE: And you'll see in paragraph 7 – and I've used the word "faithfully" because that's my assessment of it; you don't have to agree with it – but in what you've written there in paragraph 7, you faithfully record the position of SO1 OT&E, AATES. Did it surprise you when you had a look at the subsequent decision brief that there was a reference to DACM reassessing the AATES finding of "unacceptable" to "undesirable"?

10

COL CONNOLLY: Sorry, I'm just re-reading the brief here.

15 LCDR GRACIE: Yes, sure.

COL CONNOLLY: Bear with me.

LCDR GRACIE: I'm really just trying to juxtapose what you say, and the subsequent brief says, and if you can explain how that might have been read by you when you saw the subsequent brief.

20

COL CONNOLLY: So my reading of the second brief, which is the one that you referred to as the April decision brief, is that the Operational Evaluation then undertaken by Standards, including a test pilot, had looked at the finding that AATES had made, and determined, I guess, within the context of what they felt could be controlled, that it was no longer unacceptable, and would be and could be adjusted to undesirable.

25

LCDR GRACIE: But that is not how you assessed it in the document of the decision brief that you cleared.

30

COL CONNOLLY: No, I didn't say that. What I said was that I was faithfully providing to the decision-maker all of the context. In that particular case, AATES had said it was unacceptable and we had Standards indicating that it could be mitigated.

35

LCDR GRACIE: On seeing that second brief then, do I understand it that you did accept what was said there about the AATES assessment as being reassessed by Standards?

40

COL CONNOLLY: On reading the second brief, it reinforced to me that Standards have looked at, I guess, the options and identified that the issue that AATES have presented could be mitigated.

45

LCDR GRACIE: Let me ask you about the reassessment though. Did you ever understand that the OPEVAL did actually reassess the AATES finding or did it reach its own finding?

5 COL CONNOLLY: It would have reached its own finding. I mean, only AATES can articulate what AATES finds.

LCDR GRACIE: So would you agree with me then that the
10 characterisation in the second brief about the AATES assessment being reassessed is misleading to DG AVN?

COL CONNOLLY: Let me just find the exact words. Can you just point me to the paragraph you were referring to?

15 LCDR GRACIE: It's paragraph 2 of the April decision brief.

COL CONNOLLY: Yes, the way – I think you're referring to paragraph 3(a) there; is that correct?

20 LCDR GRACIE: No, 2. You could read 3(a) as well; it's the same. So it says it at least twice.

COL CONNOLLY: Yes, that's based on the advice provided by Standards.

25 LCDR GRACIE: No, let's just focus in on it, though. Do you agree with me that it would be misleading for this brief to inform DG AVN that Standards had reassessed the AATES finding that the HUD characteristics were "unacceptable" to "undesirable".

30 COL CONNOLLY: Yes, listen, I can't see where that says that that's the case, but - - -

LCDR GRACIE: Have you got the 20 April brief?

35 COL CONNOLLY: Yes, I'm looking at paragraph 2.

LCDR GRACIE: Well, it says the words:

40 *AATES flight assessment was reassessed through OPEVAL.*

Which part of that doesn't refer to a reassessment by Standards of the AATES assessment?

45 COL CONNOLLY: I do not see that at all in paragraph 2.

LCDR GRACIE: You do not see the words, or you do not see that meaning?

5 COL CONNOLLY: Well - - -

LCDR GRACIE: Or 3(a), as you said.

10 COL CONNOLLY: And paragraph 2 is the paragraph that begins with, “An early project”.

LCDR GRACIE: Yes. Look at the last sentence.

15 COL CONNOLLY: That’s the correct wording?

LCDR GRACIE: Yes. And the last sentence, “DACM directed OT&E”.

COL CONNOLLY: Yes.

20 LCDR GRACIE: That reassessed - - -

COL CONNOLLY: And it was at – yes, and it was that OT&E that came up with it being undesirable.

25 LCDR GRACIE: So do you not see the - - -

COL CONNOLLY: It doesn’t - - -

30 LCDR GRACIE: Yes, sorry, sir.

COL CONNOLLY: It doesn’t indicate that the AATES finding was changed. It’s just that an additional test was conducted and, in view of that, felt it was now undesirable.

35 LCDR GRACIE: Do you see a difference between “changed” and “reassessed”?

COL CONNOLLY: No.

40 LCDR GRACIE: “AATES flight assessment was reassessed.”

COL CONNOLLY: Well, it was reassessed.

45 MS McMURDO: Well, LCDR Gracie, maybe this – the document speaks for itself.

COL CONNOLLY: But it wasn't reassessed by AATES.

5 MS McMURDO: Just a minute, please. The document speaks for itself, doesn't it?

LCDR GRACIE: All right. Thank you.

10 MS McMURDO: Yes.

LCDR GRACIE: It does. And on that basis, I have nothing further, ma'am. Thank you.

15 MS McMURDO: Thank you.

LCDR GRACIE: Thank you, sir.

MS McMURDO: Any other applications to cross-examine? Yes, LCDR Tyson.

20

<CROSS-EXAMINATION BY LCDR TYSON

25 LCDR TYSON: Sir, my name is LCDR Tyson. I appear for CPL Alex Naggs. I'll just be very brief with you. Sir, are you aware that during the period when AATES was testing the version 5.10, and that's 7 June to 11 June 2019, that during that period LTCOL Norton contacted MAJ Wilson, who was the test pilot in that AATES testing, and
30 LTCOL Norton asked MAJ Wilson for a flight on the Taipan, that was given to him, and MAJ Wilson actually showed LTCOL Norton, in the Taipan, the erroneous attitude information displayed by the 5.10 symbology? Did you ever find out about that from either LTCOL Norton or MAJ Wilson?

35

COL CONNOLLY: No, I was not aware of that.

LCDR TYSON: And it's not recorded anywhere, is it, that that took place, in any of the documentation that you can recall?

40

COL CONNOLLY: Not that I can recall, no.

LCDR TYSON: And LTCOL Norton at the time, in June 2019, he was the SO1 Aviation Standards Officer, wasn't he?

45

COL CONNOLLY: I don't recall his exact tenure, but that sounds about right.

5 LCDR TYSON: And you understand that the role of the SO1 Aviation Standards Officer in the regulatory scheme, that role is effectively – that person is the Aviation Publication Administrator. That's correct, isn't it?

10 COL CONNOLLY: All the publications that are of an operational nature, that's correct.

LCDR TYSON: And the person in that role there's meant to coordinate, consult and produce changes to Flight Manuals and so forth, aren't they?

15 COL CONNOLLY: Yes.

LCDR TYSON: Can I just get you to comment on this, sir? So in June 2019, DACM was already aware that there was a problem with symbology 5.10 and the erroneous attitude problem. But DACM's view was that they would continue to support the move towards 5.10 and service release of 20 5.10, and would seek to address and ameliorate the problem that was known through Aviation publication amendments. Would you agree with that, or disagree, or just don't know?

25 COL CONNOLLY: Listen, I don't know if I'm in a position with the facts to comment on that.

LCDR TYSON: All right. Thank you. Nothing further, ma'am, sir.

30 MS McMURDO: Yes. Next application? Yes.

<CROSS-EXAMINATION BY LCDR HAY

35 LCDR HAY: Good afternoon, sir. My name is LCDR Mark Hay. I appear representing the interests of D19. Can I just ask you, do you have a pseudonym list that you can make access to?

40 COL CONNOLLY: I do not.

LCDR HAY: I'm told that it may be possible simply to cut the feed for a moment so that the identity of D19 can be made known.

45 MS McMURDO: It's not possible, not with the video. It's a big deal.

LCDR HAY: Perhaps it's not necessary. I'll see how far I can go without that at this stage.

5 Sir, the questions that I have for you really don't relate to the AATES report or the OPEVAL at all. They relate more to your operational experience as a helicopter pilot, and in particular I note that at paragraph 5 of your statement you note that you are a Qualified Special Operations Aircraft Captain.

10 COL CONNOLLY: I was at the time.

LCDR HAY: Yes.

15 COL CONNOLLY: I can't claim that is still the case.

LCDR HAY: But also at some stage you were the Commanding Officer of 6 Avn.

20 COL CONNOLLY: That's correct.

LCDR HAY: And can I just ask you – and I hope this doesn't cause any problems – was 6 Avn tasked with Special Operations taskings when you were the Commanding Officer there?

25 COL CONNOLLY: It was.

LCDR HAY: And this is going to seem, I expect, like a strange question but you've heard the expression, "Training as you intend to fight"?

30 COL CONNOLLY: That's correct.

LCDR HAY: When you were a Special Operations Captain, when you were the Commanding Officer of the Regiment, was that a philosophy that was adopted in your experience?

35 COL CONNOLLY: The answer is yes. Let me just provide a little bit of context and a caveat. It is always desirable to train in a manner which closely replicates what you expect to experience in an operational sense. That is not always possible, nor is it necessarily safe. And where it is not
40 safe to do that, you implement a number of control measures after having undertaken your risk assessment to bring it into an envelope which is an acceptable envelope, but with the intent clearly being to prepare individuals for the operational situation.

LCDR HAY: Is it fair to say that you do not want the pilots and aircrew to be experiencing those conditions for the very first time in real life situations when it's not a training mission?

5 COL CONNOLLY: Absolutely, yes.

LCDR HAY: And just going back to your point before about trying, within certain limitations, trying to replicate or simulate those operation conditions, that is, to ensure that the aircrew and pilots, et cetera, are fully and properly prepared for those conditions if and when they do face them for real?

COL CONNOLLY: Yes, make them as ready as possible.

15 LCDR HAY: Yes, thank you. Now, can I just ask you this, sir. Would you agree with the characterisation – I'm only talking about in that SO space – do you agree with the characterisation of the platforms being effectively Uber drivers?

20 COL CONNOLLY: Sorry, is that how someone has referred to the capability, or are you asking me to - - -

LCDR HAY: No. If you just accept from me that a witness in this Inquiry did give evidence to the effect that you were in that role no more, no less effectively than Uber drivers. Would you agree with that characterisation?

COL CONNOLLY: No, I would not. And it's not an unusual comment to get from some. Where the mission – say, for example, an attack Aviation platform is used, people can see a very distinct operational end state with attack platforms. They tend to think sometimes of utility platforms as just being a bus that delivers people from point A to point B. That is not the philosophy that I ever took, nor is it one that I think is pervasive within the organisation.

35 Because like any mission, Aviation mission, it is a marriage between the Aviation Organisation that's delivering the service and the – I use the term “customer” – I don't like the term – but the operator that needs that service.

LCDR HAY: Yes, thank you. No further questions.

40 MS McMURDO: Yes, next? COL Gabbedy.

COL GABBEDY: Thank you, ma'am.

45

<CROSS-EXAMINATION BY COL GABBEDY

5 COL GABBEDY: COL Connolly, I'm COL Nigel Gabbedy. I appear for GEN Jobson.

COL CONNOLLY: Good afternoon.

10 COL GABBEDY: Afternoon, I shouldn't be too long. I take it from your statement that you have discharged from the ADF now?

COL CONNOLLY: That's correct.

15 COL GABBEDY: Were you given access to ADF files and material to assist you in preparing your statement?

COL CONNOLLY: I was provided the two briefs which I have, or I - - -

20 COL GABBEDY: Is that the only material – sorry. Was that the only material you received?

COL CONNOLLY: Yes.

25 COL GABBEDY: Now, I think you said in your evidence that the introduction of this particular software, version 5.10, was something that happened over time; is that right?

COL CONNOLLY: Are you talking about - - -

30 COL GABBEDY: 5.10, the Heads-Up Display.

COL CONNOLLY: - - - the construction of it or are you talking about the actual - - -

35 COL GABBEDY: The introduction to service had a genesis that spanned years, didn't it?

40 COL CONNOLLY: To get a software change on the aircraft does take a long time.

COL GABBEDY: And I think in your evidence you referred to this distance to run criteria was simply one of the number of features introduced by the upgrade?

45 COL CONNOLLY: It did. Okay, it provided some additional benefits

other than just the distance to run.

5 COL GABBEDY: LCDR Gracie took you to a document, which you won't have, which was a letter from a COL Barton back in 2017. That, of itself, is attached to another email from a LTCOL Wheatly. I just want to read you part of that. And it's talking about the - - -

MS McMURDO: Can you tell us where we find that, please?

10 COL GABBEDY: Annex AH06 to Ms House's affidavit.

MS McMURDO: Thank you.

15 COL GABBEDY: And because you haven't got it in front of you, I just want to read a paragraph of it and get you to comment on it. It refers to the HMSD software upgrade to 5.10 and it says that that identified that:

44 per cent of Army Aviation Training Centre soft failures were due to helmet-mounted sight display initialisation failures.

20

If I stop there, can you tell me what a "soft failure" is?

COL CONNOLLY: I don't know the context either.

25 COL GABBEDY: Okay.

COL CONNOLLY: I'm assuming it would be part of the boot-up procedure for the software - - -

30 COL GABBEDY: If I continue the paragraph, it might provide context. I don't understand it, but:

Enclosure 1 –

35 and that's the soft upgrade to 5.10 –

that an upgrade to HMSD software 5.10 will rectify initialisation errors, upgrade symbology and introduce distance to run cues for the flying pilot.

40

Does that assist in giving some context as to the other features that it would bring into service?

COL CONNOLLY: Yes, I'm interpreting now, based on what you just read, that the soft failures that were referred to were boot-up failures, effectively, when power is applied to the system. And - - -

5 COL GABBEDY: I think that's – sorry, sir. I think that's - - -

COL CONNOLLY: And that then – go ahead.

10 COL GABBEDY: Sorry, I think that's reflected in the annexure which is this letter from COL Barton. It says in that:

Reporting data shows 40 per cent of TAUA fleet soft failures requiring aircraft power down and power up are caused by faulty HMSD initialisation.

15

Does that help you understand what that means?

20 COL CONNOLLY: I think I've assumed correctly that that quantity of failures is a boot-up. You apply power and it doesn't load correctly when you boot it up.

COL GABBEDY: What would the effect of that be in an operational or an organisational context?

25 COL CONNOLLY: You have to power it down and start it up again.

COL GABBEDY: So rectification of that problem, I take it, would be a desirable feature.

30 COL CONNOLLY: A highly desirable feature.

COL GABBEDY: As would the distance to run feature?

35 COL CONNOLLY: Yes.

40 COL GABBEDY: Now, you were asked some questions by Counsel Assisting in relation to Standards performing the OPEVAL. For context, I want to tell you a couple of things that have come out of the evidence, and they are that there was a request from SO1 AATES, LTCOL Reinhardt, to Standards asking Standards to conduct the further testing which became the OPEVAL.

45 And that the parameters for that testing was set by AATES in conjunction with Standards. Do you believe that's an appropriate way to proceed?

COL CONNOLLY: The interaction between those two - - -

5 LCDR GRACIE: I object to that. It didn't happen that way, ma'am. It was a question posed of SO1 OT&E who said that he was happy for Standards to do it. It wasn't a direction from OT&E to Standards.

COL GABBEDY: I'll try and find the email for clarity. Do you have a copy? Sorry, COL Connolly while we rectify this little issue.

10 MS McMURDO: Is there anything else you can go on with in the meantime?

COL GABBEDY: I'll go on with something else, yes.

15 MAJ CHAPMAN: It's Annex D to Exhibit 122.

20 COL GABBEDY: So for clarity, I'll read you the excerpt from the email from BRIG Reinhardt and ask that question again. In his email to LTCOLs Hamlyn and Norton, BRIG Reinhardt says in relation to the follow-up testing:

My preference is for STDs –

Standards –

25

to run the activity. We can work together to draft the OT&E Plan. I will endorse and apply for MPTF CAT 4, but not sure if this will get across the line for DoSA-FT.

30 What we then know is that AATES, in conjunction with Standards, set the parameters; Standards ran the testing. Is that appropriate?

35 COL CONNOLLY: Listen, those two organisations always work hand in hand. And so that level of interaction is not unusual. In fact, I'd actually argue that it's highly beneficial.

40 COL GABBEDY: And one final question for you again, LTCOL Gracie took you to the annex to the OPEVAL and asked you a question about what people had said about this distance to run feature also contained in the OPEVAL. And what it's got at the back is a schedule where all 12 of the test pilots make comments to specific questions that are asked of them.

And they are asked at question 7:

45 *Was the 5.10 symbology beneficial to Special Ops compared to*

version 4.0?

5 And 11 out of 12 pilots say, “Yes”, with various comments. Is that the sort of information that would have been useful in terms of deciding whether or not to introduce this capability?

10 COL CONNOLLY: Well, it would have been useful. And I’m assuming that those 12 individuals are – they were the 12 who did the Operational Evaluation; that’s what you said?

COL GABBEDY: They were.

COL CONNOLLY: Yes, okay. And so their view has some weight.

15 COL GABBEDY: But in any event, as early as 2017, the distance to run criteria was seen as essential and became - - -

20 COL CONNOLLY: I think it’s always been essential since the decision was made to get the aircraft and to push it into that capability.

COL GABBEDY: And nothing changed your view in relation to that at any time?

25 COL CONNOLLY: No.

COL GABBEDY: Thank you very much.

MS McMURDO: Yes, next?

30

<CROSS-EXAMINATION BY LTCOL HEALEY

35 LTCOL HEALEY: Sir, my name’s LTCOL David Healey, and I’m representing the interests of BRIG Fenwick. You were asked earlier – and I understand it was LCDR Gracie – about terminology in the decision brief. Do you recall that?

40 COL CONNOLLY: You’ll have to be - - -

LTCOL HEALEY: And I understand it was in – sorry, I’ll clarify that. I understand it was in the brief for DG AVN. Have you got that with you?

45 COL CONNOLLY: Is that the March or the April one?

LTCOL HEALEY: No, it's 21 April 2021 brief.

COL CONNOLLY: Yes, I've got it.

5 LTCOL HEALEY: Have you got that there?

COL CONNOLLY: I have, in front of me.

10 LTCOL HEALEY: And he referred you to paragraph 2. Do you recall that?

COL CONNOLLY: Yes, I remember him referring to paragraph 2.

15 LTCOL HEALEY: And he referred to the term "undesirable". Do you recall that?

COL CONNOLLY: Yes.

20 LTCOL HEALEY: And it's right, isn't it, that's not a word that was made up by you. Correct?

COL CONNOLLY: No. This is not my brief, but - - -

25 LTCOL HEALEY: And, in fact, it was a term that was found in the OPEVAL, at page 7. You can take that as being present in that OPEVAL report.

COL CONNOLLY: Yes, I'll take it as - - -

30 LTCOL HEALEY: Thank you. The Inquiry has also heard from a number of people in relation to some testing in relation to this matter, and it heard from LTCOL Reinhardt. And you were asked a question in relation to the decision to go to OPEVAL rather than remain with AATES. Do you recall that?

35 COL CONNOLLY: A decision by me, are you talking about, or - - -

LTCOL HEALEY: I beg your pardon?

40 MS McMURDO: Well, perhaps just if you can ask your question, please.

LTCOL HEALEY: Yes.

45 So were you aware of the tempo that AATES was going through in 2019 at the time of the testing?

COL CONNOLLY: It was high.

LTCOL HEALEY: Right.

5

COL CONNOLLY: It was high and we were trying to the maximum extent to manage it.

10 LTCOL HEALEY: And you can take from me the Inquiry heard from Brendan Reinhardt and he provided, within his statement, a document, Exhibit 41, which is a covering Minute to the AATES 2019 AWB submission. Now, you won't have that document. And there is a question coming. But in terms of that question, going back to the OPEVAL and the decision to go to the OPEVAL, would it surprise you that if in this document
15 it states, "AATES has experienced high organisation tempo from the following three factors"? And this might actually jog your memory –

listed above: a change in location from Brisbane to Oakey.

20 Do you recall that, for AATES?

COL CONNOLLY: No, I do recall that AATES used to be based in Brisbane and we were moved to Oakey.

25 LTCOL HEALEY: And the second part is:

A change in FMS from an independent FMS under DOPAW and FORCOMD to an FMS resident within the Aviation TCFMS with non-flight test units.

30

COL CONNOLLY: As a function of the move, yes, they were to be part of the Flight Management System, which was the training centres.

LTCOL HEALEY: Yes.

35

And the change in SO1 OT&E from an incumbent who previously ran Army's independent flight test capability for over a decade.

40 COL CONNOLLY: Sorry, from an incumbent? You're talking about – yes, okay. I think you're referring to the fact that a particular individual held that position for a lengthy period of time, and this change all occurred at the same time as it was a change in that SO1 position.

45 LTCOL HEALEY: Thank you, sir. And this might assist you in that same document, the capacity versus workload. It says that:

AATES does not have the capacity to complete its current task load, let alone manage the transitions listed above.

5 Do you understand that?

COL CONNOLLY: I understand it. We knew that AATES were under stress and were trying to manage their workload.

10 LTCOL HEALEY: And it goes further, to say that:

AATES does not have good mechanisms to assess capacity in accepting or completing tasks.

15 COL CONNOLLY: I don't remember that particular brief that you're referring to, but the sentiment clearly is and was understood.

LTCOL HEALEY: And at point 5 of that particular document, it states that:

20

I assessed the following Aviation risks as present in AATES:

(a) Inability for AATES to effective plan for the resources available;

25

(b) Lack of QTA discipline.

Can you tell me what "QTA" stands for?

COL CONNOLLY: I assume it's a Qualified Test Authority.

30

LTCOL HEALEY: Okay.

Lack of QTA discipline and overconfidence to regular Army Aviation safety.

35

Do you understand that part?

COL CONNOLLY: Well, I don't have the document, so - - -

40

LTCOL HEALEY: And:

Lack of attention to non-flight test governance requirements.

COL CONNOLLY: I don't know what you're asking me.

45

MS McMURDO: Yes, what's the question, please?

5 LTCOL HEALEY: So my question is, would that be a logical conclusion, to then go to an OPEVAL given the constraints that the AATES had at the time?

COL CONNOLLY: Yes, with some - - -

10 LTCOL HEALEY: In your view.

15 COL CONNOLLY: As you or one of your associates pointed out, the SO1 at the time, LTCOL Reinhardt, obviously approached SO1 Standards to indicate his preference to have Standards conduct the Operation Evaluation. That's consistent with an organisation that recognises it has limitations and is seeking support from another organisation that could assist. As I said, we were aware that AATES did have some pressures and so we were trying everything we possibly can to manage the pressures that were being applied to them.

20 LTCOL HEALEY: And going to another - - -

COL CONNOLLY: Which includes - - -

25 LTCOL HEALEY: Sorry, go on, Colonel.

COL CONNOLLY: Yes, which includes ensuring that they only get tasked with those things that only they can perform and not distracted by tasks that others can perform.

30 LTCOL HEALEY: Thank you, Colonel. Those are my questions.

MS McMURDO: Thank you. Any other applications to cross-examine? And re-examination?

35 MAJ CHAPMAN: Just two short questions.

MS McMURDO: Yes.

40 **<RE-EXAMINATION BY MAJ CHAPMAN**

45 MAJ CHAPMAN: Apologies to the extent it's been a long session already. A question, it's a hypothetical, COL Connolly. How would it affect your recommendations should – in fact, the context of my question

5 is, regarding version 5.10, it appears from the conversations that we've had that it was really about balancing the risk of not having the desirable features on 5.10 being incorporated into the fleet, which would include distance to run for SO approaches and other enhancing features, like the software boot, et cetera.

10 And balancing that with the unacceptable, reassessed as undesirable feature regarding the attitude ambiguity when looking off-axis. Would you agree that's a reasonable kind of fundamental balancing act in risk?

COL CONNOLLY: Correct, sir. Yes. Yes, I would.

15 MAJ CHAPMAN: The question is a hypothetical. If the distance to run was not characterised as "essential", how would that have changed your calculus in terms of your recommendations to move forward with the version 5.10?

20 COL CONNOLLY: It would've been a significant – it would've changed significantly because I think most of the other issues we could probably have waited for if – but definitely the distance to run was one function, one characteristic, that was needed and there was no other way that it could be mitigated.

25 MAJ CHAPMAN: And I understand that it was characterised as "essential" very early in the piece and that it went through the process as being essential. And then when we go through the OPEVAL testing – and I'm not sure if it was covered with you, but 7 out of 12 of the testing pilots indicated that there were other ways to safely conduct the SO approach without version 5.10 being fitted in accordance with the STANMAN.

30 COL CONNOLLY: Well, that does surprise me, sir. And if I'd been aware of that, and particularly whether their assessment was true – in other words, there was another way – then it would've paid to investigate that other way.

35 MAJ CHAPMAN: That sounds reasonable. Now, another question just regarding risk management academics, I guess. Where on the hierarchy of controls would a warning in a STANMAN about the use of a particular piece of kit, where would that sit in the hierarchy of controls?

40 COL CONNOLLY: Well, it's in the administrative. But the underlying action could have been an engineering – could have been arrived at because it was an engineering or substitution. But in itself, putting the warning out is an administrative control.

45

MAJ CHAPMAN: And where does an administrative control sit in the hierarchy? Towards the upper end, as in – or at the lower end?

COL CONNOLLY: No, it's the lower end, second from the bottom.

5

MAJ CHAPMAN: That's the picture I have too. And above, in "administrative controls", you have engineering controls, substitution and elimination. And they're seen as significantly better controls when managing risk, in particular, risk to safety that we're talking about here. So as you were going through the considerations for service release, are you aware of any active considerations, formal requests that were made to either the OEM or SUZ to be able to access engineering controls, substitution or elimination?

10

COL CONNOLLY: I'm not personally aware, no, sir.

15

MAJ CHAPMAN: Do you think that happened?

COL CONNOLLY: I don't want to give a supposition. But a lot was being asked of this aircraft and a lot was being asked of the support systems and organisations behind it. I can't vouch for whether somebody made an approach to SUZ. Clearly, we could have implemented a change very quickly that would have been the – a software change that suited us, that would have been the most desirable. Absolutely, would have been the most desirable.

20

25

MAJ CHAPMAN: Yes, so would it be ordinary in a risk management process that when you consider the hierarchy of controls to manage significant risk to safety, that you would seek to discount the ability for you to be able to take advantage of engineering, substitution or elimination?

30

COL CONNOLLY: You would, absolutely.

MAJ CHAPMAN: And that would normally be formally - - -

35

COL CONNOLLY: And hence - - -

MAJ CHAPMAN: Sorry, go.

COL CONNOLLY: Yes, sorry. And hence my belief is that somebody would have asked. The actual process was a lengthy one to do any software changes, and that what was provided by 5.10 largely met our requirements. Does that make sense?

40

MAJ CHAPMAN: It does.

45

COL CONNOLLY: And that the characteristic that AATES provided – sorry, the “unacceptable” that they provided could be mitigated another way.

5

MAJ CHAPMAN: Yes, understood. But just to summarise that. You’re not aware of any formal process by which engineering control, substitution or elimination were explored with relation to version 5.10?

10 COL CONNOLLY: I’m not, sir, no.

MAJ CHAPMAN: Okay, thank you.

15 MS McMURDO: Thank you very much, COL Connolly for your assistance to the Inquiry; it’s really appreciated. Giving evidence to an Inquiry like this is always difficult, but especially so when one of the deceased is someone with whom you worked so closely over so many years. So please remember that there is assistance available and if you need it, don’t hesitate to avail yourself of it. Thank you.

20

COL CONNOLLY: Thank you, Madam Chair.

MS McMURDO: Thank you. We’ll end the video link now and we’ll resume a little after 2 o’clock.

25

<WITNESS WITHDREW

30 **HEARING ADJOURNED**

HEARING RESUMED

5 MS McMURDO: Yes, MAJ Chapman.

MAJ CHAPMAN: Thank you, Chair. The next witness is LTCOL David Marshall, and I call him, please.

10 <LTCOL DAVID LAWRENCE MARSHALL, Sworn

<EXAMINATION-IN-CHIEF BY MAJ CHAPMAN

15 MS McMURDO: And let me know, LTCOL Marshall if you need a break at any time?

LTCOL MARSHALL: Thanks, ma'am.

20 MS McMURDO: Thank you. Yes, MAJ Chapman.

MAJ CHAPMAN: Thank you, Chair.

25 Sir, can I just please ask you to state your full name?

LTCOL MARSHALL: David Lawrence Marshall.

30 MAJ CHAPMAN: And can you just confirm, as a preliminary matter, sir, that you've received each of the following documents prior to today: a section 23 Notice requiring your appearance to give evidence?

LTCOL MARSHALL: I did.

35 MAJ CHAPMAN: An extract of the Inquiry Directions?

LTCOL MARSHALL: I did.

40 MAJ CHAPMAN: A copy of my appointment as an Assistant IGADF?

LTCOL MARSHALL: I did.

45 MAJ CHAPMAN: A Frequently Asked Questions Guide for Witnesses in IGADF Inquiries?

LTCOL MARSHALL: I did.

MAJ CHAPMAN: And a Privacy Notice for witness giving evidence?

5 LTCOL MARSHALL: I did.

MAJ CHAPMAN: Thank you, sir. And, sir, have you prepared, for the purposes of the Inquiry, a statement?

10 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: I'll just hand you a copy. And, sir, do you recognise that to be a statement which is dated 19 November 2024?

15 LTCOL MARSHALL: Yes, I do.

MAJ CHAPMAN: And it's four pages in length?

LTCOL MARSHALL: Yes.

20

MAJ CHAPMAN: And do you wish to make any amendments to that document?

LTCOL MARSHALL: There was one typo in it, but apart from that, no.

25

MAJ CHAPMAN: Chair, I tender the statement of LTCOL David Marshall dated 19 November 2024.

MS McMURDO: Exhibit 127.

30

#EXHIBIT 127 - STATEMENT OF LTCOL MARSHALL

35 MAJ CHAPMAN: May it please the Inquiry.

Sir, I'd like to begin with some of your background which you commence on page 1 under the heading, "Response", and I'm just going to travel through that and ask you to confirm if it's correct. So you first entered the Army as Specialist Service Officer, Aerospace Engineer?

40

LTCOL MARSHALL: Yes.

MAJ CHAPMAN: You've held appointments as an Engineering Officer in the 1st and the 5th Avn Regiments.

45

LTCOL MARSHALL: Yes.

5 MAJ CHAPMAN: And various postings in CASG, or the Capability and Sustainment Group.

LTCOL MARSHALL: Correct.

10 MAJ CHAPMAN: And they were dealing particularly with the ARH and the MRH. Correct?

LTCOL MARSHALL: Correct.

15 MAJ CHAPMAN: You moved to full-time service from a Specialist Service role in 30 September 2023.

LTCOL MARSHALL: Yes.

20 MAJ CHAPMAN: And you've stated you have nil flying experience.

LTCOL MARSHALL: Correct.

25 MAJ CHAPMAN: Your qualifications include a Bachelor of Mechanical Engineering from the University of Queensland.

LTCOL MARSHALL: Yes.

30 MAJ CHAPMAN: A Master of Military and Defence Studies from the Australian National University.

LTCOL MARSHALL: Yes.

35 MAJ CHAPMAN: And Graduate Certificates in Aerospace Engineering from RMIT.

LTCOL MARSHALL: Correct.

40 MAJ CHAPMAN: And at the time of the accident, you were posted to the AASPO, with the Army Aviation Systems Program Office. So that's in 28 July 2023. Correct?

LTCOL MARSHALL: Correct.

45 MAJ CHAPMAN: And you say that you were in AASPO as the MRH Platform Manager, though you were on long service leave. Is that correct?

LTCOL MARSHALL: Yes, correct. So I never actually did the role. I was on long service leave for the whole posting.

5 MAJ CHAPMAN: I understand. And currently you are the Deputy Commander of the South Queensland Australian Army Cadet Brigade.

LTCOL MARSHALL: Correct.

10 MAJ CHAPMAN: And you've held that position since 8 November 2024?

LTCOL MARSHALL: Yes.

15 MAJ CHAPMAN: And in the period January 2019-January 2021, you were the MRH Chief Engineer within AASPO located at Brisbane Airport. Is that correct?

LTCOL MARSHALL: Yes.

20 MAJ CHAPMAN: And your direct report was to the Director; is that right?

LTCOL MARSHALL: Correct.

25 MAJ CHAPMAN: And who is the Director or who were the Directors during that period, so January 2019-January 2021, if you can recall?

LTCOL MARSHALL: It was COL David Phillips.

30 MAJ CHAPMAN: Throughout that period?

LTCOL MARSHALL: Yes, I think so.

35 MAJ CHAPMAN: And in that role you say in your statement that you were responsible for technical governance of the MRH-90. Correct?

LTCOL MARSHALL: Correct.

40 MAJ CHAPMAN: And you were overseeing the engineering effect delivered by Airbus under the sustainment contract.

LTCOL MARSHALL: Yes.

45 MAJ CHAPMAN: And relevantly, for the purposes of this Inquiry, you

say at paragraph 6(a) of your statement that you were involved in the introduction of HMSD 5.10 into the MRH fleet. Is that right?

5 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: I'm now just going to turn to ask you some questions about the Configuration Control Board meeting number 53. And I'll just ask that exhibit to be turned up. It was 117. I'm sorry, 117. Thank you.

10 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: Sir, do you recognise that to be Minutes of a meeting of the Configuration Control Board held on 2 April 2020?

15 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: And can you confirm that those Minutes were provided to you as part of your section 23 Notice?

20 LTCOL MARSHALL: Yes, they were.

MAJ CHAPMAN: And you've had an opportunity to have a look at those Minutes?

25 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: And this is a meeting which was conducted on 2 April 2020. Correct?

30 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: And that was a meeting which you attended?

LTCOL MARSHALL: Yes.

35

MAJ CHAPMAN: Was that meeting in person or was it by virtual means?

LTCOL MARSHALL: It was in person.

40 MAJ CHAPMAN: It was in person. And can you just go over, sir, to page 5 of that document? And do you see there the table of attendees, and can you just confirm that's you in the third entry, AASPO MRH CENGR?

LTCOL MARSHALL: Correct.

45

MAJ CHAPMAN: Now, CENGR, would that be Chief Engineer?

LTCOL MARSHALL: Correct.

5 MAJ CHAPMAN: And if you just put that document to the side for a
moment because I'm going to come back to it. I just want to ask you some
general questions about the meeting. So the Inquiry has heard evidence
from a number of attendees of that meeting as to the purpose of a CCB and
we were just hoping you could assist by giving your description of the
10 purpose of a CCB?

LTCOL MARSHALL: The purpose of the CCB is to – as the name states,
is the configuration control of the aircraft or the platform. So at the CCB
changes to the configuration will be presented to the Board and they'll
15 come, at various stages of – initially for approval and the Board agrees,
“Yes, we will want to fund that”, push forward to the development. Then
they will come back once they've got the development, and then we'll step
right through the process through to service release.

20 So it's a deliberate, laid out process to allow all the stakeholders involved
to be able to confirm the requirements, confirm the necessity of it and then
go forward to make sure it's done properly, in a deliberate fashion.

MAJ CHAPMAN: And you mentioned “service release” there, and do we
25 understand it to be service release is given at either this meeting or it's given
pursuant to a delegation that's given by this meeting?

LTCOL MARSHALL: For this one in particular, do you mean?

30 MAJ CHAPMAN: Just in general.

LTCOL MARSHALL: In general, yes, correct.

MAJ CHAPMAN: And you've referred to various items that the CCB
35 considers at a meeting and you'll see in this pack, for instance, there's slide
decks dealing with different items. Is that right?

LTCOL MARSHALL: Yes.

40 MAJ CHAPMAN: And can you just go to page 12, please, of this
document. And do you see there at the box under, “6.0, Other Business and
Topics of Discussion”?

LTCOL MARSHALL: Yes.

45

MAJ CHAPMAN: Do you see there, “HMSD v 5.10”?

LTCOL MARSHALL: Yes.

5 MAJ CHAPMAN: And can I just take you to the bullet points on the right-hand column. And you see the fourth bullet down is “DM” and it says this:

10 *Request delegation is to himself, not Airbus. Can do review fairly quickly. Will discuss with Anthony Lindgren.*

Do you see that?

15 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: Now, just noting this was five years ago or so, do you agree that’s more or less an accurate representation of what occurred and that records what you said?

20 LTCOL MARSHALL: It is.

MAJ CHAPMAN: And can I just ask you to focus on the passage, “requesting delegation to himself”, and if you go to the bullet point prior, it says:

25 *Airbus requests CCB delegate SR –*
so that’s service release –
30 *of this ECP.*

Can you just expand on ECP?

35 LTCOL MARSHALL: Engineering change proposal.

MAJ CHAPMAN: Thank you. “To either Airbus or AASPO”.

LTCOL MARSHALL: Yes.

40 MAJ CHAPMAN: Sir, is it your recollection that it was Airbus that in fact made the request for delegation of service release of this ECP concerning version 5.10?

45 LTCOL MARSHALL: Correct.

MAJ CHAPMAN: It was their request for delegation to Airbus and not to you in the first instance; is that right?

5 LTCOL MARSHALL: They've asked for Airbus or AASPO, so I was AASPO.

MAJ CHAPMAN: You were AASPO, but they asked for it for themselves first, effectively.

10 LTCOL MARSHALL: Correct.

MAJ CHAPMAN: So Airbus makes the request and then you respond by saying, effectively, that you prefer the delegation go to you and not Airbus. Is that right?

15 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: The Inquiry's heard some evidence from other witnesses who attended the meeting, that your proposal – that is, delegation to you and not Airbus – was supported.

20

LTCOL MARSHALL: Yes.

MAJ CHAPMAN: The reason that the delegation to you was supported was that, in effect, it kept the decision with respect to service release within the service. Do you agree with that generally?

25

LTCOL MARSHALL: Yes.

MAJ CHAPMAN: And that was an advantage or considered to be an advantage. And I ask you to agree if you considered it to be an advantage because it was the service members who had greater operational knowledge of the proposed modification than Airbus? Do you agree with that?

30

35 LTCOL MARSHALL: You could say that, yes.

MAJ CHAPMAN: Would you agree that the intent of seeking the delegation was that it enabled service release of version 5.10 to proceed without having to wait the next CCB board which was in June 2020?

40

LTCOL MARSHALL: Yes.

MAJ CHAPMAN: Just to be clear about that, can you go to the very final page of that CCB document, and just to confirm the date, you'll see there – I'll wait until you're there. It's a slide. Do you see next CCB date is

45

25 June 2020?

LTCOL MARSHALL: Yes.

5 MAJ CHAPMAN: Was it your understanding, sir, that there was a desire to have service release approved to enable the version 5.10 update to be installed on the 6 Aviation Regiment aircraft in time for the Special Operations Qualification Course in May 2020?

10 LTCOL MARSHALL: It was.

MAJ CHAPMAN: In fact, you'll see in the comments recorded against COL Hamlyn, if I can put it like this, a deadline was given of 24 April 2020?

15 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: That was, again, to enable, the 6 Aviation fleet to be upgraded in time for that training?

20 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: Now, sir, the Inquiry's heard some evidence that the upgrade was not installed on the 6 Aviation Regiment fleet by the commencement of the SOQC training in May 2020. Do you have any
25 knowledge about that?

LTCOL MARSHALL: No, I don't.

MAJ CHAPMAN: So by that stage, service release had been granted,
30 where in May 2020, if it had not been installed or if there was some problem with it being installed by that time, would that be something you'd hear about in your office?

LTCOL MARSHALL: Not necessarily, no.

35 MAJ CHAPMAN: So once service release has been granted through your delegation, that was effectively the end of the matter for your office?

LTCOL MARSHALL: Yes.

40 MAJ CHAPMAN: Thank you. Now, I take it that your attendance at the 2 April 2020 CCB was not your first CCB?

LTCOL MARSHALL: No.

45

MAJ CHAPMAN: How many of those meetings approximately would you attend a year?

5 LTCOL MARSHALL: One every two months at that stage, I think it was.

MAJ CHAPMAN: You'd been doing that for several years in the role?

LTCOL MARSHALL: Correct.

10 MAJ CHAPMAN: Can you just comment, sir, so we can get a sense of this delegation, how frequently in your experience the Chair delegated an authority for service release?

LTCOL MARSHALL: Quite frequent.

15 MAJ CHAPMAN: Quite frequent?

LTCOL MARSHALL: Yes.

20 MAJ CHAPMAN: Would you say most meetings?

LTCOL MARSHALL: Depending on the reason for if there needed to be a delegation, but if there was – I can't – I haven't seen the other Minutes to confirm, but if there was a reason to grant service release with a caveat, then

25 that would go to a delegation.

MAJ CHAPMAN: So it was not atypical for this to happen?

LTCOL MARSHALL: It wasn't a one-off, no.

30 MAJ CHAPMAN: Particularly when there was a deadline to meet, which fell within between meetings, for example, as one reason?

LTCOL MARSHALL: Yes.

35 MAJ CHAPMAN: Now, you say at 6(a) of your statement that proceeding to service release at the meeting on 2 April 2020 was not possible because the Flight Manual I-N-A-M – so I'm going to say "INAM". Does that mean Interim Amendment?

40 LTCOL MARSHALL: It does.

MAJ CHAPMAN: Was not ready?

45 LTCOL MARSHALL: Correct.

MAJ CHAPMAN: Now, when you say “the Flight Manual INAM”, are you referring to the OEM Flight Manual, as opposed to the Standardisation Manual?

5

LTCOL MARSHALL: Yes.

MAJ CHAPMAN: Can you just develop that a little, if you could, what the Interim Amendment, as far as you can recall, was about?

10

LTCOL MARSHALL: So the Interim Amendment was an update about – I can’t recall, but it would have been about the functionality. It always goes into the actual Flight Manual, what we call the dash 1, which is a design controlled document. We just wanted to make sure that when that was produced for final insertion into the Flight Manual, that it did have all the right information in it as per what the design documentation said it should have. I was very confident that it would because it’s very rare for it to be any mishap or anything. But we just wanted to make sure, as a governance control, that that was true and correct and the SMEs were happy. Then we just let it proceed and be incorporated.

15

20

MAJ CHAPMAN: So just to be clear about that, it had nothing to do with an update that had to go through or was treated by the Standards Section; that this was an engineering issue?

25

LTCOL MARSHALL: Correct, yes, this was.

MAJ CHAPMAN: I should just give some context to that. The evidence that we’ve heard is that 5.1 was not installed on the aircraft at the point of the commencement of the SOQC because the Standardisation Manual was not yet complete. But that’s different to what you’re talking about here with the INAM?

30

LTCOL MARSHALL: Correct, yes.

35

MAJ CHAPMAN: Just to be clear about what these different documents are, the Flight Manual is produced by the aircraft manufacturer and deals with the specifications and the engineering aspects of the operation of the aircraft generally?

40

LTCOL MARSHALL: Yes, it’s the book.

MAJ CHAPMAN: While it’s not in your remit necessarily, you understand the Standardisation Manual to be an ADF publication which deals with how the aircraft can be operated from an operational perspective?

45

LTCOL MARSHALL: As I understand it, yes.

5 MAJ CHAPMAN: There's some crossover between the two of them?

LTCOL MARSHALL: Of course.

10 MAJ CHAPMAN: You describe, by reference to the Minutes there, you say that it can be done fairly quickly; that is, the change?

LTCOL MARSHALL: Yes.

15 MAJ CHAPMAN: You say that because, as you said in your evidence just now, you were fairly confident that this could all be done, and it was done?

LTCOL MARSHALL: Yes.

20 MAJ CHAPMAN: Lastly, you refer to having discussed the matter with an Anthony Lindgren?

LTCOL MARSHALL: Yes.

MAJ CHAPMAN: I take it he was the software engineer?

25 LTCOL MARSHALL: Correct.

MAJ CHAPMAN: And your SME for this purpose?

30 LTCOL MARSHALL: Exactly, yes.

MAJ CHAPMAN: Subject-matter expert, for the transcript. I'll just take you to paragraph 7(d), sir, of your statement. You say that you sought a reassurance from Mr Lindgren that the Interim Amendment reflected the necessary flight changes that were needed.

35 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: Your evidence is that they did. Correct?

40 LTCOL MARSHALL: Correct.

MAJ CHAPMAN: Then on the basis that they did, you granted service release under the delegation that had been provided to you by the CCB?

LTCOL MARSHALL: Correct. I granted that the caveat of the INAM for the Flight Manual was good to go, which then allowed service release.

5 MAJ CHAPMAN: Was it your understanding in this process that service release, you having given service release or made that decision, that was the last step necessary before physical installation of the 5.10 upgrade?

LTCOL MARSHALL: Correct.

10 MAJ CHAPMAN: Was it your expectation that from when you gave service release that a Minute or a memo or something was sent down to the technicians in the Regiments to start installing? Is that how it worked? Could you just describe that process?

15 LTCOL MARSHALL: No, it's a bit longer than that. That's actually a modification, or a deviation. In this case it would have been a modification that would have been raised, then uploaded through the logistic support analysis, and all the back-end information to be then loaded into the Aircraft Maintenance Manuals and the maintenance system for then to allow them
20 to incorporate that modification as and when the fleet management needed that modification to be incorporated. So it's a MOD that sat there until it was needed to be installed.

25 MAJ CHAPMAN: Thank you. Just going back briefly to those Minutes at page 13 – do you have those there?

LTCOL MARSHALL: Yes.

30 MAJ CHAPMAN: It says there:

*COL Karl Hamlyn said, "Remind everyone of the intent. 6 Aviation are currently in a quiet period. We have until 24 April for when we can push version 5.10 into the aircraft, so can be used at next training in May. It needs to be on aircraft by the point to
35 be utilised".*

Do you have a recollection of COL Hamlyn saying those words?

40 LTCOL MARSHALL: I do, yes.

MAJ CHAPMAN: COL Hamlyn is representing the Capability Manager?

LTCOL MARSHALL: Yes.

45 MAJ CHAPMAN: You say at paragraph 8(b) of your statement that that

date was requested by DACM or DACM's representative, being COL Hamlyn?

5 LTCOL MARSHALL: Correct.

MAJ CHAPMAN: In terms of this desire to have the software update installed in a timely or prompt fashion, that was because, as you say at paragraph 9(b), was it, that the capability had been impacted by long delays primarily resulting from industry delays and the delivery of equipment?

10 LTCOL MARSHALL: Correct.

MAJ CHAPMAN: And that the delay in the delivery of equipment had knock-on effects in terms of delays in training?

15 LTCOL MARSHALL: Correct.

MAJ CHAPMAN: At paragraph 9, you see in your statement you – I withdraw that. You say that you have responsibility for the technical engineering processes?

20 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: You say further that it was not your responsibility to consider any operational issues regarding any outcome that may have resulted from flight testing?

25 LTCOL MARSHALL: In the context of the CCB, yes.

MAJ CHAPMAN: That's in the context of an "unacceptable" finding having been made by the Fight Test Organisation, AATES, earlier?

30 LTCOL MARSHALL: That's correct. That's not my lane.

MAJ CHAPMAN: You were asked a question if you engaged with the Army Chain of Command on that issue and said "No", because, as you've just given evidence, that's not your function to deal with.

35 LTCOL MARSHALL: Correct.

40 AVM HARLAND: Just a question about responsibility then. If a modification comes with an identified risk – for example, the display of ambiguous attitude – are you responsible or is it part of your remit to then go and consult about what other controls might be available in terms of engineering substitution or elimination?

45

5 LTCOL MARSHALL: Sir, that would be something that would have been considered well before this point, if it was. So as being a member of the CCB, as you probably understand, those concerns around any mitigations in that was all presented at the CCB as part of that assurance from across the board to make sure that service release was good to go ahead from all those elements, and from all the stakeholders.

10 AVM HARLAND: So at the CCB, interaction of version 5.1, we've got this "undesirable" feature, which is the attitude ambiguity when looking off-axis. Did the CCB go through a process by which they said, "We've looked at this and there are no available controls, other than the administrative control of putting a warning in the Flight Manual or the Standards Manual"?

15 LTCOL MARSHALL: To the best of my recollection, that was all sort of talked about and discussed before the CCB. I think it was more of a – I can't recall exactly the conversations at the CCB, apart from what's in the Minutes, sir. So my apologies, I can't say if verbatim that was discussed.

20 AVM HARLAND: Are you aware of any documentation where there was a request made to either NHI or Airbus or SUZ to say, "Can we fix this software. Is there a short-term patch we can put on it"?

25 LTCOL MARSHALL: To the best of my knowledge, there was discussion for this to be less desirable to say, if you like, to be able to fix the problem, push that back to Europe and then look at our experience for that. It would have been years before we would have got a solution anyway. Yes, so we would have asked for it and it would have been put through the Airbus system to go back and ask for that fix, if it was asked for formally.

30 AVM HARLAND: So there should be a record of Army formally asking for options to address this risk through a software update, rather than just assuming that it would be "is there a way", there would be a formal ask?

35 LTCOL MARSHALL: There should be a formal ask if they wanted an engineering change, which we would have then raised through Airbus back to Europe, if that was asked.

40 AVM HARLAND: Okay.

MAJ CHAPMAN: When you say, sir, "there would be", are you saying you have direct knowledge of there being such a request?

45 LTCOL MARSHALL: No, I don't know that.

MAJ CHAPMAN: There may be a request?

5 LTCOL MARSHALL: There may have been, but I don't recall one coming forth at that time.

MAJ CHAPMAN: So you're aware at the CCB that there was this attitude ambiguity; is that right?

10 LTCOL MARSHALL: I had heard of it, yes.

MAJ CHAPMAN: We've established – and I don't say this critically – that you proceeded to delegated service release on the basis that the INAM to the Flight Manual you were satisfied was now correct and that you
15 proceeded on that basis.

LTCOL MARSHALL: Yes, that was – yes.

MAJ CHAPMAN: You say at paragraph 14 of your statement that you
20 refer to the distance to go function as greatly improving their approach to the target, the MRH-90's approach to the target. Correct?

LTCOL MARSHALL: That was my understanding, and one of the requirements for version 5.10 update.

25 MAJ CHAPMAN: You then say:

It allowed our software version to remain aligned with our EUR –
30 *so European partners –*

as part of the collective MRH community.

35 Correct?

LTCOL MARSHALL: Correct.

MAJ CHAPMAN: Could you just expand on what you meant by that?

40 LTCOL MARSHALL: With the HMSD, we had taken obviously the German certification process and so we had the same software version as them. What we wanted to avoid is that not to Australianise too much any of the software or anything further than what we already have because if there was an update to come down from the bigger parties in Europe, then
45 we would naturally go in lockstep with that. But once we start to

Australianise ours and deviate from the basic design of the helicopter and the software, then we're creating our own problems for ourselves down in the future.

5 So the important thing was to stick with what the Europeans are doing. It's better for us for money for value as well because obviously we have a fairly large fleet and therefore a large portion of the costs in the engineering development. So it made sense for us to go in there and be part of that partnership.

10

MAJ CHAPMAN: I just now want to turn to ask some questions about the MTCH. Can you just confirm that's the Military Type Certificate Holder?

LTCOL MARSHALL: Yes.

15

MAJ CHAPMAN: You address this at paragraph 17 of your statement where you say at paragraph 17(a) that the MTCH was an organisation and not an individual and it sat within the AASPO. Correct?

20

LTCOL MARSHALL: Correct.

MAJ CHAPMAN: And that, as the Chief Engineer, you say at 17(a), you would delegate the oversight of the MTCH function?

25

LTCOL MARSHALL: Correct.

MAJ CHAPMAN: Can you just explain what the MTCH function and that part of your role was about?

30

LTCOL MARSHALL: Yes, sure. So as the Chief Engineer – or all Chief Engineers for each platform are responsible for the oversight and the governance of the type design of the platform. Whenever there's a design change, or a significant design change, there is a process that has to go through and obviously DASA, as the Regulator, have to then be involved, especially for major changes. To do that, to do any design change to your type certificate, you need to have a Design Organisation, or Military Design Organisation.

35

40

We had one in the sense that we used Airbus, contracted. So they were the Design Organisation. My function as the Military Type Certificate Holder representative was to assure that the work that they've done, and the information they're putting forward to request for DASA to make the changes to the type design, was fit and proper, firstly, within the realms of what we need. And that going forward, that I maintained a relationship

with that Military Design Organisation, should we need to make any further changes down the track.

5 MAJ CHAPMAN: Moving on in your statement to paragraph 17, you give evidence to the effect – and I’ll ask you to agree with this first – that it did not surprise you that Army Aviation conducted an Operational Evaluation in this instance?

10 LTCOL MARSHALL: Correct.

MAJ CHAPMAN: And that it did not surprise you because it was routine and essential for Army Aviation to garner further information to inform the Commander’s assessment of risk and to help inform suitability of the capability. Correct?

15 LTCOL MARSHALL: Correct.

MAJ CHAPMAN: You were next asked a question concerning your knowledge of the OT-CRM; is that right?

20 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: Do you understand the OT-CRM essentially is a risk register that’s available to, among others, the Commanders in terms of assessing risk?

25 LTCOL MARSHALL: Correct.

MAJ CHAPMAN: The risk register was no doubt one of several sources of information that were updated with assessments of risk as they developed across the platform?

LTCOL MARSHALL: Yes.

35 MAJ CHAPMAN: Do you recall whether a risk assessment – or if a risk assessment was conducted in respect of version 5.10 that you had any knowledge about or saw?

40 LTCOL MARSHALL: No, I don’t recall.

MAJ CHAPMAN: So you’d have no knowledge of whether there was a risk assessment which was updated or uploaded into the OT-CRM?

45 LTCOL MARSHALL: No, I don’t.

MAJ CHAPMAN: Did you have access to the OT-CRM?

LTCOL MARSHALL: Yes, we did.

5 MAJ CHAPMAN: Did you make use of the OT-CRM in respect of any decisions that you make with respect to service release or changes to type?

LTCOL MARSHALL: Not normally, no. It's not something that we would refer to.

10

MS McMURDO: Did you have a role in updating the OT-CRM?

LTCOL MARSHALL: We did. So, through Airbus, we used their System Safety Team to update that and that usually was done, ma'am, for the – we had, I think, a twice yearly meeting that was run by the Director of Op Airworthiness, DOPAW, and his team. So they managed and maintained that register. Obviously, the T in OT-CRM stands for Technical and it was a combined Risk Management Tool between the operation and technical staff.

20

We had technical risks in there. We managed some of the risks that were in there. So we had access to it to update it, to give progress on how we're proceeding, particularly for engineering changes to address particular risks.

25 MS McMURDO: So was it updated on a needs basis or was it updated at fixed, regular intervals, that you do all the updates at certain times – twice a year, three times a year, et cetera?

LTCOL MARSHALL: Ma'am, I can't quite recall, but I would have thought it would have been more of a fluid document that was always updated.

30

MS McMURDO: Updated as needed?

35 LTCOL MARSHALL: As it needs, because that would make more sense.

MAJ CHAPMAN: Going back to the meeting of the CCB, do you know whether the OT-CRM was considered at all in respect of 5.10 at that meeting?

40

LTCOL MARSHALL: No.

MAJ CHAPMAN: Sir, as a final topic, I'm going to hand you a copy of a document. It's best described as an EAF. That's been served, Chair. Are you familiar with that document or what an EAF is?

45

LTCOL MARSHALL: I'm familiar with what it is, yes.

MAJ CHAPMAN: Could you assist us by explaining what an EAF is?

5

LTCOL MARSHALL: I don't recall what the acronym is, but it's a printout of the ML2 engineering task, I suppose, which is our governance tool that we used for engineering work for the Commonwealth in engineering.

10

MAJ CHAPMAN: I'll take you to various parts of this, sir, and just ask for your assistance understanding it. But is this set out as, in your experience, I suppose, a narrative by date, in chronological order of what has occurred with respect to a particular ECP?

15

LTCOL MARSHALL: That's my understanding, correct.

MAJ CHAPMAN: We have up the top here, just to identify it – maybe first of all I'll tender that document.

20

MS McMURDO: I believe that's 128.

#EXHIBIT 128 - PRINTOUT OF ML2 ENGINEERING TASK

25

MAJ CHAPMAN: Do you see up the top there its project or process title, and we're dealing with HMSD software update 5.10?

30

LTCOL MARSHALL: Yes.

MAJ CHAPMAN: There are various headings in green, and I won't go to every single stage of this, but one of the entries is 20 June 2018 and that's that Mr Lindgren, the software engineer, there, and this is a Development Approval Evaluation Report. Do you see that?

35

LTCOL MARSHALL: Yes.

MAJ CHAPMAN: Now, take it from me that's prior to the AATES testing which occurred in June 2019, so it's about a year earlier. I've just flagged a few parts here, sir, which I'll ask you to go to. Can you go to page 14, please. Now, at page 14 do you see "Incorporation Approval Evaluation Report"?

40

45

LTCOL MARSHALL: Yes.

MAJ CHAPMAN: Is incorporation approval a reference to a DASA stage of approval?

5 LTCOL MARSHALL: No, incorporation approval is more to a CCB approval. So to get IA, or incorporation approval, it would have had to have gone through the CCB.

10 MAJ CHAPMAN: So that's on 7 March 2019. Can you go over a few more pages, to the 19th – that's page 19. Now, do you see there in the middle of the page – and they're not referenced, unfortunately – but do you see there it says:

15 *There are no noteworthy hazards identified in association with this ECP.*

LTCOL MARSHALL: Yes.

20 MAJ CHAPMAN: Now, do we date this entry as the date on page 14, which is 7 March 2019? Is that reasonable?

LTCOL MARSHALL: I couldn't answer that question.

25 MAJ CHAPMAN: Well, just working with a date like that at the moment, 7 March 2019, on one view of it, would you agree on 7 March 2019 there's been an entry made by Mr Lindgren, according to this document, that:

30 *There are no noteworthy hazards identified in association with this ECP.*

Do you agree that's possible?

LTCOL MARSHALL: Yes.

35 MAJ CHAPMAN: Now, that's prior to the AATES testing where it was discovered that there was an unacceptable issue with the symbology ambiguity. My question is this. What would you generally expect to find as a noteworthy hazard. Is that one which has come down from the OEM or what's the nature of a noteworthy hazard in this context?

40 LTCOL MARSHALL: In this context is an engineering review of the software and its functionality and if it would have any impact on the design of the helicopter in the process of incorporating it, not particularly anything to do with how it's operated or used. So the context here is that there's no
45 noteworthy hazard that this will trigger some sort of other event on the

helicopter from a software, and ones and zeroes not getting lined up correctly, to be sort of simple terms.

5 MAJ CHAPMAN: So it's an expression of a – my words – but an engineering hazard, as opposed to any hazard which may have been identified by a Flight Test Organisation, for example?

10 LTCOL MARSHALL: A hundred per cent. This document is only from an engineering perspective and not from an operator's point of view at all.

MAJ CHAPMAN: Thank you for clarifying that.

15 MS McMURDO: So it doesn't deal with the human interface; is that the distinction?

LTCOL MARSHALL: Not at this point, no. That's correct, ma'am.

20 MAJ CHAPMAN: I might just take you over to page 25. This is on that same basis for assuming the earlier entry was 7 March 2019. This is 21 April 2020, and this is post the AATES testing. It's why, on page 25, we see under that same "D3" heading there's no entry there for anything to do with the ambiguity being a hazard. Because, as you say in your evidence, even if that was recognised – which it is in this document and other places – it's not something which you would characterise as a hazard
25 in this engineering document.

LTCOL MARSHALL: Correct.

30 MAJ CHAPMAN: Just back on page 24 – and I'm coming to the end of my questions – do you see there, "Service Release Evaluation Report" on page 24, halfway down?

LTCOL MARSHALL: Yes.

35 MAJ CHAPMAN: So we've got, in the timeline, 4 April 2020 was the CCB determination delegating to you authority for service release on behalf of the Board. Is that correct?

LTCOL MARSHALL: Correct.

40 MAJ CHAPMAN: Then we have, later that month and prior to – I should add, the date that was nominated for the SOQC update, we have 21 April, a Service Release Evaluation Report. Correct?

45 LTCOL MARSHALL: Correct.

MAJ CHAPMAN: Can you just describe this: “AASB instruction”? In that document, do we find the requirement for a Service Release Evaluation Report to be prepared?

5

LTCOL MARSHALL: They should, yes.

MAJ CHAPMAN: What does that mean? What does “AASB instruction E&T” – can you just expand that, if you could?

10

LTCOL MARSHALL: That acronym is the Army Aviation Systems Branch, so the branch within CASG that looks after the Army Aviation’s capability. And E&T is the engineering and technical instruction, and the numbers are obviously just the registered numbers of that instruction.

15

MAJ CHAPMAN: We see there, as with other places in this document, which I haven’t yet taken you to, but it’s probably sufficient to just do it from here – see at the bottom of page 24, we really start the narrative that is the focus of this aspect of Inquiry. We’ve got:

20

Operational assessment conducted by AATES in June 2019 with an “unacceptable” finding.

Do you see that?

25

LTCOL MARSHALL: Yes.

MAJ CHAPMAN: Next, we have:

30

The Program Office advised of status and a FORCOMD requirement to conduct the further Operational Evaluation activity.

LTCOL MARSHALL: Correct.

35

MAJ CHAPMAN: Then the next paragraph:

FORCOMD STDS –

40

which is Forces Command Standards –

conducted the operation activity in November ’19.

I think that should be November ‘20. That might be an error. And then

there was operational endorsement by COL Norton. What's the AIS update?

5 LTCOL MARSHALL: I think it's – I can't actually recall. My understanding of it is the aircrew information set, but I could be wrong. It's the manuals.

MAJ CHAPMAN: That's the manuals?

10 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: The Flight Manual?

15 LTCOL MARSHALL: All the manuals. AIS, my understanding of AIS, and you probably need to correct – get a proper definition of what it means – but it's the aircrew information.

MAJ CHAPMAN: So is this saying that all the aircrew information has now been released via that Objective reference?

20

LTCOL MARSHALL: That's what would have been found at the time, and that's what that – according to – I don't know what's in those two references.

25 MAJ CHAPMAN: Sure.

LTCOL MARSHALL: But those two references obviously state that that has now been released. Otherwise, it wouldn't be in this document.

30 MAJ CHAPMAN: Would you expect that to be a reference to include the Standardisation Manual?

LTCOL MARSHALL: I couldn't say.

35 MAJ CHAPMAN: And then we continue, and we've got AATES has responded, and that's – you're aware there was a response from AATES to the Operational Evaluation?

40 LTCOL MARSHALL: Okay, yes.

MAJ CHAPMAN: Then we have the Director-General Aviation Branch confirmed the decision brief and so on. Then over the page – and I won't take you to all of this, sir, but we've got over the page in STANMAN, we've got:

45

INAM 56 now incorporated.

LTCOL MARSHALL: Yes.

5 MAJ CHAPMAN: Was that the document, essentially, you were waiting on for service release to then be effected?

LTCOL MARSHALL: No.

10 MAJ CHAPMAN: Then we've got over the page, on page 27, in the middle, you've got:

Airbus Australia Pacific WHS analysis is provided, identifying no new or impacted WH&S hazards.

15

It continues. We go over the page, page 28, in the middle:

I just point out, at the time of this SR review –

20 so this is 21 April 20 –

the fleet incorporation had not yet commenced, pending service release.

25 There's a reference to the Airbus Incorporation Plan and that DACM had provided endorsement. Do you see that?

LTCOL MARSHALL: Yes.

30 MAJ CHAPMAN: Then there's, a couple of references down:

All required stakeholders have been provided; preconditions have been met to support the grant of service release.

35 Do you see that, sir?

LTCOL MARSHALL: Yes.

40 MAJ CHAPMAN: Then finally we have, on the basis – and this is Mr Lindgren's words – do you agree this is his entry, according to this document?

LTCOL MARSHALL: Yes.

45 MAJ CHAPMAN:

On the basis of the preceding review, I recommend service release be granted in respect of this ECP.

5 You then, on 21 April 2020 at 3.47 pm:

Decision recommend. Complete.

10 You reference your delegated authority to the CCB, identify your role as the MRH Chief Engineer and you recommend service release be granted. Correct?

LTCOL MARSHALL: Yes.

15 MAJ CHAPMAN: Then can you just go over the page, and this might be a very minor matter, but on page 30, the next entry, it doesn't say by who, but it's:

20 *Decision passed. David, can you please decide the step to be completed for service release and select me for the next step process closure.*

Is that just an administrative function that needed to be taken care of?

25 LTCOL MARSHALL: Yes.

MAJ CHAPMAN: I'll just check there's nothing else. Sir, those are my questions. Thank you.

30 AVM HARLAND: Can we just go back to page 27, please? Just in the centre, under the P7 designation, it says:

35 *The Airbus AP WHS analysis is provided at A40-ER-002552, where they identify no new or impacted WHS hazards.*

LTCOL MARSHALL: Yes.

40 AVM HARLAND: Can you explain how that might relate to the identified hazard of the ambiguous attitude? Because that was identified – because this, by my recollection, was around about 21 April '20. So the organisation, by my understanding, understood that hazard and had taken steps to mitigate it. So is that related to that comment in any way?

45 LTCOL MARSHALL: No. So that report, A40, that stands for the MRH, obviously, being the tail number. But then "ER" is Engineering Report. So

this is an Engineering Work Health Safety assessment in the context of the design and the technical side, not the operational side.

5 AVM HARLAND: So they're, as you're loading the software, there's no - - -

LTCOL MARSHALL: No hazards.

10 AVM HARLAND: - - - working out heights or anything like that.

LTCOL MARSHALL: Correct, sir. That's exactly right. Unlike, you know, if we're doing something like changing the undercarriage, where you'd have to jack the aircraft and pull all those things into consideration, or changing out a fuel tank. This is literally a box in, box out software change. So there's no work. So directly related to the MOD.

AVM HARLAND: Thank you.

20 MAJ CHAPMAN: Thank you. No more questions, Chair.

MS McMURDO: Yes. Applications to cross-examine? Yes, LCDR Gracie.

25 **<CROSS-EXAMINATION BY LCDR GRACIE**

LCDR GRACIE: Sir, my name's LCDR Malcolm Gracie. I represent the interests of CAPT Danniell Lyon, who was in Bushman 83. Can I just ask if you could have a look, please, at the last page of your statement, page 4? It's paragraph 17(c).

LTCOL MARSHALL: Yes.

35 LCDR GRACIE: You say you'd consider it routine for Army Aviation to conduct an OPEVAL to garner more information; you'd be surprised if they didn't. Just in terms of drilling down a little bit into who "Army Aviation" are there, are you there talking about the OT&E Section, which is primarily AATES, who would be doing that testing?

40 LTCOL MARSHALL: No, I'm not. No, I'm talking about Army in general. So I obviously worked in CASG, and Army is the customer. So as the customer, whether it's the operators, the test team, all of those, part of the operation test – part of any test and evaluation process there's certain steps you take from a systems engineering point of view. So when I say I

wouldn't have been surprised is, you do a production acceptance test or design test and evaluation, then an Op Test and Evaluation, then you can take it down to the next level for an OPEVAL, and then follow through with return reporting once it's released. So that's the system approach to it. So
5 standardly, if there was any concerns about something, of course an OPEVAL would get done to try and get more information to inform the decision-makers.

10 LCDR GRACIE: But it's not then a standalone process. As you said, it could be a cascading process or a combination of processes.

LTCOL MARSHALL: They're all linked, yes.

15 LCDR GRACIE: It's not just one OPEVAL that might answer the issue.

LTCOL MARSHALL: No, not necessarily.

20 LCDR GRACIE: I won't be long, but I just do want to ask you some things about the EAF. I guessed it might have meant an Engineering Assessment Form. No?

LTCOL MARSHALL: It's been five years, and I think – I don't know if even they still use the system.

25 LCDR GRACIE: The first item I want to go to, it's – that date is 6 March. You'll pick up that date on page 7.

LTCOL MARSHALL: Yes.

30 LCDR GRACIE: But I want you to run over, if you could, please, to page 10, and it's the third item down from the top. It talks about – you can just read it to yourself there – but:

35 *The provision of preliminary training material which has been reviewed by Aviation Training Command, noting symbology changes and modified symbology behaviour and identifies a low training impact to train on both 4 and 5 under a –*

40 I'm more interested in this –

the mixed fleet configuration until roll-out schedule completion.

Do you know what that's a reference to?

5 LTCOL MARSHALL: So this was an assessment that would have been done by their Project Office Engineer down in Canberra, because we were obviously up in Brisbane. But having said that, what's it in reference to? They would have had to have reviewed obviously the impacts of a training study that was done to make sure that – when you modify an aircraft – and it doesn't matter what component it is – the aircrew need to go through a training process, as do the technicians, to understand what that change is. So making sure that that training is not going to cause any issues.

10 So they've done an evaluation of a training study and come up with that entry.

15 LCDR GRACIE: Then I just want to run through a couple of things just to get your feedback, and it won't be long. Page 13, if you can then look at that, please, and it's under the item number 18. It's a question about assurance that any impact on technical data has been assessed. The answer is, "No". I see that you were asked some questions about the Airbus Flight Manual, the technical manual, and then we've got here, "DOPAW Standards Aircrew". Is that a reference to the impact on the upgrade not
20 having yet been assessed by either Airbus or Standards?

LTCOL MARSHALL: So that date of that entry, sorry, was? That was in March '19.

25 LCDR GRACIE: Still 6 March '19.

LTCOL MARSHALL: Yes, '19. So at that point in time – so they didn't have any assurance that any impact on that had been assessed. So the answer was no.

30 LCDR GRACIE: Can you help me with the meaning of the last sentence? There's a lot of numbers and acronyms.

LTCOL MARSHALL: Okay.

35 LCDR GRACIE: I'm not sure what it means, about something being delivered concurrently in order to achieve service release. Is that the Flight Manual and – what's the CCUG?

40 LTCOL MARSHALL: I do not know what the CCUG is.

LCDR GRACIE: But the Flight Manual and the CCUG are being delivered concurrently.

LTCOL MARSHALL: Yes, correct. I think the CCUG is some sort of user group.

5 LCDR GRACIE: Just drop down to under number 20 if you can. Am I reading that correctly to understand that the incorporation of the software is about three and a half hours per aircraft? Is that what I'm reading there correctly?

10 LTCOL MARSHALL: Yes.

LCDR GRACIE: Is that all it is?

LTCOL MARSHALL: If that's what it reads, yes.

15 LCDR GRACIE: It is the software I'm looking at there, not the firmware?

LTCOL MARSHALL: Yes. Well, yes, it is as it reads. I don't know how to break that down.

20 LCDR GRACIE: But did I put it correctly, did I? It looks like three and a half hours for the software to be installed, per aircraft?

25 LTCOL MARSHALL: Yes. So what that says, it's the incorporation is three and a half hours per aircraft, which is a total of five and a half hours of maintenance time. So you need the aircraft offline for five and a half hours to do whatever changes need to be done, which includes three and a half hours of ones and zeroes getting realigned and put in.

30 LCDR GRACIE: Just over the page, page 14. I just want to see whether or not I'm seeing too much into this or whether there is something else. When it talks about the OPEVAL, it says:

35 *The conduct of OPEVAL under AATES tasking request, with the aim to validate the helmet-mounted sight display.*

So this is talking about the AATES testing under safe flight conditions:

40 *In order to support SR inclusive of SO approach profiles, OPEVAL will also serve to validate IETP.*

Which is the?

LTCOL MARSHALL: The Interactive Electronic Technical Publications. It's the Maintenance Manual. Well, it's a bit more than a Maintenance

Manual, but it's the Interactive Electronic Tech Pubs, which had all the information but was mainly used for maintenance.

5 LCDR GRACIE: "And AIS updates", which is – as you said, that's both the Flight and the Aircrew Manuals?

LTCOL MARSHALL: Yes, the aircrew information updates, correct.

10 LCDR GRACIE: "To provide support to upgrade". When it talks about "to validate", it doesn't really have the aim to validate, does it? It's really the aim to test it?

LTCOL MARSHALL: An eval?

15 LCDR GRACIE: Yes.

LTCOL MARSHALL: Yes, to evaluate, operationally.

20 LCDR GRACIE: But it doesn't go out with the aim to validate something, does it? It doesn't have the preconceived idea to go and validate something. Or am I reading that correctly? That is its aim?

25 LTCOL MARSHALL: My understanding of an OPEVAL is to take it out and check it out. You're not testing. Testing's been done. But you're checking to see, to get more information.

LCDR GRACIE: But in this case, we're talking about AATES doing this testing, not Standards.

30 LTCOL MARSHALL: Yes. They did OPEVALs as well as operational tests, and they did a variety of things for us.

35 LCDR GRACIE: So the way I'm seeing this is you're – and you don't have to embrace the proposition – but what you're saying is that this OPEVAL might be subsequent to testing that's been done. And the OPEVAL is then to validate something.

40 LTCOL MARSHALL: We'd have to look at what the plan for – the Test and Evaluation Plan that usually is. There's usually a Management Plan that sits over the top of this. What those particular ones that were asked to have been done by the Project Office would indicate what they would have – because they had some objectives or some outcomes that they would have been seeking as a result of that. And I think that would – as they say there, it also served to validate those publications.

45

LCDR GRACIE: We're now in the realm of 7 March 2019. It's only the next day. But if we can go over to page 15, there's a reference to "already committed funding arrangements". That's at about point 7 on the page.

5 LTCOL MARSHALL: Yes.

LCDR GRACIE: And then under that there's:

10 *The possibility of additional funding for alternate freight methodology to support timely modification roll-out.*

Are you aware of what that's about? Is that about a time pressure to get the equipment out to Australia faster than might have otherwise been part of the original arrangement?

15 LTCOL MARSHALL: That's what it certainly reads to me, but no, I don't understand what – I have no background information as to where. Are they talking about coming out from Europe or coming from, you know, Brisbane to Sydney? I'm not sure what they're talking about there. That would've been purely put in there as a contractual means, obviously.

20 LTCOL MARSHALL: That's what it certainly reads to me, but no, I don't understand what – I have no background information as to where. Are they talking about coming out from Europe or coming from, you know, Brisbane to Sydney? I'm not sure what they're talking about there. That would've been purely put in there as a contractual means, obviously.

LCDR GRACIE: Can I ask you to turn the page? Just look at the second-last entry. I want to ask in relation to that, which begins with the words:

25 *Note that the design approval –*

again, am I reading that correctly, in that there's a certification design approval or a design type approval? That's the baseline.

30 LTCOL MARSHALL: Mm-hm.

LCDR GRACIE: And then there's that further operational testing for the Australian configuration, I take it? Something like that. Is that how it works? Is it baseline and then there's an operational environment that - - -

35 LTCOL MARSHALL: No, what that reads is that the design approval for this is applicable to the MRH. So the SUS-02 TAUA, that's a technical term for the configuration of the MRH at the time.

40 LTCOL MARSHALL: No, what that reads is that the design approval for this is applicable to the MRH. So the SUS-02 TAUA, that's a technical term for the configuration of the MRH at the time.

LCDR GRACIE: Yes.

45 LTCOL MARSHALL: So that's for that baseline. There was a later software update, Software Update #3, which that design approval would have to then go back through further assessment to make sure that it's

applicable to the next version of the software of the entire helicopter update.

5 LCDR GRACIE: And just for the transcript, when you say “TAUA”, that’s the acronym T-A-U-A?

LTCOL MARSHALL: Correct.

10 LCDR GRACIE: And that’s an engineering - - -

LTCOL MARSHALL: That’s a Eurocopter term. That’s an Airbus term for our aircraft. So the AU in the middle means Australia. The T in the front means Tactical Troop Helicopter, and I’m pretty sure the A at the end is referring to the engines they were using.

15 LCDR GRACIE: But that’s from an engineering certification, isn’t it?

LTCOL MARSHALL: No, that’s from the OEM. That’s what they refer to the aircraft as. Yes.

20 LCDR GRACIE: But what’s the baseline? Why is there a baseline? Is that - - -

LTCOL MARSHALL: The baseline is the design, the type design is the baseline. Where they’re talking about type design, so that aircraft, our aircraft, with that software configuration number 2. So the design approval is only applicable to our aircraft with that software version in it.

30 LCDR GRACIE: And then if you look at the next paragraph down?

LTCOL MARSHALL: Yes.

35 LCDR GRACIE: It talks about that next set from the baseline. Is that how we – okay.

LTCOL MARSHALL: That’s correct, yes. So if we were to upgrade it, we would need to have another – just make sure that there’s no spurious changes that require - - -

40 LCDR GRACIE: I won’t be a second. There’s only one more thing to cover. If we go to page 25 – and this you’ll see, back on page 24, has an entry date of 21 April 2020 with a note “complete”.

45 LTCOL MARSHALL: Mm-hm.

LCDR GRACIE: The reference at page 25 – and I just want you to take it from me, on the fifth block down it says:

5 *DG AVN Branch, FORCOMD has confirmed the 5.10 suitable for use as per BQ12100428.*

LTCOL MARSHALL: Yes.

10 LCDR GRACIE: Will you take it from me what that document is, that is a decision brief – this is “BQ” ending in “428”. That’s a decision brief that goes from LTCOL Norton and COL Lynch, so SO1 Standards and DOPAW respectively, to DG AVN. So, as I understand, this EAF, it’s identifying that document as being the defining document for service release. Is that - - -

15 LTCOL MARSHALL: What that says is that our customer has confirmed that HMSD version 5.10 is suitable for use. That’s what that sort of statement is referring to.

20 LCDR GRACIE: And then there’s a reference over the page to STANMAN, and it specifically refers to paragraph 12 of that decision brief to DG AVN. Paragraph 12 referring to OIP amendment action that is within operation domain. “OIP amendment” is?

25 LTCOL MARSHALL: I can’t honestly tell you what the acronym means, but that’s the operational documentation.

LCDR GRACIE: Documentation. It could include the Standardisation Manual in it?

30 LTCOL MARSHALL: Correct.

LCDR GRACIE: And so what that is effectively saying is that whatever changes need to be made – and as per the subheading, “STANMAN” – that is referencing back to that brief whatever the controls were in that paragraph 12 - - -

LTCOL MARSHALL: I would assume so.

40 LCDR GRACIE: - - - to be implemented. Now, does it mean, though, that if I go back to that date of 21 April ‘20 where it’s got “decision recommend complete”, does that mean that that action has been completed by 21 April?

45 LTCOL MARSHALL: No.

LCDR GRACIE: It doesn't. Is it the decision is logged or this reference is logged at that date?

5 LTCOL MARSHALL: So that "complete" refers to the technical engineering logistic component of this modification is complete. Would you like me to give you an analogy to help understand that or - - -

LCDR GRACIE: Please feel free, yes.

10

LTCOL MARSHALL: It's similar to if you were to build a house, right. And your house needs, right, all sorts of design and stuff like that happening. At the end of the day you've got the keys in your hand, you're about to hand the keys over to the owner. But the fire detectors weren't fully functioning, so my crew is in charge of the fire detectors on certification. I'll hang onto the keys until they're done, but I'm not responsible for sort of, like, the operation or the plumbing and all the other stuff.

15

20 So, you know, it's a crude analogy. So my team are saying here the technical stuff is sorted, it is the engineering change proposal from Airbus is approved and is ready for service release because that Flight Manual update has been presented and is ready to be released. So if that makes sense.

25

LCDR GRACIE: It does, thank you.

LTCOL MARSHALL: Thank you.

30 Lcdr GRACIE: Thank you, sir. Thank you.

MS McMURDO: So when you're talking about the technical side, you mean its impact on the machine itself?

35 LTCOL MARSHALL: Correct, yes.

MS McMURDO: Yes, thank you. Yes, any other applications to cross-examine? COL Gabbedy?

40 COL GABBEDY: Three points.

<CROSS-EXAMINATION BY COL GABBEDY

5 COL GABBEDY: Thank you, ma'am, sir. Colonel, I'm COL Nigel Gabbedy. I appear for MAJGEN Jobson. Could you just explain what the EAF is conveying, what that document does?

10 LTCOL MARSHALL: The EAF is the decision, engineering decision, that we hold in a software program called Emerald, or Emerald 2, which is CASG's, or is Army Aviation System Branch's system for our own quality management, quality control, about all our decisions that go through. So that all those questions that you read and go through are questions out of an instruction to tell us what we need to record.

15 So all our Commonwealth engineers, because we were not doing the insurance, we were doing the assurance. Airbus was the Design Organisation doing all the engineering work. What we had to do was make sure that they did it in accordance with (a) the contract, but (b) to manage that we had those instructions as E&T Instructions.

20 That's what this document records that we've done, that governance and assurance that it's met all those requirements. Therefore, it's allowed to progress through various stages of the CCB.

25 COL GABBEDY: So am I right in assuming – and correct me if I'm wrong – that it records the project drivers and considerations that have been taken into account in the path to service release?

30 LTCOL MARSHALL: That would be correct.

35 COL GABBEDY: Now, I'd like to take you to a few parts of it as well, if I could. I might start with page 27. And at the very start of your evidence, the Air Vice-Marshal talked to you about putting warnings in the Standards Manual as a mitigation factor for the "unacceptable" or the "undesirable" feature. If you look at that page down the bottom, second paragraph from the bottom talks about "a Training Implementation Plan"?

LTCOL MARSHALL: Yes.

40 COL GABBEDY: Is that another risk mitigation factor that's used?

LTCOL MARSHALL: I couldn't answer that. But definitely there was a plan in place that was approved by the MRH Project Director for the HMSD.

45

COL GABBEDY: And if I could take you to page 19, please? At the very bottom of the page, the paragraph starts:

5 *It is noted that the principal capability requirement driving the version 5.10 modification –*

and goes on. Over the page it refers to a document which, if you take it from me, is a minute from COL Barton dated 29 May 2017, which is at AH07 in the statement of Andrea House.

10 Now, it's been a long period of time, would you like to have a look at that document?

15 LTCOL MARSHALL: Yes, please.

COL GABBEDY: My copy is marked.

MS McMURDO: What exhibit number is it, please?

20 COL GABBEDY: It's AH07 to Ms House's statement.

MS McMURDO: 07. We'll see if we can show you a copy. Yes. Is that a document that you would have been aware of at the time you were going through this process?

25 LTCOL MARSHALL: No.

COL GABBEDY: But it's a document, I assume you'd accept, that sets out the underlying purposes from the point of view of Army Aviation as to why the symbology upgrade was required?

30 LTCOL MARSHALL: Correct.

COL GABBEDY: One last area to explore with you, if I could? And I'll take you to page 25. You'll see on that page, and it starts at the very top of the page, that first half of the page refers to the series of different pieces of information, an "unacceptable" finding, an Operation Evaluation, a response from AATES, and then a decision brief from Aviation Branch. As far as you understand it, does that record all of the information that was taken into account in determining whether to approve service release for this upgrade?

40 LTCOL MARSHALL: I believe it would have, yes.

45 COL GABBEDY: Thank you, Colonel. I have nothing further.

MS McMURDO: Thank you. Any other applications for cross-examination? No. Any re-examination?

5 Yes, thank you very much. We really appreciate the assistance you've given to the Inquiry. Giving evidence can be challenging to an Inquiry of this type, so please don't hesitate to use the facilities that are available to support you if you need it.

10 LTCOL MARSHALL: Thank you.

MS McMURDO: Thank you very much. You're free to go.

15 <WITNESS WITHDREW

MAJ CHAPMAN: Chair, if I may, before I get to the evidence of the next witness, you recall yesterday COL Domigan gave some evidence and there
20 was a reference to an annexure to his statement which required – there was a red description over part of the Military salary section. Can I hand up a document which can be substituted for what's in the Exhibit 123. So it's Annexure A to Exhibit 123, now with the red box applied as intended.

25 MS McMURDO: Yes. All right, well, that page will be substituted in Exhibit 123 for the page it replaces.

MAJ CHAPMAN: Thank you, Chair. The next witness on the list is Andrea House. And can I just indicate, before I commence with Ms House,
30 the same applies with the witness to follow, Mr Dropmann. It's proposed by Counsel Assisting that their representative, Mr O'Mahoney of Counsel, will be identifying them and bringing them in. And what will then happen is I'll tender their statement without leading, in each case, the evidence in
35 it.

There'll be an opportunity for Counsel representing to cross-examine. I don't have an indication presently whether there will be cross-examination of either of those witnesses, but I thought I'd just foreshadow that now. So
40 the next witness to call is Andrea House.

MS McMURDO: Thank you.

<MS ANDREA HOUSE, Affirmed

<EXAMINATION-IN-CHIEF BY MR O'MAHONEY

5

MS McMURDO: Thank you, Mr O'Mahoney.

MR O'MAHONEY: Thank you.

10

Is your name Andrea House?

MS HOUSE: It is.

15

MR O'MAHONEY: And you're currently working at Airbus.

MS HOUSE: Yes, correct.

20

MR O'MAHONEY: You've been working for, I think, around 28 years as an engineer in the Aviation space?

MS HOUSE: Yes, that's correct.

25

MR O'MAHONEY: And you started working at Airbus in around 2010.

MS HOUSE: Correct.

30

MR O'MAHONEY: Your current role, just to be clear, is Chief of the Office of Airworthiness at Airbus?

MS HOUSE: Yes. So that's my Form 4 delegation from DASA, correct.

35

MR O'MAHONEY: And, Ms House, you've put on a statement in this Inquiry.

MS HOUSE: Correct.

MR O'MAHONEY: I'll just show you a copy of it.

40

MS HOUSE: Thank you.

MR O'MAHONEY: Do you recognise that as your statement?

45

MS HOUSE: Yes.

MR O'MAHONEY: It's dated 6 November 2024?

MS HOUSE: Yes.

5 MR O'MAHONEY: And Ms House is the content of that statement true and correct to the best of your knowledge?

MS HOUSE: Yes.

10 MR O'MAHONEY: Just one matter of clarification, if I may. At various points in the statement you refer to an entity called SUZ?

MS HOUSE: SUZ, yes.

15 MR O'MAHONEY: S-U-Z.

MS HOUSE: Yes, correct.

20 MR O'MAHONEY: Now, happy, I won't ask you to spell or pronounce what that is short for.

MS HOUSE: I can't anyway - - -

25 MR O'MAHONEY: But I did want to clarify one matter because a question was put to a witness earlier this week on the premise that SUZ was owned or invested in by Airbus. I'd just like you to clarify, if you could, as you see it, the position or what SUZ is?

30 MS HOUSE: SUZ is a cooperation between the German, I guess, Military. So the BUNDESWEHR, the German government. They're a system support centre or the software area where they will develop mission critical software systems. So the SUZ and Airbus Helicopters Germany, so AHD, as we call them, they work in cooperation with one another to develop mission-specific software systems for NH-90 and Tiger.

35 MR O'MAHONEY: And am I right in thinking that they are independent organisations, SUZ and Airbus?

40 MS HOUSE: They are independent organisations, but we work in collaboration with one another. So the SUZ rig, the NH-90 SUZ rig, is in Airbus Helicopters Germany at AHD at Donauwörth, so within the facility. So we do work hand in glove with each other, yes.

45 MR O'MAHONEY: Thank you for clarifying that. I believe some others might have some questions for you.

MS HOUSE: That's okay.

MS McMURDO: So the statement and 40 annexures will be Exhibit 129.

5

#EXHIBIT 129 - STATEMENT OF MS HOUSE AND ANNEXURES

10 MS McMURDO: Thank you. And so just following on from the question Mr O'Mahoney asked you, please, Ms House. So when SUZ develops software and then other entities buy that software and use it, do they get some commercial advantage, some royalties or something from that?

15 MS HOUSE: Yes, of course.

MS McMURDO: Yes.

20 MS HOUSE: So SUZ, in this case, if we're talking about HMSD version 5.10 software specifically, the German Military, the customer for the German armed forces, owned the IP rights and software. That software was developed specifically for them. And so to use that software from another nation, you'll have to pay the Germans, yes, royalties for using the licence. Correct.

25

MS McMURDO: Thank you.

MS HOUSE: No problem.

30 MS McMURDO: Yes. MAJ Chapman, did you have anything at this point?

MAJ CHAPMAN: I don't, no.

35 MS McMURDO: No. Any - - -

MAJ CHAPMAN: I did have - I'm sorry, Ms McMurdo. I did have one question.

40 Are you aware of, in the evolution of bringing version 5.10 onto the configuration of the aircraft, clearly during testing there was an issue found with some attitude ambiguity when looking off-axis? Are you aware of that?

45 MS HOUSE: Are we talking about during the Australian Operational

Evaluation testing?

MAJ CHAPMAN: Yes, during the Australian testing.

5 MS HOUSE: Yes.

MAJ CHAPMAN: And are you aware of requests from Army to explore whether a fix was available to them from SUZ or any other source to address that ambiguity prior to bringing it into service?

10

MS HOUSE: When you say “a fix”, do you mean a problem report or something like that?

MAJ CHAPMAN: Yes.

15

MS HOUSE: So you’re probably testing my memory about the problem report that was raised. There was a problem report raised but it wasn’t for that specific issue. The problem report that was raised, I believe, was due to the split horizon line.

20

So with the various modes that you could select on the HMSD I think there was, I guess, a better way to represent the split horizon line, so to speak. And I think the only problem report that I can recall was on the split horizon line.

25

MAJ CHAPMAN: So you weren’t aware of a problem report or a request to address that issue put in from Army to - - -

30

MS HOUSE: I’d have to look at what was in my annexes for the letters that were sent back and forth, but I don’t recall a specific request to fix that.

MAJ CHAPMAN: Thank you.

35

MS McMURDO: If there was one, would it be in the annexures to this - - -

MS HOUSE: It should be in those annexures.

40

MS McMURDO: It should be, thank you.

MS HOUSE: Yes.

MS McMURDO: Thank you. Any applications to cross-examine? Yes.

45

<CROSS-EXAMINATION BY LCDR GRACIE

5 LCDR GRACIE: Ms House, my name is LCDR Malcolm Gracie. I represent the interests of CAPT Danniell Lyon, who was one of the pilots in the fatal aircraft. When you were referring to SUZ, I was just going to ask you if you could just have a look at page 46 of the engineering report attached to your statement, AH04.

10 MS McMURDO: Sorry, what page was that, please?

LCDR GRACIE: 46, ma'am, of the report.

15 MS McMURDO: Page 46, thank you.

LCDR GRACIE: It's AH04 at para 2.3. And you've there explained – sorry, that report there explains that interrelationship with SUZ, AHD, and there's also reference to the French variants. Can I ask you what is meant by, “the French, German and Australian variants”? What are the variations that distinguish the three?

20 MS McMURDO: That might take a while.

LCDR GRACIE: In a very broad sense, other than the language, perhaps? I don't know. Are each of them specifically configured for a particular defence force?

MS HOUSE: Yes. Yes, so TFRA, the French variant, specifically configured for the French. They are all NH-90 TTH helicopters. So their base aircraft configuration, the base software, the base avionics systems, mission systems, structural parts, critical parts, et cetera, are all pretty much the same. And then they are specifically configured for the various nations, yes, whatever they would require. So TFRA being French, TGA being Germans, TAUA – T-A-U-A – being the Australians, correct.

35 LCDR GRACIE: So there can be nuances and differences?

MS HOUSE: Absolutely.

40 LCDR GRACIE: And could you now go across to – sorry to jump like this, but I'm trying to get through this - - -

MS HOUSE: That's okay. That's fine.

5 LCDR GRACIE: - - - so we can get out of here. Page 150, it's AH19. And I want to take you to section 4.16 of this Certification Program Plan. And you see that there's a reference in the note to NHI performing activities to support the certification of HMSD V5.10 for TAUA. That's the Australian variant.

MS HOUSE: Correct.

10 LCDR GRACIE: It should be noted that LufABw – that's the German - - -

MS HOUSE: National Military Reporting.

15 LCDR GRACIE: - - - National Military. Is it AF?

MS HOUSE: No, the National Military Authority.

LCDR GRACIE: Authority, thank you.

20 MS HOUSE: We call them an NMA.

LCDR GRACIE: Is not under contract to certify the introduction of the exchange for TAUA.

25 MS HOUSE: Correct.

30 LCDR GRACIE: So to the extent that the Australian regulatory system may seek to rely upon that German certification process, there was no formal contractual relationship in it doing so?

MS HOUSE: I don't think I understand your question about the contractual relationship.

35 LCDR GRACIE: As far as you know, there was no contractual relationship between LufABw, or ABV, and the Commonwealth of Australia in terms of the Commonwealth of Australia relying upon whatever certification process the Germans did.

40 MS HOUSE: Not for TAUA.

LCDR GRACIE: Being the Australian variant. When you say "TAUA", it's - - -

45 MS HOUSE: For the Australian variant.

LCDR GRACIE: Just dealing with the acronym, it's T-A-U-A.

5 MS HOUSE: Yes, that's correct. But the way that it is certified is reliant on the German certification of version 5.10 for the German variant with a Delta certification done by NHI and Airbus Helicopters Germany with the Delta configuration difference between the German variant, TGEA and the TAUA variant to the SUS-02 and SUS-03 software versions that are on TAUA, that's what NHI did. And that's explained in the Certification Program Plan.

10 LCDR GRACIE: Yes.

15 MS HOUSE: But the base HMSD 5.10 software is fully German certified, done for the Germans, by the Germans, certified by the German Military Airworthiness Authority. Correct.

LCDR GRACIE: But without a formal relationship between the Commonwealth of Australia and the Germans?

20 MS HOUSE: That's not correct. There is a formal relationship between the Commonwealth of Australia and the German National Military Airworthiness Authority.

25 LCDR GRACIE: But not in terms of the specific certification?

MS HOUSE: That's not correct. So for all certifications there is recognition between DASA, as the Defence Airworthiness Authority in Australia, and the German Military Airworthiness Authority. There is a recognition that DASA provides to the German Military Airworthiness Authority. So there are things that are certified, including most of the aircraft – or some of the aircraft that certified from AHD to the Germans. So DASA does recognise the German Airworthiness Authority.

30 LCDR GRACIE: Maybe I put it badly. That's in a very broad umbrella sense. It's not specific to HMSD V5.10 though, is it?

35 MS HOUSE: Yes, it is.

40 LCDR GRACIE: In the sense that it wouldn't refer to that. It would just be caught by the umbrella arrangement, wouldn't it?

45 MS HOUSE: But the umbrella arrangement is the DASA will recognise the technologies within, I guess, say Airbus Helicopters Germany, AHD, the technologies for this aircraft that the German Airworthiness Authority could certify.

LCDR GRACIE: Yes.

MS HOUSE: So, yes, HMSD would be covered.

5

LCDR GRACIE: Would come within it?

MS HOUSE: Yes.

10 LCDR GRACIE: But not being specifically referenced as such?

MS HOUSE: Not specifically referenced on the Recognition Certificate, no.

15 LCDR GRACIE: And just coming across to 4.32 at page 151, still on AH19, am I reading this correctly, saying that:

20 *The testing by NHI in Europe has been completed. Testing was conducted early due to the following reasons to meet Plan Palisade. And the MRH Software Support Centre –*

that's, I take it, in Australia?

MS HOUSE: Yes.

25

LCDR GRACIE:

– cannot support the software version 5.10 in its current configuration.

30

And so that hardware upgrade had to be done in Europe?

MS HOUSE: Yes. The hardware upgrade was already done in Europe. So it was chosen to do the testing for the 5.10 in Europe, correct.

35

LCDR GRACIE: And was it because of that time constraint that 4.3.3 says:

40 *In addition to the testing above, the Commonwealth has expressed the wish to perform an Op Evaluation which may be conducted prior to service release.*

Was that part of the reason because there was this compressed timing in the testing in Europe?

45

MS HOUSE: That's not why that statement is made. No, not because of the compressed timing.

LCDR GRACIE: So we've got:

5

Testing was conducted early - - -

MS HOUSE: Yes.

10 LCDR GRACIE:

- - due to the time constraints.

And then it says:

15

In addition to the early testing - - -

MS HOUSE: "In addition to the testing".

20 LCDR GRACIE:

- - - there may be - - -

MS HOUSE: "Operational Evaluation that would" - - -

25

LCDR GRACIE: "Prior to service release".

MS HOUSE: Correct.

30 LCDR GRACIE: And could I ask you to please have a look at, I think it's
- I'll check, but I think it's AH28. No, it's not. Sorry, 26. I just want to
ask you about this document. And I appreciate these aren't your
documents, so if you need the time to familiarise yourself with it, please do
so. This is a letter written on behalf of Commonwealth of Australia by
35 COL Thomas to Airbus.

MS HOUSE: Mm.

40 LCDR GRACIE: And for the purposes of conducting the OPEVAL that
we've just talked about, you'll see at para 4 there's a requirement for the
Commonwealth to conduct further assessment, described as "a
requirement".

45 *Currently operational test evaluation is planned to commence
23 September '19 through to 30 June '20.*

And it says:

5 *To assist with that operational test and evaluation, could Airbus provide the following documents.*

10 They're there listed. And I think the other day, ma'am, I referred to the items in para 4; they're the items in para 5. You don't have to worry about that. I got it wrong the other day, that's all.

15 So, Ms House, in para 5 there's the request for the listed documents in subparagraphs (a) through to (d). And then a separate matter is subparagraph (e), just over the page. For the purpose of further assessment, there's a request from the French and German NH-90 test authorities for copies of the flight test reports for the 4.07 and V5.10.

20 When I go to the next document, which is in response to this at AH27, page 239, it doesn't appear – certain documents are identified in para 5(d), 3, 5, 6, 7, but there's nothing referencing the flight or test reports requested in respect of the French and German test authorities. Were they not provided?

MS HOUSE: They couldn't be, I don't believe.

25 LCDR GRACIE: They couldn't be?

MS HOUSE: They couldn't be, I don't believe. No.

30 LCDR GRACIE: And what's the prohibition on releasing that?

MS HOUSE: They would be NATO-Restricted documents to be released by those authorities.

35 LCDR GRACIE: So in your - - -

MS HOUSE: I don't have the full picture of that one. But they are NATO-Restricted documents.

40 LCDR GRACIE: But in your review of the documentation to compile this for this hearing, you didn't see anything that - - -

MS HOUSE: I didn't.

45 LCDR GRACIE: - - - met that description being provided to the Commonwealth.

MS HOUSE: Correct. Correct.

5 LCDR GRACIE: And you assume it's for the reasons you've - - -

MS HOUSE: That's what I assume, yes.

LCDR GRACIE: Thank you. Thanks very much.

10 MS HOUSE: No problem.

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

15 MS McMURDO: Thank you. Yes, LCDR Tyson.

<CROSS-EXAMINATION BY LCDR TYSON

20 LCDR TYSON: I'll just be brief, ma'am. My name is LCDR Matthew
Tyson. I represent the interests of CPL Alex Naggs. Just a couple of quick
questions for you, please. So in relation to the Human-Machine Interface
issue between – so with version 5.10 and how that interacts with actual
25 flight testing – for example, taking a Taipan through turns – do you know
which organisation in Europe did the testing on that? Was it, for example,
NHI or LufABw? Do you know what entity did the Human-Machine
Interface testing?

30 MS HOUSE: WTD61 – don't ask me to pronounce the German name, but
the WTD61 is the German test agency. They're similar to AATES.

LCDR TYSON: And do you know when that was done, or if it was done,
or - - -

35 MS HOUSE: Yes. So I think it's reference – it will be referenced in the
documents somewhere.

LCDR TYSON: All right, thank you. I probably missed it.

40 MS HOUSE: I believe it's also stated in my statement. I'll just have a
read of - - -

LCDR TYSON: Sure.

45 MS HOUSE: 26(a) of my statement.

LCDR TYSON: Was that para 26?

5 MS HOUSE: Yes, paragraph 26(a).

LCDR TYSON: Yes. But does that extend to the Human-Machine Interface issue?

10 MS HOUSE: Yes. Issue – it is.

LCDR TYSON: It is, thank you.

MS HOUSE: No, I won't call it an issue. It extends to the Human-Machine Interface testing required for the HMSD upgrade.

15 LCDR TYSON: Thank you.

MS HOUSE: No problem.

20 LCDR TYSON: And just one other thing finally, please. Can you go, please, to paragraph 39 in your witness statement, which is Exhibit 129.

MS HOUSE: Yes.

25 LCDR TYSON: Can you see there you say – sorry, you're quoting from the slide, and it says:

30 *There is a probability that the version 5.10 software will operate differently with SUS-02/03 compared to the operator's expectations, noting the changes to the version 5.10 software is out of scope for this project as per the offer. Commonwealth of Australia to accept risk.*

Can you just explain what you understand that means?

35 MS HOUSE: So I'll just go to the appendix.

LCDR TYSON: Yes, certainly.

40 MS HOUSE: So the appendix is talking about the Configuration Control Board Minutes where the change was presented - - -

MS McMURDO: So which appendix number please? Just so - - -

45 MS HOUSE: I'm sorry. AH18.

MS McMURDO: 18, thank you.

5 MS HOUSE: So it's for the development approval to start the HMSD software upgrade. Sorry, I think it's the wrong one. What paragraph was that again? I apologise.

LCDR TYSON: It was paragraph 39 which refers to slide 104.

10 MS HOUSE: 39. 104, sorry. So that was to do with, yes, the risk that was presented during the development approval presentation at the Configuration Control Board to get development approval for the HMSD V5.10 upgrade. That was the first risk that was identified for the Commonwealth at the time – to the Board, sorry, at the time, that that
15 probability did exist that the software would operate different to what expectations might be. As in the symbology was different, so it may operate differently to what was expected.

20 LCDR TYSON: But it actually says there it's a probability. So it's not a theoretical risk or a possibility; it actually says it's a probability.

MS HOUSE: It's not a possibility. It's not a certainty, it's a probability.

25 LCDR TYSON: And SUS-02/03, are they the particular configurations of Taipan airframes or - - -

30 MS HOUSE: They're the software configurations that are on the aircraft. So SUS-02 – sustainment build 02 and sustainment build 03. There was a transition – not a transition. There was an upgrade happening to sustainment build 03 at the time that HMSD 5.10 was coming out. So SUS-03 was in development/certification qualification status. So SUS-02 was the testing that would be performed for HMSD V5.10 on the aircraft for SUS-02. And SUS-03 would have to come once SUS-03 was done.

35 LCDR TYSON: And do you know why, with the Australian Taipans, we jumped from version 4.0 through to 5.10, whereas I think other operators, like France, went from – there was a 4.7 – there were other versions?

40 MS HOUSE: Yes.

LCDR TYSON: But Australia, we jumped straight to 5.10. And the only other country that had 5.10, I think, was Germany at the time. Do you know why it was we went straight from 4.0 to 5.10?

5 MS HOUSE: Yes. So 4.07 has been mentioned a few times. 4.07 was a prototype build for the Germans to start operating within, I guess, the Afghanistan environment during the degraded visual environment that they were operating in. So 4.07 was that prototype build. It was never formally qualified and certified. It was just for the Germans to get used to operate, see how it worked.

10 5.0 came along because the French did want a change to their symbology, so the French initiated the 5.0 upgrade for HMSD. The Germans didn't really like that exactly, the way it was, so asked for another, I guess, step change of HMSD to 5.10. So that was the 5.10. That included the distance to run feature and that's what the Australians – my understanding is Australia, at the time, saw the 5.10 with the distance to run and that that was what was requested and wanted.

15 LCDR TYSON: So is it your understanding that the 5.0 version – if I can call it the French version – it didn't have the distance to go feature?

20 MS HOUSE: That's my understanding. That's my understanding.

LCDR TYSON: Right, thank you. They're my questions, ma'am, sir.

MS McMURDO: Thank you. Yes, any other applications?

25 MR O'MAHONEY: Just one matter to ask.

<RE-EXAMINATION BY MR O'MAHONEY

30 MR O'MAHONEY: Thank you, Madam Chair.

35 Just very briefly, Ms House, you've been asked a number of questions today, and indeed in the context of your written statement, about an "ambiguity" or an error in the HMSD version 5.10 upgrade. Do you recall that?

MS HOUSE: I think someone mentioned it as an issue.

40 MR O'MAHONEY: And you know, don't you – tell me if you agree with this: that that relates to the off-axis pitch display. Correct?

45 MS HOUSE: I think so. It's hard to say that it's the off-axis pitch display, to understand exactly what that issue really pertains to. If I look at the AATES report, I understand it. But to hear a description of the report, it's

very difficult to understand. It's the off-axis representation of the outer world horizon line and the pitch scale.

MR O'MAHONEY: Thank you for - - -

5

MS HOUSE: So that's my understanding.

MR O'MAHONEY: Thank you for breaking that down. And where I'm leading is, are you able to assist the Inquiry in understanding whether that is, in fact, an error or ambiguity, or whether it's actually a design feature?

10

MS HOUSE: Again, I wouldn't use the term "feature". It's the required functionality of the HMSD 5.10 software. So every software has a spec, a specification, that it's designed to. In this case, the same thing exists. Unfortunately, I couldn't provide that with my statement because, again, it's NATO restricted.

15

But that specification for the software has specific lines in it to say exactly how the horizon line is to be displayed, and also how the pitch scale is to be displayed. And how it is displayed, how it operates, is exactly how the specification was written. Hence why it was qualified with no issues.

20

MR O'MAHONEY: And do you know – you may or you may not – but do you know what the design specification was designed to achieve?

25

MS HOUSE: My understanding is it's designed to achieve for the Germans, allow them to operate in a degraded visual environment to their fullest extent. So to allow them to know when – I'm not a pilot, so please, I apologise – to allow them to know when they look out the window as they're – particularly when they're landing in a DVE, degraded visual environment, sorry, the pitch of the aircraft – whether they're nose up or they're nose down – so that they can safely land.

30

MR O'MAHONEY: Thank you. I don't have any further questions.

35

AVM HARLAND: If I can just follow from that. Is it possible to have a design specification which still results in the display of attitude which could be characterised as "ambiguous" or "incorrect"?

MS HOUSE: I don't know if I can answer that question.

40

AVM HARLAND: So a specification is not always 100 per cent correct, or is it possible the specification could not be correct?

MS HOUSE: Well, the specification is agreed as per what's required by the operator. So the operator has decided that that's exactly what they want and that's what they got in this case. So the German Military asked for that and that is what was designed, qualified and certified.

5

AVM HARLAND: Yes, perhaps I'll rephrase that. The specification is somewhat irrelevant if the result is a display which is incorrect.

MS HOUSE: In this case, the display was not incorrect, it was to the specification.

10

AVM HARLAND: The "outside world" is the reference which the attitude would normally represent – the attitude display would normally represent.

15

MS HOUSE: Yes. So the - - -

AVM HARLAND: If we were to call the outside world correct.

MS HOUSE: Yes.

20

AVM HARLAND: And the attitude display was not conformal or did not represent that outside world, the specification could be correct, but the display does not represent the outside world.

25

MS HOUSE: The display, in this case, represented the outside world. The horizon line represented the outer world horizon no matter where you looked.

MS HOUSE: The horizon line, yes, that's our understanding from the AATES report. But not the pitch and roll displays on the pitch ladder.

30

MS HOUSE: There's no roll display. It's a pitch scale. There is no roll display. The roll indicator for HMSD 5.10 was removed. So the pitch scale was aligned fully to the X axis. And the outer world horizon is a representation of the true outer world horizon, no matter how you look. That's - - -

35

AVM HARLAND: That's certainly not my understanding of how it's been characterised.

40

MS HOUSE: That's - - -

AVM HARLAND: Because if that was the case, there wouldn't be an issue which would have been characterised as "unacceptable".

45

MS HOUSE: I can't answer. But that is the specification. That is what the HMSD does.

5 AVM HARLAND: Thank you.

MS McMURDO: Perhaps if you just refer, please, back to the AATES report, because you were content with the way they described it. Have you got the AATES report in amongst your material there?

10

MS HOUSE: I don't think I've provided the AATES report.

MS McMURDO: Could we show the witness Exhibit 122, please? 122.

15 MR O'MAHONEY: I believe it's AH25, if that assists.

MS McMURDO: That's 120 then, okay.

MS HOUSE: Okay, thank you.

20

MS McMURDO: So I've got 122.

MR O'MAHONEY: Not at all. We've found it. It's AH25. Thank you.

25 MS McMURDO: I thought it was there.

MS HOUSE: Sorry. I'm sorry.

MS McMURDO: Yes, thank you.

30

MR O'MAHONEY: Yes, you're absolutely right.

MS HOUSE: I apologise.

35 MS McMURDO: No, no that's okay. It's okay. It's getting late on Friday afternoon. I think we're all tired. So if we just go to the Executive Summary to see how it's stated there, which is - - -

40 MS MUSGROVE: I'm sorry, Ms McMurdo, my understanding is that what's represented at AH25 is not reflective exactly in terms of redactions - - -

MS McMURDO: Yes, I think Exhibit 122 was the redacted version.

45 MS MUSGROVE: 120 is my understanding.

MS McMURDO: 120 is the redacted version.

5 MS MUSGROVE: Yes. So perhaps if reference could be made to Exhibit 120 rather than AH25.

MS McMURDO: For NATO reasons, parts have been redacted. So we have to use, in a public forum, the redacted version.

10 MS HOUSE: Understood.

MS McMURDO: Mr O'Mahoney, you've got a copy, have you, that you're offering?

15 MR O'MAHONEY: I do. I'm grateful to my friend for giving me that. It's hard to keep up with the redactions, but we're doing our best.

MS McMURDO: So if you go to the Executive Summary? Have you got that – IV? So I know you said earlier you understood and agreed with the description in the AATES report.

MS HOUSE: I don't think I said I agreed. I said I - - -

MS McMURDO: No, you may not have said you agreed, I'm sorry.

MS HOUSE: I said I understood what they were, I guess, trying to talk about.

MS McMURDO: Yes. So about the third paragraph down:

30 *During testing ambiguous aircraft attitude in the HMSD, there was an unacceptable risk of flight safety. The symbology depicted angle of bank and this information changed as the pilot turned their head to either side of the aircraft, whilst the actual aircraft maintained a constant angle of bank. This created scenarios where the perceived angle of bank was inconsistent with the attitude of the aircraft and was assessed as leading to a risk of controlled flight into terrain.*

40 So another way of what the Air Vice-Marshal was asking is, although for one user who has specified that a software be created to do certain things, to another user that same software might be an issue. They're looking at it from a different perspective.

45 MS HOUSE: Okay.

MS McMURDO: You'd agree with that?

MS HOUSE: Possibly, yes.

5

MS McMURDO: Okay, thank you.

MR O'MAHONEY: Thank you. No further questions.

10 LCDR GRACIE: I was just being followed. I've got one item, ma'am.

MS McMURDO: Yes, all right.

15 **<FURTHER CROSS-EXAMINATION BY LCDR GRACIE**

LCDR GRACIE: I hope it will assist. Ms House, can I just ask whether
20 or not, in reference to the matters that the Chair just took you to about the
AATES report, did that feature exist on the 4.7 or the 5.0?

MS HOUSE: 4.07? Yes, I - - -

LCDR GRACIE: 4.07, yes.

25

MS HOUSE: I can't answer for whether or not it exists on 5.0.

LCDR GRACIE: Or the 5.0?

30 MS HOUSE: I don't know.

LCDR GRACIE: But we do know the 5.10?

MS HOUSE: Correct.

35

LCDR GRACIE: Thank you.

MS McMURDO: I'm sorry, did you say it did exist in 4.7?

40 MS HOUSE: 4.07, yes.

MS McMURDO: Which was the earlier version the Germans had had?

MS HOUSE: Correct.

45

MS McMURDO: Had the same feature in it?

MS HOUSE: That's my understanding, yes. Correct.

5 AVM HARLAND: But not in version 4.0, which was the original one we had in the ADF helicopters.

MS HOUSE: Correct.

10 MS McMURDO: And not in version 5.0, which the French had?

MS HOUSE: I can't answer - - -

MS McMURDO: You're not sure about that one?

15

MS HOUSE: I'm not sure about that one.

MS McMURDO: Mr O'Mahoney, you had nothing further? No. Any re-examination?

20

MR O'MAHONEY: No.

MS McMURDO: Thank you very much, Ms House, for your assistance; we greatly appreciate it.

25

MS HOUSE: No problem.

MS McMURDO: And I'm sorry you've had to wait so long to give your evidence.

30

MS HOUSE: That's quite all right. Thank you.

MS McMURDO: Thank you.

35

<WITNESS WITHDREW

MS McMURDO: Yes, MAJ Chapman.

40

MR O'MAHONEY: Thank you, Chair. The next witness is Andrew Dropmann, so I call Andrew Dropmann.

45 MR O'MAHONEY: Just while that's happening, Madam Chair, I thought I'd indicate – you might recall during Ms House's evidence, I think in

response to a question from Air Vice-Marshal, there was an indication that if a particular document existed, it would be in the annexure materials, but she couldn't turn it up.

5 MS McMURDO: Yes.

MR O'MAHONEY: I just thought I'd indicate, as a courtesy, that we will work with her to identifying if it exists.

10 MS McMURDO: Thank you.

MR O'MAHONEY: And let the Inquiry know.

15 MS McMURDO: Well, if it is something that's already before us, you'll let me know.

MR O'MAHONEY: Certainly. Either way, we'll try to assist in any way.

20 MS McMURDO: Thank you. That would be very helpful. Thank you very much, Mr O'Mahoney.

MR O'MAHONEY: It's a pleasure.

25 <MR ANDREW GRANT DROPMANN, Sworn

<EXAMINATION-IN-CHIEF BY MR O'MAHONEY

30 MS McMURDO: Yes, Mr O'Mahoney.

35 MR O'MAHONEY: Thank you. Is your full name Andrew Grant Dropmann? I think you might need to lift your voice and turn the microphone - - -

MR DROPMANN: Yes.

40 MR O'MAHONEY: No, I think it's off.

MR DROPMANN: Yes.

45 MR O'MAHONEY: Thank you. And, sir, you are an Aeronautical Engineer by trade.

MR DROPMANN: And profession, yes.

MR O'MAHONEY: And in that profession you've been working for over 25 years.

5

MR DROPMANN: Correct.

MR O'MAHONEY: And you started working at an entity that ultimately became part of Airbus in around 2008.

10

MR DROPMANN: Correct.

MR O'MAHONEY: Before that time, you had worked at various entities, including Honeywell Australia and Raytheon Australia; is that right?

15

MR DROPMANN: Yes.

MR O'MAHONEY: During your time at Airbus, tell me if this is right, that you worked as Rotary Wing Head of Airworthiness from October 2016 to January 2019?

20

MR DROPMANN: Correct.

MR O'MAHONEY: You then moved to another role called Manager Airworthiness that you occupied until August 2021.

25

MR DROPMANN: Correct.

MR O'MAHONEY: And tell me if you agree with this: that was an expansion on that earlier role, in that your responsibilities from that point on comprised not just rotary-wing aircraft but fixed-wing aircraft as well?

30

MR DROPMANN: Yes.

MR O'MAHONEY: You're currently not working for Airbus.

35

MR DROPMANN: No.

MR O'MAHONEY: You're currently working for another manufacturer.

40

MR DROPMANN: Correct.

MR O'MAHONEY: You've put on a statement to assist this Inquiry.

45

MR DROPMANN: Yes.

MR O'MAHONEY: That statement is dated 19 February 2025.

MR DROPMANN: Correct.

5

MR O'MAHONEY: I'll put a copy in front of you.

MR DROPMANN: Thank you.

10 MR O'MAHONEY: Do you recognise that statement?

MR DROPMANN: Yes, I do.

15 MR O'MAHONEY: And is the content of that statement true and correct, to the best of your knowledge?

MR DROPMANN: Yes, it is.

20 MR O'MAHONEY: There's one matter, if I may, that I want to seek your assistance to clarify and that is at page 5 of this statement. If you could turn that up for me, please, sir? You'll see at the head of this page you were asked a number of questions about the HMSD V5.10 upgrade. Do you see that?

25 MR DROPMANN: Yes.

MR O'MAHONEY: And you start answering at 2.5 that:

30 *DASA issues organisational scope and authority to a regulated Military Design Organisation.*

Do you see that?

MR DROPMANN: Yes.

35

MR O'MAHONEY: You indicate that Airbus Australia Pacific did not have organisational authority to approve major changes to type design. Do you see that?

40 MR DROPMANN: Yes.

MR O'MAHONEY: And then you go on, at the end of the paragraph, to address how those major changes to type design came about. Do you see that?

45

MR DROPMANN: Yes.

5 MR O'MAHONEY: I just wanted to ask, to assist in understanding the context, across your roles as Head of Airworthiness or Manager, Airworthiness, can you paint the picture of how frequently or not major changes of this kind came across your desk?

10 MR DROPMANN: Yes. So I don't know specific numbers, but in the order of across Rotary Wing, there would be in the order of 10 or 20 per year of this type of change, or changes classified as major.

MR O'MAHONEY: Thank you. I don't have any further questions, but I think others might have.

15 MR DROPMANN: Thank you.

MS McMURDO: Yes, thank you, Mr O'Mahoney. Applications to cross-examine? Any applications to cross-examine? Anything from you – yes, MAJ Chapman.

20 MAJ CHAPMAN: If I could just get you to tender the document?

MS McMURDO: Of course. Exhibit 130 and the eight annexures.

25 **#EXHIBIT 130 - STATEMENT OF MR DROPMANN**

30 MR O'MAHONEY: And nothing arising.

MS McMURDO: And nothing arising from this witness. Well, you're free to go. No questions.

35 MR DROPMANN: That's it?

MS McMURDO: That's it as it's turned out. I think everyone has run out of puff on a Friday afternoon. So maybe if you wait around long enough, it pays off.

40 MR DROPMANN: Thank you very much.

MS McMURDO: Thanks very much, Mr Dropmann, you're free to go.

<WITNESS WITHDREW

5 MAJ CHAPMAN: That's the conclusion of the witnesses for this week,
Chair.

MS McMURDO: Thank you, everybody. So 10 o'clock on Monday
morning. All right then, we'll adjourn until 10 o'clock Monday morning.

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**PUBLIC INQUIRY ADJOURNED UNTIL
MONDAY, 3 MARCH 2025 AT 1000**