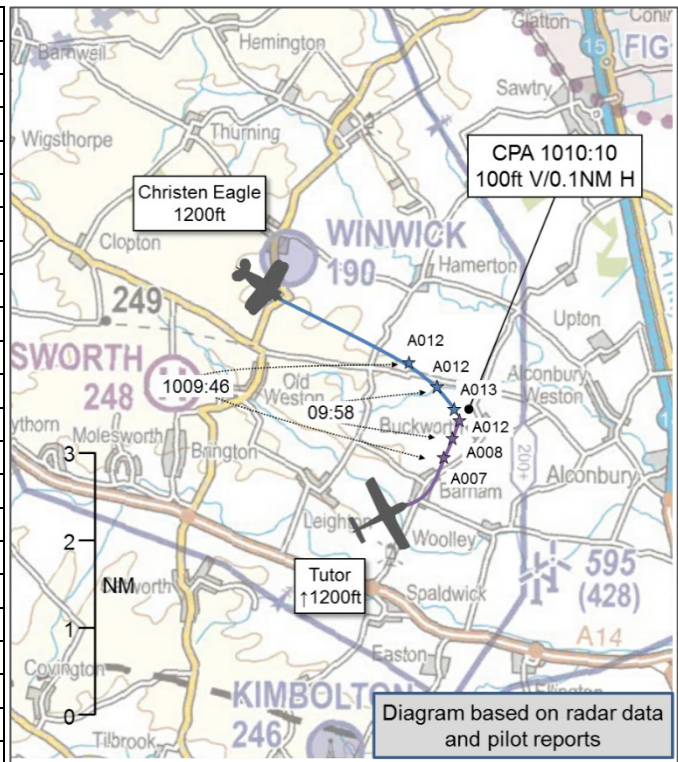


AIRPROX REPORT No 2020074

Date: 21 Jul 2020 Time: 1010Z Position: 5222N 00019W Location: 5NM W Alconbury

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

| Recorded | Aircraft 1 | Aircraft 2 |
|-------------------|-----------------|---------------|
| Aircraft | Christen Eagle | Tutor |
| Operator | Civ FW | HQ Air (Trg) |
| Airspace | London FIR | London FIR |
| Class | G | G |
| Rules | VFR | VFR |
| Service | None | Traffic |
| Provider | | Wittering |
| Altitude/FL | 1300ft | 1200ft |
| Transponder | A, C | A, C, S |
| Reported | | |
| Colours | Multi, White | White |
| Lighting | Nil | Strobes, Nav |
| Conditions | VMC | VMC |
| Visibility | >20km | NR |
| Altitude/FL | ~1800ft | NR |
| Altimeter | QNH (1025hPa) | RPS |
| Heading | 120° | 020° |
| Speed | 115kt | NR |
| ACAS/TAS | Not fitted | TAS |
| Alert | N/A | Information |
| Separation | | |
| Reported | 0ft V/200m H | 0ft V/0.5NM H |
| Recorded | 100ft V/0.1NM H | |



THE CHRISTEN EAGLE PILOT reports flying straight and level, assessing the balance of the aircraft at different speeds and making notes in order to make an adjustment to the fixed rudder trim tab after landing. Consequently, the pilot was checking the slip ball and looking down to make a note. This almost certainly contributed to the late sighting of the Grob. When first sighting the other aircraft, it was in the 1 o'clock position, level and moving right to left at about 250m distance. It appeared to have been approaching from a relative bearing of about 030°. At the same time as seeing the Grob, the other pilot rolled right, and the Christen Eagle pilot also rolled right. The pilot estimated that the two aircraft probably came within about 200m of each other.

The pilot assessed the risk of collision as 'High'.

THE TUTOR PILOT reports that on recovery to base, a contact was noted on TAS at about 2NM, in the 10 o'clock position. The contact was sighted visually and deemed not to be a threat. The crew maintained visual with the other aircraft and had a discussion about the fact that it looked like the other pilot had not seen their aircraft. They watched the aircraft approach and deemed that it was of no threat to the safety of their aircraft. They were in a gentle climb in order to gain height to teach side-slipping and the student was directed to turn very slightly to the right whilst maintaining level. The other pilot seemed to see them and then take very sharp avoiding action in the form of hard turn to the right and down. At no point was it assessed that the other aircraft came within in 0.5NM. On returning to base the incident was mentioned to the Duty Authoriser. No Airprox was raised at the time as it wasn't believed that the safety of the aircraft was ever threatened.

The pilot assessed the risk of collision as 'None'.

THE WITTERING CONTROLLER reports having little to no recollection of the event and was writing the report 9 days after the event. No Airprox was called on the frequency at the time. Research showed that they were controlling the Tutor as it was recovering visually to Wittering aerodrome. Traffic was

believed to be called to the Tutor pilot in the vicinity the Airprox, and the pilot's report indicated that they were visual. No further details were recalled.

Factual Background

The weather at Wittering was recorded as follows:

METAR EGXT 210950Z 30008KT 9999 FEW039 BKN050 17/08 Q1026 BLU=

Analysis and Investigation

Military ATM

The Tutor pilot was in receipt of a Traffic Service from Wittering ATC and reported that they were on recovery to Wittering. The pilot reports that they were on recovery to RAF Wittering after teaching PFLs and a contact was noted on TAS about 2nm in the 10 o'clock position. The contact was visually sighted, and it was discussed that it looked like the Christen Eagle pilot was not visual with them. The student was directed to turn slightly right whilst maintaining level following which the conflicting track was seen to take a sharp avoiding action turn to the right. They assessed that separation was 0.5NM.

The Wittering controller was not made aware of the Airprox for 9 days by which point they had little to no recollection of the incident. They believed Traffic Information was passed to the Tutor pilot. Reviewing the tape transcript, it was evident that the Wittering controller was in control of another 4 aircraft however, the types of service being provided is unknown.

Traffic Information was given to the Tutor pilot from Wittering on an unknown aircraft which could not be identified by the radar replay. This was the last time that any Traffic Information was passed until after CPA occurred 3min and 1sec later.

Figures 1-5 show the positions of the Tutor and the Christen Eagle at relevant times in the lead up to and during the Airprox. The screen shots are taken from a replay using the NATS radars, which are not utilised by Wittering therefore, may not be entirely representative of the picture available to the Wittering controller.

The Christen Eagle pilot was transiting from the NW in an easterly direction. Separation at this point was 5.3NM and 500ft.

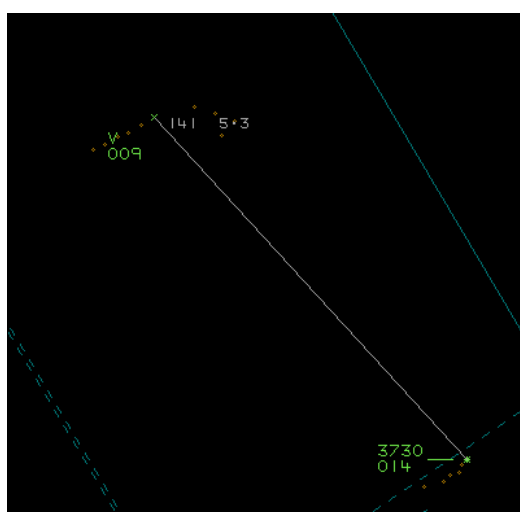


Figure 1:
Separation and flight profile of Tutor and Christen Eagle.

One minute and 17 seconds later the Christen Eagle was tracking steady on a SW heading. Between Figure 1 and Figure 2, 8 transmissions were made between another Tutor pilot and the Wittering controller. Separation at this point had decreased to 3.7NM.

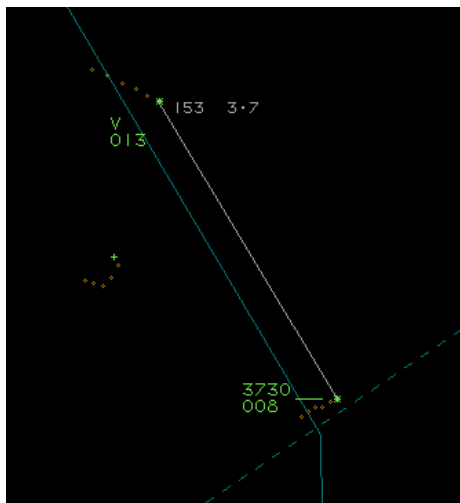


Figure Two:
Updated flight track of Christen Eagle.

After a further one minute and 13 seconds the Tutor trail appears to show a slight right turn however this could be associated with a PFL due to the lower altitude. No RT transmissions were made by the Wittering Controller or any aircraft on frequency. Separation decreased to 1NM.

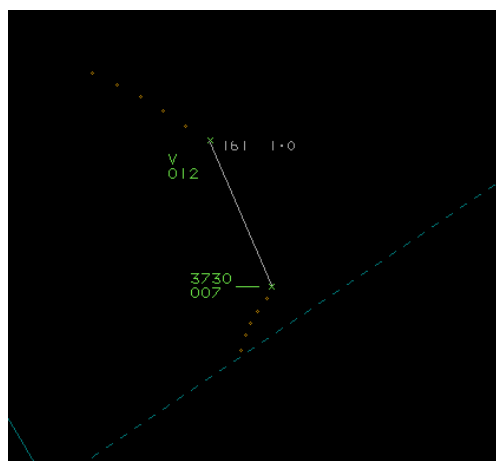


Figure 3:
Slight deviation in the Tutor flight profile.

CPA was measured at 0.1NM and 100ft.

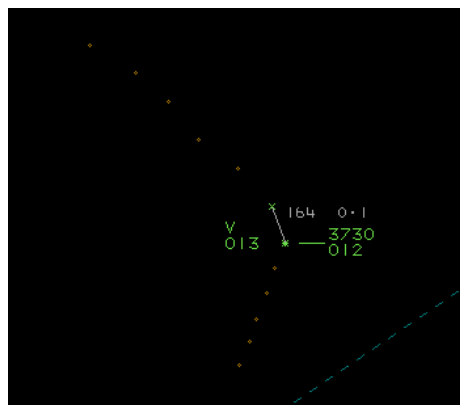


Figure 4:CPA

Allowing the radar replay to run beyond CPA appears to show the Christen Eagle's reported right hand turn.

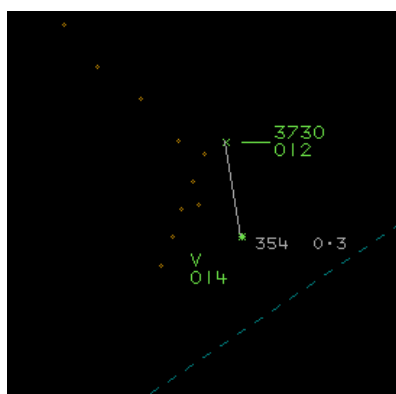


Figure 5: Christen Eagle track deviation.

It does not appear that any Traffic Information was passed to the Tutor pilot regarding the Christen Eagle and whilst it is noted that the Wittering controller was working multiple aircraft there were large periods of no RT transmissions. As the controller does not recall the incident due to the time lapse between it happening and it being reported, it is unknown whether the controller was carrying out other tasks during the periods of no RT transmissions. The Tutor pilot reported that they were visual with the Christen Eagle following a TAS indication however, flew into close proximity although they discussed that it was unlikely the Christen Eagle pilot was visual with them. The Christen Eagle pilot was making notes and as a result was heads down in their cockpit which may have contributed to a late sighting.

UKAB Secretariat

The Tutor and Christen Eagle pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.¹ If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.² If the incident geometry is considered as converging then the Christen Eagle pilot was required to give way to the Tutor.³

Comments

HQ Air Command

Had the Christen Eagle pilot been talking to an ATC agency, then they may have received traffic information on the Tutor. Certainly, it would have aided the subsequent investigation if an Airprox had been called on frequency at the time. Notwithstanding this, it would appear that the Tutor, who was in receipt of a Traffic Service from Wittering, did not receive traffic information on the Christen Eagle. It has not been possible to determine why, partly due to the time gap between the incident being reported and the Wittering controller being notified. The Christen Eagle did not have a Collision Warning System and so the pilot was depending on lookout. Whilst conducting a handling assessment, the pilot was potentially distracted from looking out, contributing to the late sighting of the Tutor and so potentially increasing the 'startle factor'.

The Tutor pilot received a TAS alert on the proximity of the Christen Eagle at 2nm and then became visual with it, altering course slightly to the right. The Tutor pilot later stated that the other aircraft did not pose a threat to their aircraft and that they never believed that the safety of their aircraft was in doubt. The pilot acknowledged that the initial estimation of the lateral separation between the aircraft (0.5nm) may have been greater than the actual distance. In hindsight, the distance may

¹ SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

² SERA.3210 Right-of-way (c)(1) Approaching head-on. MAA RA 2307 paragraph 13.

³ SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

have been closer to c200 - 300m. Due to the time gap in the incident being reported and the Tutor pilot being notified, the Instructor could not confirm the other aircraft type involved in the incident but the student pilot asserted that the aircraft observed was a bi-plane. Despite the Tutor pilot stating that there was no risk of collision, given that the Christen Eagle was sighted within 2nm and recorded separation was 0.1nm, it would have been prudent for the Tutor pilot to have increased separation more markedly, especially as the Christen Eagle pilots intentions were not known.

Summary

An Airprox was reported when a Christen Eagle and a Tutor flew into proximity 5NM W Alconbury at 1010Z on Tuesday 21st July 2020. Both pilots were operating under VFR in VMC, the Tutor pilot in receipt of a Traffic Service from Wittering, the Christen Eagle pilot was not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments.

The Board first discussed the actions of the Christen Eagle pilot. They commended the pilot for the honest report, **(CF7)**. This led to a discussion by the Board about ways to mitigate the risks posed by such distraction, with members opining that the Christen Eagle was not fitted with any form of CWS, but that the pilot perhaps could have flown with a passenger to provide extra look-out. Additionally, a radar surveillance ATS could also have provided mitigation against the distraction from the air-test **(CF3)**. Consequently, without an ATS or CWS the pilot had no prior situational awareness about the Tutor **(CF4)** until the late sighting, at which point avoiding action was taken **(CF8)**. A final point to note was that by not reporting the Airprox over the RT, it took some days to identify the Tutor pilot, and therefore the Wittering controller, which had hampered the RAF investigation.

A further discussion noted that the area in which the Airprox took place was lacking in a LARS provision, with Wittering ATC only able to provide a service to their own aircraft. The Board had previously highlighted this shortfall and a CAA advisor assured members that the CAA's Airspace Modernisation Strategy (Initiative 9) sought to review the mechanisms and arrangements by which ATS are provided to aircraft in the en-route phase of flight (as currently delivered through the LARS); the funding of such provision however was a key issue to be resolved.

Turning to the Tutor pilot, the instructor reported that a TAS alert was received at a range of 2NM **(CF6)** and they had seen the Christen Eagle in good time and pointed it out to the student. Members were therefore disappointed that the pilot continued to fly towards it, closing to 0.1NM with only 100ft vertical separation **(CF5)**. They noted that, without knowing the intentions of the other pilot, it would have been safer to have given it a wider berth in case the other pilot had unexpectedly turned toward their aircraft **(CF9)**.

Finally the Board considered the role that ATC had to play. A Traffic Service was being provided to the Tutor pilot, but Traffic Information was not passed **(CF1, CF2)**. The controller had no memory of the incident and the RT recordings indicated that, although they had been busy previously, at the time of the incident the frequency had quietened. Unfortunately, it was not known whether there were any other distractions for the controller at that time.

In determining the risk, members quickly agreed that because the Tutor pilot was visual with the Christen Eagle pilot throughout, there had been no risk of collision. However, given the final separation of the two aircraft, they considered that safety had been degraded; Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

| 2020074 | | | |
|--|---------------|--|---|
| CF | Factor | Description | Amplification |
| Ground Elements | | | |
| • Regulations, Processes, Procedures and Compliance | | | |
| 1 | Human Factors | • ATM Regulatory Deviation | Regulations and/or procedures not complied with |
| • Situational Awareness and Action | | | |
| 2 | Human Factors | • ANS Traffic Information Provision | TI not provided, inaccurate, inadequate, or late |
| Flight Elements | | | |
| • Tactical Planning and Execution | | | |
| 3 | Human Factors | • Flight Planning and Preparation | |
| • Situational Awareness of the Conflicting Aircraft and Action | | | |
| 4 | Contextual | • Situational Awareness and Sensory Events | Pilot had no, late or only generic, Situational Awareness |
| 5 | Human Factors | • Lack of Action | Pilot flew into conflict despite Situational Awareness |
| • Electronic Warning System Operation and Compliance | | | |
| 6 | Contextual | • Other warning system operation | Warning from a system other than TCAS |
| • See and Avoid | | | |
| 7 | Human Factors | • Distraction - Job Related | Pilot looking elsewhere |
| 8 | Human Factors | • Monitoring of Other Aircraft | Late-sighting by one or both pilots |
| 9 | Human Factors | • Lack of Individual Risk Perception | Pilot flew close enough to cause concern |

Degree of Risk: C.

Safety Barrier Assessment⁴

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Ground Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because ATC did not give Traffic Information to the Tutor pilot despite providing a Traffic Service.

Situational Awareness of the Confliction and Action were assessed as **ineffective** because ATC did not provide Traffic Information.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the Christen Eagle pilot had no situational awareness that the Tutor was there.

Electronic Warning System Operation and Compliance were assessed as **partially effective** because the Tutor crew did not change course despite having situational awareness on the Christen Eagle from the TAS.

See and Avoid were assessed as **partially effective** because once visual, the Tutor crew did not take early action.

⁴ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

| Airprox Barrier Assessment: 2020074 | | Outside Controlled Airspace | | | | | | |
|--|--|-----------------------------|-------------------|----------------|-------------|-----------------------------------|-----------------|--|
| Barrier | Provision | Application | Effectiveness | | | | | |
| | | | Barrier Weighting | | | | | |
| | | | 0% | 5% | 10% | 15% | 20% | |
| Ground Element | Regulations, Processes, Procedures and Compliance | | | | | | | |
| | Manning & Equipment | | | | | | | |
| | Situational Awareness of the Confliction & Action | | | | | | | |
| | Electronic Warning System Operation and Compliance | | | | | | | |
| Flight Element | Regulations, Processes, Procedures and Compliance | | | | | | | |
| | Tactical Planning and Execution | | | | | | | |
| | Situational Awareness of the Conflicting Aircraft & Action | | | | | | | |
| | Electronic Warning System Operation and Compliance | | | | | | | |
| | See & Avoid | | | | | | | |
| Key: | | | <u>Full</u> | <u>Partial</u> | <u>None</u> | <u>Not Present/Not Assessable</u> | <u>Not Used</u> | |
| Provision | | | | | | | | |
| Application | | | | | | | | |
| Effectiveness | | | | | | | | |