IN THE WEST SUSSEX CORONERS COURT

INQUESTS INTO THE DEATHS OF ELEVEN MEN IN THE SHOREHAM AIRSHOW CRASH IN 2015

RULING ON HIGH COURT PART 8 APPLICATION FOR PROTECTED MATERIAL FROM THE CRIMINAL TRIAL

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1. I am grateful to all Interested Persons for the submissions they provided at the end of January related to the impact of the case of Maughan and CAP 1963 and the way forward, procedurally, in these inquests. I have also received a number of other submissions from interested persons in the course of preparation for these inquests related to the impact of the decision in *Norfolk* upon the extent of my investigation. I have taken account of all of those submissions even though I shall not repeat all of their contents here.

2. The decision that I have arrived at is that I shall now be making an application to the High Court to ask for permission to obtain selected material from the criminal trial of Mr Hill, specifically (i) the split screen go-pro footage produced by Sussex Police, (ii) the expert reports produced by the prosecution and defence at the criminal trial that refer to that footage and (iii) for permission to consider the transcripts of the evidence given in public during the prosecution of Mr Hill.

3. My reasoning for making the application is also set out in additional detail in the court application documents, which I have shared with all Interested Persons in draft form alongside this ruling.

4. First, I must stress that I agree with the point made by the Sussex Police, the AAIB and the CAA that, an inquest is a fact-finding inquiry first and foremost and the evidence collected should not be driven by the possible conclusions. Rather, it is for me as the Coroner to set the scope of the inquest, with reference to my duties under s.5 of the Coroners and Justice Act 2009, to then gather the evidence to explore the facts relevant to the scope as so defined. It is only <u>after</u> hearing that evidence that I can come to a view as to what potential conclusions are open to me.

5. Nevertheless, the reality is that the effect of the decision of the Supreme Court in *Maughan* is that whilst, following Mr Hill's acquittal, a conclusion unlawful killing had not until November 13 2020 even theoretically been open to be returned in these inquests. It is now a conclusion that could be lawfully returned <u>if</u> the evidence should justify such a finding applying a civil standard of proof. Were this to arise, Mr Hill is at risk of a serious finding with potential personal, reputational and professional consequences. However, it remains

the scope of these inquests, and not the potential conclusions, that must both drive and limit my investigation.

6. Turning then to the scope of the inquests, as has already been determined following consultation with all Interested Persons the proper scope includes determination of the following factual matters:

    1. The cause of death of each deceased;
    2. The organisation and preparation for the Shoreham Airshow and the aerobatic display;
    3. The mechanical safety of the Hawker Hunter jet aircraft ('the Hunter') including any defects in the aircraft or its components;
    4. The training and competency of the pilot to fly the Hunter including previous assessments and previous practice of the manoeuvre conducted at Shoreham in 2015;
    5. The actions of the pilot before the event including at Southport, Duxford and Shoreham in 2014;
    6. The events that led up to the Hunter crashing at the 2015 Shoreham Airshow including the actions of the pilot during the flight;
    7. The cause of the Hunter crashing including:

        (i) the extent to which, if any, the pilot's conscious and deliberate conduct caused or contributed to the crash;

        (ii) the extent to which, if any, the pilot suffered a cognitive impairment which affected his flying abilities;

        (iii) the extent to which any cognitive impairment found to have arisen caused or contributed to the crash.

7. I must also bear in mind that, as the AAIB have emphasised since their initial submission on this issue in June 2019, in R (Secretary of State) v Senior Coroner for Norfolk [2016] EWHC 2279 (Admin) (here) Lord Thomas (LCJ) was clear as to the limited circumstances in which it would be appropriate for an inquest to cover the same ground as that already covered by the AAIB investigation. The test, set out by Lord Thomas, is that:

    > "In the absence of credible evidence that the investigation into an accident is incomplete, flawed or deficient, a Coroner conducting an inquest into a death which occurred in an aircraft accident, should not consider it necessary to investigate again the matters covered or to be covered by the independent investigation of the AAIB." [§56]

8. I do not understand any Interested Person to have disagreed with my decision that the matters I have just listed are all within the proper scope of these inquests. However, the question in the light of the above paragraph from *Norfolk* is not what is within these inquests' scope, but to what extent need my investigation re-investigate each of the matters at 1-7 above and to what extent should (or must) I rely upon the AAIB investigation as having already sufficiently investigated them.

9. No Interested Person has dissented from the proposition that an AAIB report is admissible in inquest proceedings and I do intend to admit two relevant published AAIB documents (the AAIB report AAR 1/2017 and the AAIB supplement published following a review of additional information in 2019).

10. I have considered the point raised by both Canfield Hunter Limited and the families represented by Stewarts and Nexa as to whether the relevant part of the decision in *Norfolk* that I cite above is binding *ratio* or mere *obiter*. In my view it is not necessary to formally determine that matter as I agree with the proposition of the AAIB that, even if *obiter*, it is at very least very strong guidance with the clearest possible statement of principle by an august Divisional Court featuring the Lord Chief Justice. The passages would in any event be of the most persuasive authority, and there would need to be compelling reasons for a coroner to depart from them. I can see no good reason to do so.

11. As the Lord Chief Justice stated, there can be little doubt that the AAIB as an independent state entity has the greater expertise in determining the cause of an aircraft crash. In the absence of evidence that the investigation into an accident is incomplete, flawed or deficient a coroner should not consider it necessary to re-investigate matters covered by the AAIB. I have chosen to follow that guidance.

12. I am aware from his submissions that Mr Hill does not accept some of the AAIB conclusions. But the issue for me is not whether the conclusions of the investigation are accepted by Interested Persons, but whether in so far as a conclusion is relevant to matters that I have determined are in these inquests' scope, the completed investigation was deficient, flawed or incomplete. This requires more than that the matter is controversial or disputed by some person.

13. I do not understand any Interested Person to be questioning the AAIB's conclusions regarding the proximate cause of the crash or the key findings of the AAIB that:

    a. The pilot had recent experience of flying the aircraft and was appropriately licensed.
    b. No pre-existing mechanical defects in the aircraft were found.
    c. The aircraft was carrying out a manoeuvre involving both a pitching and rolling component, which commenced from a height lower than the pilot's authorised minimum for aerobatics, at an airspeed below his stated minimum, and proceeded with less than maximum thrust;
    d. This resulted in the aircraft achieving a height at the top of the manoeuvre less than the minimum required to complete it safely, at a speed that was slower than normal;
    e. Although it was possible to abort the manoeuvre safely at this point, it appeared the pilot did not recognise that the aircraft was too low to complete the downward half of the manoeuvre and so did not perceive an escape manoeuvre

was necessary or did not realise one was possible at the speed achieved at the apex;[1]

f. The manoeuvre was continued, the aircraft struck the ground and broke into four main sections. Fuel and fuel vapour released from the fuel tanks ignited. In its path were vehicles near the A27 junction and pedestrians standing by the junction.

14. In respect of matters in scope at points 3-6 of the inquests' scope I have seen no evidence to persuade me that, in so far as these matters fell within the AAIB's investigatory remit, the AAIB investigation was deficient, flawed or incomplete[2] in any way that now requires me to re-investigate the matter and seek access to protected material to do so.

15. Stewarts on behalf of some of the families have put forward some areas in which they assert the AAIB investigation was defective:[3]

a. They suggest that the AAIB has not explored why the aircraft was displaying full tanks of fuel and whether Mr Hill checked the jet pipe temperature before take-off. But as Mr Firth's statement of 27 August 2020 explains, the AAIB investigation estimated that, with the required fuel on board, the aircraft was carrying approximately 20 minutes of contingency fuel when all its tanks were full on departure from North Weald. This is not an excessive amount of contingency fuel, and the aircraft was considerably below its maximum permitted weight at the start of the display. Given this, I am not persuaded that the AAIB report was defective in this respect. Further whether the jet pipe temperature was checked has no clear relevance to the identified cause of the crash. I cannot see that these issues require any investigation by me.

b. They question whether the AAIB adequately investigated the weight of the paint on the aircraft. But I do not understand there to be any evidence that the paint used had affected the way the aircraft was flown. At page 34 of their report the AAIB make it clear that the inspectors considered the mass of the aircraft, its fuel and the pilot's weight as a feature of their investigation and concluded it was being operated within the specified limitations. I have seen no credible evidence that the investigation was defective in this respect.

c. It is suggested that it not clear the AAIB have "sufficiently examined" the implications of Mr Hill's actions at the point he reaches the apex of the manoeuvre and the implications of deployment of the flap. They suggest the footage in 2015 shows a different action from the same flight in 2014 in respect of the flaps. Submissions of Nexa (from 25 February 2020) also raise the issue of

[1] Although I do note the parents of Mr Grimstone have put forward an additional interpretation: that Mr Hill recognised he was too low but anyway chose to continue the manoeuvre.

[2] I will use the word 'defective' as shorthand for these three terms.

[3] In submissions on 29 January and 25 February 2020.

flap setting. But I have noted that the AAIB report does focus on flap deployment (see page 52: *"Flap settings were similar, if not the same, during the accident manoeuvre and during the comparison manoeuvres at Shoreham and Duxford in 2014.")* I also note that the issue is comprehensively addressed in the statement of Mr Firth.[4] As can be seen in figures published in the AAIB main report and the supplement, there is only limited view of the controls on the cockpit image recordings which do not show the flap selection controls, Mr Hill's left arm or a flap indication. The AAIB concluded that the material available to them cannot establish that there was a change of flap setting at the apex of the loop. Given the detailed AAIB analysis as cited by Mr Firth I am not at present persuaded that the AAIB investigation is defective in this narrow respect.

16. In summary, in respect of points 3-6 of scope I note and intend to act in accordance with what Lord Thomas said at paragraph 56 of *Norfolk*: "It should not, in such circumstances, be necessary for a coroner to investigate the matter *de novo*. The coroner would comply sufficiently with the duties of the coroner by treating the findings and conclusions of the report of the independent body as the evidence as to the cause of the accident."

17. There are some matters that fall under points 1 and 2 of scope that I do consider that I should further investigate. Under 1 these are largely matters that were not investigated at all by the AAIB (such as the identity and medical cause of death of each deceased) because they fell outside their statutory role of conducting a safety investigation. Under 2 although very many aspects of the organisation, preparation and safety of the airshow were already considered by the AAIB (as helpfully set out in para 35 of the AAIB submissions of June 2019) some limited aspects have not been investigated, such as the involvement and role of the highways authority in safety planning. My investigating those additional aspects within point 2 of scope would not duplicate any part of the AAIB's safety investigation. More importantly in respect of any High Court application, any new or additional investigation I might conduct under point 2 of scope would not require access to protected material.

18. Regarding point 7 of scope: the AAIB concluded that:

    a. The Gz experienced by the pilot during the manoeuvre was probably not a factor in the crash;
    b. The analysis of human performance factors identified several credible explanations for the manner in which the aircraft was flown, including: not reading the altimeter due to workload, distraction or visual limitations such as contrast or glare; misreading the altimeter due to its presentation of height information; or incorrectly recalling the minimum height required at the apex.

19. But what remains of key importance in respect of point 7 of these inquests' scope is that there has, as yet, been no determination by any investigation as to what did, on the balance of probabilities, lead to the plane being flown as it was. The AAIB report states

[4] Paras 124 to 142

that "it was not possible to draw firm conclusions about what influenced the pilot's performance on the day".

20. Mr Hill's defence at the criminal trial was based upon some form of cognitive impairment having mediated his actions. But his acquittal by a jury in the criminal trial did not depend on the proof of an affirmative proposition to any standard. The AAIB Report reached no conclusion as to what probably occurred. As the AAIB later summarised the position "the AAIB investigation considered possible reasons why the pilot entered and continued the accident manoeuvre, but could not determine which of these was the case". I note the report does conclude that other explanations are "considered more likely" than cognitive impairment occurring. Although the AAIB investigation found no evidence for cognitive impairment but did not rule it out."[5] The AAIB's report points out, and I accept, that it is not exceptional for flying display accidents to involve experienced display pilots, and that an accident occurring is not necessarily an indication of cognitive impairment. The AAIB 2019 supplement summarises the position that "the overall pattern of behaviour … can be explained in other ways that do not require impairment" and that "an accident is not necessarily an indication of cognitive impairment".

21. However, the AAIB's exploration of the possibility of cognitive impairment explaining the pilot's actions appears to have been be limited to considering +Gz-related cognitive impairment (see AAR 1/2017 at page 166).

22. Mr Hill and Canfield Hunter have raised issues with the AAIB's modelling to calculate the G force experienced by the pilot during the flight and the final manoeuvre. It is suggested that the Gz calculation used in the initial AAIB report was incorrect. This is relevant to the issue of whether the pilot was affected by +Gz during the accident flight and whether cognitive impairment induced by +Gz could happen at lower levels of +Gz than previously thought. However, I have considered this position and submissions not only with reference to the AAIB report, but also in the light of the separate review later conducted by the CAA. The AAIB 2019 supplement concluded that "Subtle cognitive impairment by +Gz has not been considered an issue within aviation" and is "not recognised by the aeromedical community". The CAA's expert review, CAP1963, published in December 2020, sought to determine whether any basis could be found in the scientific literature to support the proposal that cognitive impairment occurs in pilots experiencing lower level G forces below that known to cause an alteration of consciousness. That expert review having found no evidence for the proposition confirms the AAIB position that there was no evidence that a G force induced cognitive impairment played a role in the crash. As I am not presently persuaded that there is credible evidence that the AAIB investigation of cognitive impairment caused by +Gz alone was defective I do not accept that I should re-investigate the specific Gz calculations in question.

[5] GLD letter to me of 23 June 2020.

23. However, Mr Hill has pointed out that the defence he raised at his trial was not solely based upon him experiencing a 'Gz induced' cognitive impairment, but also postulated other potential mechanisms of cognitive impairment. In September 2020 Mr Hill provided me with an expert medical report of Dr Christopher Mitchell, Director of Children's Services at the Oxford Radcliffe Hospitals, which he has asked me to consider. That report postulates a mechanism of cognitive impairment that Mr Hill believes has not been investigated by the AAIB. In that report Dr Mitchell states that an ex-RAF doctor and a human factors expert have conducted assessments of head tilt with the pilot but neither report can be disclosed (I have taken this to mean that protected material is involved). Dr Mitchell postulates a mechanism of cerebral hypoxia arising from the pilot's head position, which he asserts can provide areas of pressure to the side of the neck in the area of the key carotid arteries which provide blood flow to the brain.

24. Dr Mitchell postulates three key contributory factors in relation to the Shoreham crash:
    "(i) The (almost uniquely) poor visibility from the Hunter T7 cockpit due to the canopy structure; and (as a consequence) the requirement, unlike other aircraft types, for significant head movement in order to maintain the visual reference in specific situations.
    (ii) The layout of the Shoreham display area, including unusual 'avoidance' areas, requiring adaptation of a typical display sequence, and necessitating atypical head movements to ensure compliance.
    (iii) Research conducted into the effects of +Gz on pilots being predominantly in centrifuges under academic conditions, specifically where the subject sits head upright and facing forward."

25. However, he asserts that the non-G force related factors effecting the Shoreham pilot cannot be fully explored since the evidential material is protected by the AAI Regulations. Dr Mitchell's substantive conclusions are, he states, restricted by the evidence that can be referenced by him.

26. The AAIB's submissions to me in June 2019 stated that "in respect of any issue of cognitive impairment suffered by the pilot, in the event that the Senior Coroner is in possession of relevant evidence that was not before the AAIB, the Coroner will need to decide whether the test set out by Lord Thomas is met". It is with those words in mind that I have decided to bring a part 8 claim.

27. Importantly the AAIB report 1/2017 appears to be silent on the mechanism of cognitive impairment now postulated by Dr Mitchell. Dr Mitchell's paper was produced in September 2020, almost a year after the AAIB declined to re-open their investigation in Autumn 2019, and so I do not understand it to have been available to the AAIB for their subsequent review.

28. I have also noted that in his response to the submissions of Nexa law dated 25 February 2020 Mr Firth of the AAIB positively distanced the AAIB from the assertion made by Nexa that the material reviewed by the AAIB in its 2019 supplement was the criminal

trial expert theory. Mr Firth makes it clear the AAIB supplement does not specify the source of the material that was considered (see Mr Firth's statement of 20 August 2020 at para 112) although he acknowledges the new material considered included "witness statements, several analyses of the pilot's actions and a video of a practice display at Duxford".

29. For the reasons set out in more detail in the Part 8 documents, I am not currently in a position to scrutinise the criminal trial transcripts to confirm what expert opinion on this point was or was not available at the trial. In brief summary, the digital recordings of the oral expert evidence (including expert accounts of the go-pro footage) given in public at the criminal trial of Mr Hill were transcribed at my expense with the permission of the trial judge, and were then disclosed by me to all of the Interested Persons in these inquests (including the AAIB) in June 2019. A whole year later the AAIB asserted that these criminal trial transcripts contained 'protected material' under the Regulations and that it may be unlawful for them to be disclosed by me for the purposes of the inquests. In response I decided I should withdraw them from use in these inquests until the lawfulness of them being in my possession is clarified by the High Court. This is an extremely unsatisfactory situation.

30. Where this all leaves me is that the AAIB investigation could not completely exclude cognitive impairment as a factor in the crash and the acquittal by a criminal jury (although it proves nothing) tends to indicate that the jury also could not be sure that cognitive impairment had not occurred. Mr Hill now asks me to consider a different purported mechanism of cognitive impairment as an explanation for his actions from that explored by the AAIB. However, the medical expert supporting Mr Hill's position indicates that he needs to rely on the protected material from the criminal trial to properly set out and explain his propositions. I hold some of that material in the form of transcripts, but I cannot use these without risk of breaching the AAI Regulations. The Sussex Police hold the other relevant material, but as it is 'protected material' they cannot allow me to see it without a High Court Order.

31. My duty is to conduct a full, fair and fearless inquiry in circumstances where the inquest's scope specifically includes consideration of the extent to which, if any the pilot suffered a cognitive impairment which affected his flying abilities and caused or contributed to the crash.

32. It appears to me that the matters raised by Mr Hill through Dr Mitchell's paper do raise a significant question as to whether the AAIB investigation is incomplete in this respect that I should further explore.

33. I emphasise that I have not at this stage determined that the AAIB investigation was actually incomplete and so I am not seeking any protected material for the purpose of re-investigating matters already investigated by the AAIB. Rather:

    a. I accept the AAIB position that I should only reinvestigate a matter already investigated by the AAIB if there is credible evidence the AAIB investigation is defective;
    b. I have not reached the stage where I have determined that the AAIB investigation was defective in any respect;
    c. I accept the AAIB assertion that if I am in possession of relevant evidence that was not before the AAIB, I will need to decide whether the test set out by Lord Thomas is met;
    d. I am at the stage where, in the light of Dr Mitchell's report I must now decide whether or not his propositions do amount to credible evidence that the AAIB report is defective
    e. I note that evidence of cognitive impairment was successfully deployed to defend the charge of gross negligence manslaughter although without access to the trial material I cannot know the detail of the defence evidence;
    f. To evaluate Dr Mitchell's evidence and determine if it does provide credible evidence that the AAIB investigation was defective requires me to consider the protected material relevant to that issue that was deployed at the criminal trial
    g. In order to make that first determination, I am therefore making a limited and focussed application to the High Court for the protected material that was already deployed, in public, during the criminal trial.

34. I understand that the trial expert reports and the split screen footage are in the possession of Sussex Police. I accept the submission of the AAIB that the cockpit footage and the expert reports that rely upon it have a protected status in law and as such the Sussex Police may not voluntarily hand them over to me. Only the High Court can give that authority.

35. I shall therefore approach the High Court for permission to access that material pursuant to reg.25 of the Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 2018/321 ('the AAI Regs') and reg.14 of the Regulation (EU) No. 996/2010 of the Investigation and Prevention of Accidents and Incidents in Civil Aviation ('the EU Regs'). I shall seek:

    a. Disclosure of the split screen cockpit Go-Pro footage which was produced for the purposes of the criminal trial of Mr Hill.

    b. Disclosure of those defence and prosecution expert reports addressing issues related to cognitive impairment that were produced and or relied upon during the prosecution of Mr Hill, which are themselves 'protected material' by virtue of them relying upon interpretation of that cockpit footage.

c. Permission to consider and use, for the purpose of eleven inquests, transcripts of the expert and factual evidence given during the prosecution of Mr Hill in so far as that evidence describes or relies upon protected material including the said cockpit footage.

PENELOPE SCHOFIELD
Senior Coroner for West Sussex

21 April 2021