1 Oct 10

AOC 22 GP COMMENT

1. This mid-air collision occurred between the Synchro Pair element of the RAF Aerobatic Team (RAFAT) during preparation for Public Display Authority (PDA). Fortunately, there was a considerable amount of photographic and eye witness evidence available to the Service Inquiry Panel (SIP) which made it possible to establish, without any doubt, the sequence of events surrounding this accident. I agree with the findings of the SIP that the cause of the mid-air collision during the opposition Barrel Roll (OBR) occurred because the defined Minimum Separation Distances were not maintained. This was not the result of equipment malfunction, malicious or unprofessional acts; this was a case of unconsciously gradually eroding safety margins over time together with human misjudgement on the day.

2. The accident could be considered a totally unique event in that the OBR was the only manoeuvre flown by RAFAT that required aircraft to cross flight paths. Consequently, immediately after the accident in order to prevent recurrence, I prohibited both this specific manoeuvre and indeed introduction of any future manoeuvre that involves crossing of flight paths. This restriction will remain in force unless it can be demonstrated that risks inherent in any such manoeuvre have been mitigated to an acceptable level.

3. I accept the majority of the recommendations albeit there are several issues raised in this report that need greater clarification.

Training

4. Although training of the Synchro Pair had been disrupted in the early part of the year both pilots were on schedule to achieve PDA. However, during the accident OBR set-up both Red 6 and Red 7 found they were closer than previously experienced with little time to assess a safe course of action. The OBR had been flown for many years without mishap; however the SIP were able to demonstrate that minor changes over a number of display seasons had compressed the timings of the manoeuvre to such an extent that there was very little room for error. It is possible that the erosion of safety margins might have been recognised and hence prevented if the Synchro pair manoeuvres had been formally documented and configuration controlled. This requirement is now in place for the entire RAFAT display and is reflected in the totally revamped RAFAT Display Directive and Standard Operating Procedures. Furthermore, in response to an observation by the SIP, RAFAT have been tasked to assess the fidelity of the Hawk simulator as a means of practicing of both extant and new Synchro-specific formation manoeuvres and generic escape training, in a safe environment. Work to examine the feasibility of this approach is to be completed in time for the 2011 season work-up.

Risk Management

5. Risk Management has always been considered in aviation but over the last few years it has become a more formal documented process that is auditable. At the time of the accident, extant manoeuvres and procedures had not yet been subjected to the rigours of this more formalised Risk Management process. However, all RAFAT manoeuvres are to be subject to such scrutiny and I have directed that such work is to be undertaken and completed prior to work-up for the 2011 display season.

Supervision

6. I am content that there were appropriate levels of supervision in place to oversee the RAFAT detachment to HAF Kastelli AB and furthermore do not consider that supervision directly contributed to this accident. However, when a notable occurrence such as this accident happens it is an appropriate time to review the supervisory process and I note there are recommendations linked to the supervisory structure.

7. Whilst I can understand why the SIP made the recommendation that consideration should be given to previous display experience when appointing RAFAT supervisors, this accident was the result of gradually eroding safety margins without understanding of the unintended consequences of the actions. Hence, over-familiarity with the display should be balanced against the value that a 'fresh' set of eyes can bring to any organisation.

8. As part of any detachment planning process supervisors are to make sufficient and appropriate provision for both Crash and Post-Crash Management (PCM). Noting that specific PCM is a Host Nation responsibility and hence rigid enforcement of uk own procedures is likely to be unrealistic, the detachment may have benefited from consideration of a pre-deployment Crash and PCM checklist that was tailored to operating at HAF Kastelli; an issue that is likely to be valid for any flying detachment and one of which supervisors at all levels need to be cognisant.

Documentation

9. Although not germane to the accident, there can be no excuse for documentary errors, omissions or for out of date amendment states that were found by the SIP. The Panel noted that RAFAT has not recently been subject to external audit, such as an annual Formal Staff Visit (FSV), during which such documents are checked for accuracy and amendment state. I have directed that RAFAT will be included in the next annual FSV Programme to provide me with this assurance.

10. Occasionally our 'can do' attitude may test the regulatory boundaries within all aspects of aviation. In this instance the detachment tool control activities did not reflect authorised procedures and personnel strayed away from the formal process; it is never acceptable to sign for any check in advance of completing the procedure. As we move to a full Safety Management System it is this cultural behaviour that needs to change, as recognised by the RAF 'Can Do Safely' campaign - all personnel, at whatever level, must complete tasks in accordance with extant documented and regulated procedures; formal processes should be used where those procedures are found wanting. RAFAT engineering personnel are to be aware of, and compliant with, approved engineering practices and supervisors are to ensure that personnel are afforded the time to complete tasks in the approved manner.

PIDAT

11. In this case PIDAT procedures were not invoked as this incident occurred outside of the UK and is therefore not enforceable, but of concern PIDAT was not considered by detachment personnel. Although I do not consider it was a factor in this accident, the need to consider PIDAT should be included in any Crash Action Plan (due to the inherent time limitations for taking samples). Supervisors at all levels are to be made aware of this requirement through a proactive publicity campaign.

CONCLUSION

12. This accident was a result of a shift in the balance of risk over time; the absence of specific detail within the training documentation on how to perform the OBR within a safe envelope had left both pilots in an invidious position of not recognising the gradual erosion of safety margins to the point where there was little room for error.

13. There are a number of other issues that have come to the fore involving supervision, engineering practices, documentation, training and risk management. These areas should not be considered in isolation as there is read across to other flying units. I will ensure that these issues are highlighted and dealt with in a proactive manner across all of 22 (Training) Group's aviation activities.

14. We should be extremely grateful for the immediate and follow-on support provided by the Base Commander and his Staff at HAF Kastelli AB. Their reactions to the accident significantly

eased the task of the SIP in determining the cause; I have recorded my thanks in a letter to those involved. Finally, I wish to record my appreciation to the SIP for their professional approach and conscientious attention to detail throughout the investigation.

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AOC 22(Trg) Gp