Shoreham Air Show Crash Inquest

As a barrister and former professional pilot in the RAF, I have been instructed on many complex air accident inquests, from passengers killed in airliner accidents to high net worth individuals killed while piloting or travelling in smaller general aviation aircraft.

Inquests - overview

A number of jurisdictions, including England and Wales, require an inquest following a death. In England and Wales, where a death was violent or unnatural an inquest must be held. An inquest is a public fact-finding inquiry conducted by a coroner, with or without a jury, to determine the identity of the deceased, the place and time of death and how the deceased came by his or her death. The Shoreham Air Show inquest will be held without a jury. In terms of how the deceased death occurred, there are a number of conclusions available to the coroner/ jury, including accidental death and unlawful killing.

If the inquest reveals continuing circumstances creating risks of other deaths and the coroner believes that action should be taken to prevent the occurrence or continuation of such circumstances, the coroner must report the matter (a Rule 28 Report) to a person who he/ she believes may have the power to take such action.

Although the purpose of the inquest is not to determine civil or criminal liability, questioning of witnesses by a specialist advocate can produce additional important evidence that can provide the families with a better understanding of what went wrong, which (if they are pursuing civil legal proceedings) can make a significant difference to the strength of their legal case and/ or the strategic direction of the case. In addition, the specialist questioning can also highlight to the coroner that there is a continuing risk requiring a Rule 28 Report to prevent future deaths.

The crash at Shoreham Air Show

On 22 August 2015, an ex-military Hawker Hunter T7 fast jet aircraft crashed during a flying display at Shoreham Air Show in West Sussex, England. It crashed onto cars on the A27 road during a looping aerobatic manoeuvre, killing 11 and causing injuries to a group of people in close proximity. Following impact with the road, the pilot ejector seat operated to eject the pilot (Andrew Hill) from the aircraft as it exploded and the pilot survived.

This Hawker Hunter had been operated by a number of civilian entities on the air show circuit and for providing fast jet experience flights to corporate executives and wealthy individuals.

Due to my experience in operating high performance military aircraft (including fast jet and Turbo-prop) and having worked on international air shows at RAF Leuchars and RAF Waddington (where I was a flying display coordinator), in 2016 I was instructed to represent families who had lost loved ones in the Shoreham tragedy.

As it was a vintage military aircraft, there was no Flight Data Recorder (FDR) or cockpit Voice recorder (CVR) "black box" evidence available for the Air Accident Investigation Branch (AAIB). However, there were two Go-Pro cockpit cameras that could provide important information that could be used to assess the accident.

Although the inquest had been opened shortly after the accident, due to the ongoing air accident investigation it could not proceed until publication of the Final Accident Report.

During 2015 and 2016 the AAIB published three Special Bulletins and the Final Accident Report was published on 3 March 2017.

As I expected, the final report concluded that the causal factors were the aircraft entered the manoeuvre too slow, the engine thrust in the climb was too low which caused the apex of the manoeuvre to be too low to complete the manoeuvre. The other causal factor was that the pilot did not try to abort the manoeuvre, despite the aircraft being too low at the apex.

From a professional military pilot perspective, the key points relating to the pilot, include:

- From his fast jet and aerobatic display flying with the RAF, he was familiar with speed and height safety gates for aerobatic manoeuvres and the recovery (escape) manoeuvres used when a safety gate was not achieved.
- The pilot's display authorisation checks in 2014 and 2015 were obtained on the Jet Provost and RV-8 aircraft - not the Hunter aircraft.
- From 2013 - 2015 the pilot had only flown 3 display practices and 7 displays in the Hunter aircraft.

- Flight trials by a test pilot in a Hunter aircraft confirmed that during the accident manoeuvre, an escape manoeuvre (rolling the aircraft upright and pulling out of the dive) could be accomplished at airspeeds as low as 80 knots and up to 4 seconds into the descent after passing the apex.
- Recordings from video cameras in the cockpit appeared to show that throughout the flight the pilot was conscious, the aircraft was responding to his control inputs and the engine instruments did not indicate any engine malfunctions.
- The Pilot did not recall the accident flight.
- The aircraft entered the accident manoeuvre at around 185 feet, which was below the minimum height of 500 feet. This was the first safety gate divergence at which the manoeuvre should have been aborted.
- The aircraft entry speed for the manoeuvre was 310 knots, which was below the minimum entry speed of 350 knots. The pilot stated that he would abandon the manoeuvre if the minimum entry speed was not achieved. This was the second safety gate divergence at which the manoeuvre should have been aborted.
- The pilot stated that maximum thrust should have been used for the manoeuvre. Recorded information indicated that engine thrust modulated during the climb. If less than maximum thrust had been detected by the pilot, the manoeuvre could have been abandoned during the climb.
- As the aircraft entered the manoeuvre too low/ slow and with less than maximum thrust, it only achieved an apex height of around 2700 feet. The minimum height loss during the downward part of the manoeuvre was 2600 - 2950 feet. The pilot stated that he required a minimum of 3500 feet at the apex and that if he did not achieve this, he would abandon the manoeuvre. This was the third safety gate divergence at which the manoeuvre should have been aborted.
- The airspeed at the apex was 105 knots, which was at the lower end of the airspeed range of 100 - 150 Knots, but considerably above the minimum escape speed of 80 Knots.
- From the apex, the pilot had 4 seconds to escape by rolling the aircraft upright and pulling out of the dive.
- The pilot stated that if the aircraft did not achieve a height of 3500 feet, he would perform an escape manoeuvre by reducing the rate of pitch, increase airspeed, roll the aircraft upright and climb away.
- The AAIB report stated that the pilot had not practiced the escape manoeuvre he described in the Hunter aircraft, but the execution of such a manoeuvre would have been consistent with his background and experience.
- By not abandoning the manoeuvre, there was insufficient height at the apex to complete the manoeuvre before impact with the ground.

The Final Accident Report identifies very concerning aspects in relation to the aerobatic manoeuvre. It confirms that the wrong speeds and heights were used but the pilot did not try to escape the manoeuvre. Given that he was a very experienced military and display pilot, it is very surprising that he did not escape the manoeuvre. The pilot was aware of escape manoeuvres for other military aircraft but said that he had not practiced and had not been assessed on escape manoeuvres in the Hunter aircraft. This is extremely concerning – an escape manoeuvre at the apex of a loop is drilled into military pilots and should have been instinctive to the pilot in the Hunter aircraft, even though not recently practiced. Further, in the very unlikely event that he did not think he was competent to perform such a manoeuvre, he should have ensured that he had practised this in the Hunter at a safe height prior to performing any flying displays at low level.

The AAIB made a further 11 safety recommendations in the final report, including that display pilots be trained and assessed on escape manoeuvres and that an independent review of the governance of flying display activity should be commissioned by the Department for Transport.

Criminal prosecution

Following an investigation by Sussex police, the pilot was charged with 11 counts of gross negligence manslaughter. Due to this criminal prosecution, the inquest was again stayed until conclusion of the criminal trial.

Between January and March 2019, the pilot was tried on those charges at the Central Criminal Court. The Go-Pro cockpit camera footage was set up as a split screen montage by the police and was shown to the jury in open court during the trial. An issue raised at the trial on behalf of the pilot was whether he had suffered some form of cognitive impairment which had led him to fly the aircraft in that way that he did. Expert evidence on that matter was before the jury by way of reports and oral evidence. The pilot was acquitted on all counts on 8 March 2019.

AAIB Investigation review

After pilot's acquittal, in June 2019 the AAIB reviewed their original investigation and considered the theory that the aircraft was flown in the manner that it was because the pilot had suffered a cognitive impairment during the looping manoeuvre. A supplementary review report was published on 19 December 2019. This concluded: "*there was no new and significant evidence of cognitive impairment*" and that "*the findings of the (2017) AAIB investigation remain valid*". The AAIB accordingly declined to re-open their investigation.

Case law developments during the Inquest

Due to the complexity and length of the inquest process, there have been decisions on cases concerning other inquests that have important implications for the Shoreham Inquest.

R (on the application of the Secretary of State) v HM Senior Coroner for Norfolk [2016] EWHC 2279

On 28 September 2016 the High Court delivered judgement on this case, which concerned the coroner ordering disclosure of cockpit voice and flight data recorder evidence (CVFDR). In its judgement which found against the coroner, the court also stated that "*There is no public interest in duplicating investigations and therefore the coroner should not go over the same ground as the AAIB in the inquest. Where there is no credible evidence that the investigation is incomplete, flawed or deficient, the findings and conclusions should not be reopened*."

This judgement has very persuasive influence over aviation inquests. As the AAIB Final Report is admissible at the inquest and as the AAIB investigator(s) can give evidence at the inquest, in the absence of credible evidence of a problem with the AAIB investigation, a coroner will be very unlikely to call any other witnesses/ independent experts that could be considered as re-investigating the AAIBs investigation.

R (on the application of Maughan) v Her Majesty's Senior Coroner for Oxfordshire [2020] UKSC 46

On 13 November 2020 the Supreme Court determined that the civil standard of proof (balance of probabilities) is to be applied in coronial inquests for all conclusions that a coroner or a coroner's jury might return. Prior to this ruling, it had been accepted that for inquests the conclusions of unlawful killing and suicide could only be returned if found proven to the criminal standard of '*beyond reasonable doubt*'.

Schedule 1, para 8(5) of the Coroners and Justice Act 2009 deals with the resumption of investigations that have been suspended pending a homicide trial and sub-paragraph (5) contains a prohibition on a subsequently resumed inquest arriving at conclusions which are inconsistent with the outcome of criminal proceedings in respect of the same death.

This case means that should a coroner or inquest jury find that the requisite elements of murder, manslaughter or infanticide are established 'on the balance of probabilities' then an inquest conclusion of unlawful killing will be permissible even though there has already been an acquittal following a homicide trial. Such an inquest conclusion would not be inconsistent with a criminal jury having already found that they were not satisfied of the very same matters 'beyond reasonable doubt'.

For the Shoreham inquest, the Supreme Court's judgment in Maughan now means that it could be possible for the coroner coming to the determination that the eleven deceased were 'unlawfully killed' if the coroner is satisfied, from the evidence, that the five elements of the offence of gross negligence manslaughter have been established on the balance of probabilities:

1. The existence of a duty of care (based on ordinary principles of negligence) owed to the deceased,
2. a breach of that duty of care,
3. the risk of death (not just the risk of serious injury was a reasonably foreseeable consequence of the misconduct,
4. the breach caused the death, and
5. having regard to the risk of death involved, the misconduct was grossly negligent so as to be condemned as the serious crime of manslaughter.

Shoreham Inquest - Coroner application to the High Court for disclosure of cockpit Go-Pro video footage

The Inquest was resumed by the coroner following the pilot's acquittal. In September 2020, the pilot presented to the coroner medical opinion that a particular mechanism of cognitive impairment may have been suffered by the pilot during the flight. The pilot asserted this mechanism was not investigated by the AAIB.

As a result, the coroner applied to the High Court for an order permitting her to obtain and use the Go-Pro video footage and some other material used in the criminal trial, for the purposes of assessing whether the pilot's medical opinion amounted to credible evidence that the AAIB investigation into the air crash was incomplete, flawed or deficient. If the coroner found so from this material, she stated to the High Court that as part of her coronial investigation she would seek to further investigate the matters within the AAIB's reports.

The law governing the disclosure of records and information obtained by the AAIB during the course of an AAIB investigation and disclosure of material produced during the course of an investigation is set out in Retained EU Regulation No 996/2010 (the EU Regulations) and the Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 2018 (S.I 2018/321) (the 2018 UK Regulations). The EU Regulations continue to apply in the United Kingdom as Retained EU law under the European Union (Withdrawal) Act 2018.

Following a hearing on 20 December 2021, the High Court ruled against the coroner and refused her application. The judgement was published on 4 February 2022:

HM Senior Coroner for West Sussex v Chief Constable of Sussex Police, Secretary of State for Transport, Mr Andrew Hill [2022] EWHC 215 (QB)

The court held that the cockpit Go-Pro footage and related evidence in the criminal trial was protected material and refused the coroner's application.

"……the footage and the evidential material in the trial which is derived from or which refers to that footage, is protected material within the 2018 United Kingdom Regulations and may only be disclosed to the Coroner where the High Court is satisfied, pursuant to regulation 25(5) of the 2018 United Kingdom Regulations: "that the benefits of the disclosure of the record concerned outweigh the adverse domestic and international impact which the disclosure might have on the safety investigation to which the record relates or any future safety investigation."…"

"…In our judgment, the starting point is therefore that there is no public interest in reinvestigation to put into the balance in the exercise under Regulation 25(5) of the 2018 UK Regulations. An important and narrowly prescribed exception to this position is a situation where, as Lord Thomas CJ explained in Norfolk, there is credible evidence that the AAIB's investigation is incomplete, flawed or deficient…."

"….We reject the Coroner's submission that the prohibition in Norfolk on her reinvestigating matters already investigated by the AAIB does not preclude her seeking protected material and expert opinion to determine whether she has credible evidence that the AAIB's investigation was incomplete, flawed or deficient. That would re-write the Norfolk test and make it weak to an extent that would seriously undermine its purpose, which is avoiding duplication of investigation by a non-expert body…."

"…A coroner should be very slow to find credible evidence that an expert investigation was incomplete, flawed or deficient…."

"…However, to seek disclosure, and then new expert opinions, merely because an Interested Person in the Inquests (in this case Mr Hill) has identified an individual who takes a potentially different view from the AAIB, would amount to precisely the reinvestigation cautioned against in Norfolk. In our judgment, it is wrong in principle for the Coroner to seek protected information before determining that there is at least credible evidence the AAIB investigation was incomplete flawed or deficient…."

"….In short there is neither credible evidence nor (even adopting her approach) a credible suggestion that the AAIB investigations were incomplete, flawed or deficient on the issue of cognitive impairment…."

"…There is no public interest benefit against which to balance harm that would be caused by disclosure. The Coroner's application must accordingly fail…."

This ruling by the High Court reinforced the influence of the Norfolk case to significantly limit the ability of a Coroner to conduct an inquest in a manner that could be considered a re-investigation of matters already investigated by the AAIB. It also makes it clear that the narrow "*incomplete, flawed or deficient*" exception should be a rare finding by a Coroner.

It is almost 7 years since the Shoreham tragedy and during this period the case law and this latest High Court ruling has had a significant impact on the Shoreham inquest. It has transformed from an inquest where it was initially anticipated that there would be a number of (non AAIB) independent experts and many other relevant witnesses requiring a hearing that would take 6-8 weeks, to an inquest that is much narrower, where the coroner cannot call independent expert evidence (in addition to the AAIB) or use any protected material used in the criminal trial. However, the conclusion of unlawful killing by the pilot (which was arguably not available following his criminal trial acquittal and prior to the Maughan case) is now a possible conclusion that the coroner can reach. So, although the coroner could come to a far more serious conclusion (effectively gross negligence manslaughter), she is more restricted in the evidence that she can call to determine the conclusion that she finds proven.

The inquest is listed during the period of 30 November – 19 December 2022. It has been a very lengthy and difficult process for the families. I look forward to being their advocate at the inquest and hope that, following its conclusion, they can find some closure.

JIM MORRIS - HEAD OF AVIATON - OF COUNSEL

Jim heads the Firm's aviation group based in London. Jim qualified as a barrister in 2005 and specialises in aviation law, aviation litigation, air accidents, aircraft operations, inquests and military law.