

AIRPROX REPORT No 2012098

Date/Time: 12 July 2012 1444Z

Position: 5417N 00147W (9nm W of Leeming)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: Hawk T1 Nimbus 3T

Operator: HQ Air (Ops) Civ Club

Alt/FL: 3000ft 3200ft
QFE (1005hPa) (NK)

Weather: VMC CAVOK VMC

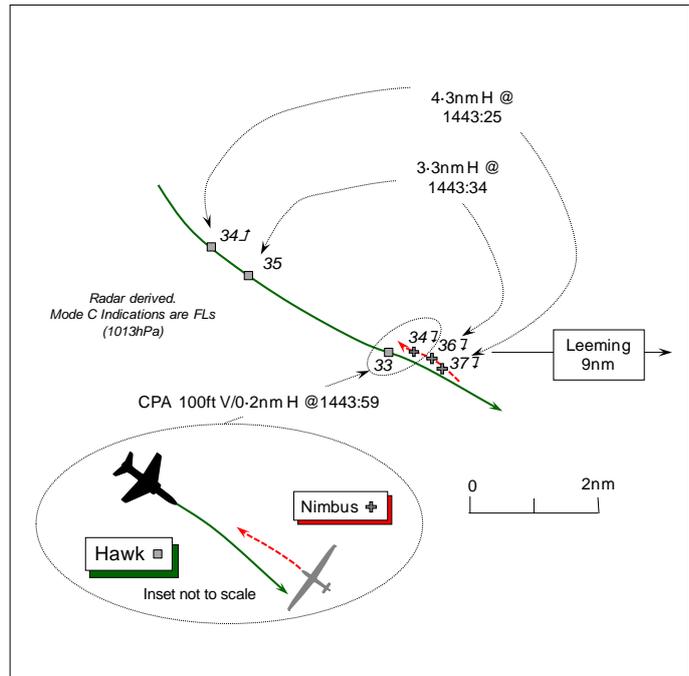
Visibility: 40km 40nm+

Reported Separation:

10ft V/100ft H 30-40ft V/<100yd H

Recorded Separation:

100ft V/0.2nm abeam



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE BAe HAWK T1A PILOT reports he had just established communications with Leeming APP on 386.575MHz during a recovery to Leeming from the NW. Flying straight and level at 3000ft on Leeming QFE (1005hPa) in VMC, they requested and were given a BS by APP. A squawk of A7000 was selected with Mode C on. Immediately afterwards the controller advised of a contact in their 12 o'clock; it was passed as 'slow moving with no height'. Shortly afterwards, approaching a position about 9nm W of Leeming heading 110° at 350kt, as they concentrated their lookout forward in an effort to acquire the reported contact, a white high performance glider was seen 200m away slightly high and to the L, flying straight and level. Avoiding action was taken by bunting and rolling R as the white glider passed <100ft laterally to port and about 10ft vertically above his ac with a 'very high' Risk of collision. An Airprox was reported to Leeming APP on the RT and their recovery was continued. His ac is coloured black; the nose light and HISLs – set to white - were all on.

THE NIMBUS 3T GLIDER PILOT reports he was airborne from Sutton Bank on a cross country flight, with Leyburn [about 2nm NW of the Airprox location] as his next turning point (TP). He was listening out on the gliding frequency of 130.4MHz, but was not in receipt of an ATS; elementary surveillance Mode S is fitted and a squawk of A7000 was selected with Mode C.

Between Middleham and Leyburn, [heading NW'ly] at 70kt, cruising at 3200ft [pressure setting not known] he was approaching the TP, with about 3km to run when suddenly a black Hawk ac was seen less than 1nm away that appeared to be coming towards him on his LH side. The Hawk was turning to avoid his Nimbus, and passed about 30-40ft below his glider, less than 100yd to port with a 'high' Risk of collision. He did not have time to take avoiding action. His glider is coloured white.

THE LEEMING APPROACH CONTROLLER (APP) reports he was screening a U/T controller with one Hawk on a visual recovery to the A/D under a BS. As weather conditions were good, he had received multiple reports of glider activity within 20nm of the A/D and 2 strong primary contacts were observed manoeuvring W of the A/D at ranges of 8 and 6 miles.

As the Hawk was heading towards one of the contacts and no height information was available, both returns were called to the crew. As the Hawk passed the primary contacts, the pilot advised that the

return was a glider and reported an Airprox. The Hawk pilot reported on the RT passing the glider with 50yd to spare and subsequently carried out a normal recovery to Leeming.

BM SAFETY MANAGEMENT reports that the SSR data utilised by Leeming ATC is provided from the SSR head at Linton-on-Ouse. Unfortunately, the SSR data link between the 2 stations was un-serviceable on this day, consequently, Leeming were providing an ATS using only primary surveillance radar (PSR) data. The Unit has confirmed that this un-serviceability was notified to Leeming-based squadrons through their respective operations sections and included on the Automatic Terminal Information System (ATIS) broadcast. APP was manned by a trainee and mentor, who described their workload and task complexity as low; the Hawk was the only ac on freq.

The Hawk crew free-called APP at 1442:08, the flight was placed under a BS and the current ATIS code confirmed. At 1443:25, APP passed TI to the Hawk crew on the Nimbus, stating, "*traffic believed to be you has traffic, 12 o'clock, 4 miles, opposite direction, no height information*", which was acknowledged. Although the SSR data was not available to Leeming ATC, the Nimbus was equipped with a Mode S transponder. At this point, the Nimbus was 4.8nm ESE of the Hawk, slightly L of the 12 o'clock, tracking NW'ly, indicating 3700ft Mode C (1013hPa); the Hawk was tracking SE'ly, indicating 3500ft Mode C (1013hPa).

At 1443:34, APP provided further TI to the Hawk crew stating, "*traffic believed to be you has traffic, 12 o'clock, 7 miles, opposite direction, no height information*", which was acknowledged. The LATCC (Mil) radar recording does not display this radar contact.

At 1443:42, the Hawk turned L about 20°, which served to decrease the lateral separation between their projected track and that of the Nimbus. Prior to the turn, lateral separation at the CPA would have been approximately 0.9nm. Furthermore, this turn was associated with an indicated descent to 3300ft, descending further to 3100 ft at 1443:54. However, immediately prior to the CPA at 1443:58, the radar recording shows that the Hawk had climbed back to 3300ft. After the CPA, whilst the pilot's reported roll to the R was not visible on the radar replay, the Hawk's descent was shown.

The CPA with the Nimbus occurred at 1443:59 as the Hawk passed 0.2nm down the Nimbus' portside indicating 3300ft; the Nimbus was indicating 3400ft.

Whilst the Hawk pilot was in receipt of a BS, APP discharged their Duty of Care and provided them with accurate TI on the glider. Based upon the Hawk pilot's report, this TI cued them to concentrate their lookout forward, allowing them to visually acquire the Nimbus and avoid it, albeit with significantly reduced safety margins.

During the investigation of this Airprox it was discovered that whilst CAP 413 Chapter 10 Para 3.3 provides guidance on the use of ATIS, there is no military regulation that is equivalent to CAP493 Section 3 Chapter 1 Para 11 detailing the operational requirements for ATIS.

BM SM has requested the MAA to consider whether to include regulation equivalent to that contained in CAP493 Section 3 Chapter 1 Para 11, within the Military Regulatory Publication set.

HQ AIR (OPS) comments that the Hawk is relatively easy to see in a head-to-head approach due to its nose light. However, experience shows that gliders are notoriously difficult to see either from head-on or directly line astern. It is fortunate that APP gained a primary radar return and the controller had the good judgement to pass a warning to the crew, who were able to focus their lookout and gain visual in time to carry out an avoidance manoeuvre. The Hawk T Mk1 is not currently fitted with a CWS (although this is being considered by HQ Air) and so was unable to detect the presence of the glider (using Mode C/S) by on-board electronic means.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequency, radar video recordings, reports from the air traffic controller involved and reports from the appropriate ATC and operating authorities.

The Hawk pilot had only requested a BS but it was clear that the mentor and trainee manning APP had detected the presence of gliders in the vicinity, recognised that a close quarters situation might develop with the Hawk and wisely passed a warning to the crew about the Nimbus glider. The BM SM report had observed that APP had discharged their responsibilities under a 'Duty of Care' by providing accurate TI on the glider; the Board recognised this was good 'controllership' and commended the controllers for their appreciation of the developing situation, as the warning was passed even before the Hawk was positively identified. Nevertheless, it was apparent that APP was unable to include any level information from the Nimbus' Mode C within this warning. The Board was dismayed that although the glider was fitted with Mode S/C [one of only two Airprox ever assessed by the Board which evinced such fitment to a glider] the unserviceable data-link between the remote SSR head at Linton-on-Ouse and Leeming ATC had denied the controllers the Nimbus' Mode C data. The radar recording shows that the glider was descending a mere 300ft above the climbing Hawk when the TI was transmitted; if the glider's Mode C level had been included with the warning passed to the Hawk crew it would have reinforced the potential for a close quarters situation with the reported traffic. Having painted as full a picture as was available to APP at the time, the controller's warning was incomplete but it did alert the Hawk crew to the impending danger and focussed their lookout; unfortunately they were unable to spot the Nimbus glider until two ac had flown into close quarters. The HQ Air (Ops) Member's view was that having received TI, a bold pre-emptive turn by the Hawk pilot might have avoided the difficult head-on aspect of the encounter; although the Member acknowledged the limitations of passing accurate azimuth information, an indication that the contact was slightly L of the nose might have persuaded the pilot against the slight L turn shown on the radar recording and instead instilled in the PIC the need for more robust action. As it was, this slight L turn seemed to the Board to have the unfortunate result of taking the Hawk closer to the reported traffic. The Board was keenly aware of the poor visual conspicuity of gliders and here the Nimbus glider would have been very difficult to see head-on, with its small frontal area and virtually no crossing motion to draw attention to it. Nevertheless, the Board concluded that part of the Cause was a late sighting of the Nimbus glider by the Hawk crew.

The Nimbus pilot reports that he had first seen the Hawk about 1nm away, when it was turning to avoid his glider, which suggested that either the Hawk crew had initiated their avoiding action slightly earlier than reported or the glider pilot had first seen the Hawk somewhat closer. A glider pilot Member agreed with the HQ Air (Ops) comment that the Hawk nose light was a very effective aid to conspicuity when seen head-on and this should have allowed the Nimbus glider pilot to spot the small jet more easily. However, if the Nimbus pilot had sighted the Hawk at 1nm, a pilot Member suggested that he might have assisted his own glider's conspicuity to the Hawk pilot by manoeuvring and thereby presenting a greater surface area. The glider pilot Member stressed the speed differential and relative manoeuvrability of the glider compared to the jet and with a combined closing speed of 420kt the Nimbus pilot was certainly at a disadvantage when trying to get out of the way of the Hawk. Furthermore, the glider pilot reports himself that he did not have time to take any action. The Board concluded therefore that the Nimbus pilot was unable to affect the outcome and this was effectively, a non-sighting on his part, which Members agreed was the other part of the Cause.

Although the Hawk pilot had seen the glider at a late stage, he managed to take effective avoiding action by bunting and rolling R, passing the glider with <100ft horizontal separation and about 10ft vertically below it he reports. For his part, the Nimbus glider pilot assessed the Hawk passed by 30-40ft below and <100yd away. However, the radar recording suggested that the separation was slightly more at 100ft vertically, as both ac passed 0.2nm abeam each other. Nonetheless, the Members agreed unanimously that at these small distances the safety of the ac involved had been compromised.

Following their assessment of this Airprox, the HQ Air (Trg) Member briefed the Board that much work has been done to improve liaison between the operators from Sutton Bank, Leeming and Linton-on-Ouse, which may reduce such occurrences in future by increasing mutual awareness of each other's operations. Furthermore, the fitment of Power FLARM to Leeming-based Hawk T Mk1s is under consideration by HQ 1 Group.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Effectively a non-sighting by the Nimbus pilot and a late sighting by the Hawk crew.

Degree of Risk: B.