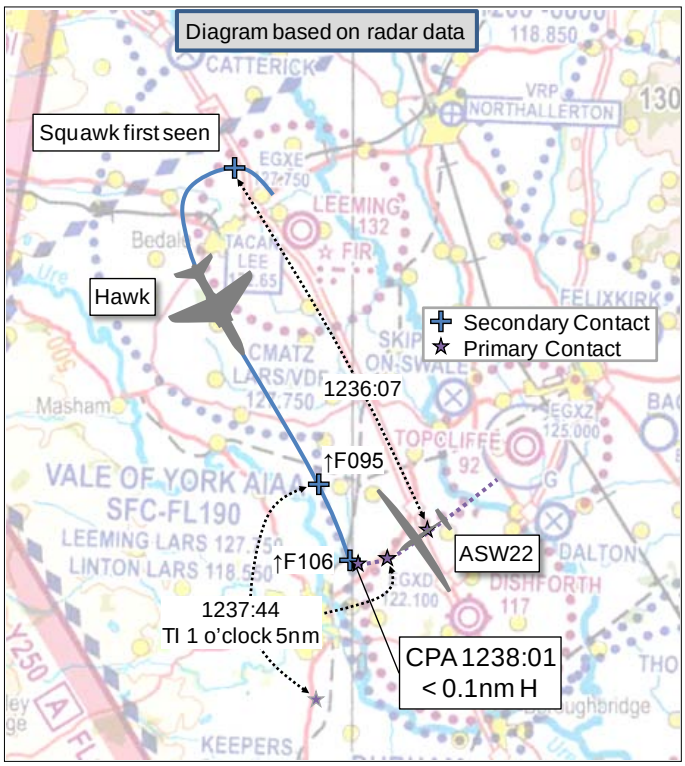
AIRPROX REPORT No 2012136

Date/Time:	4 Sep 2012 1238Z	
Position:	5409N 00130W (8nm S RAF Leeming)	
Airspace:	Vale of York AIAA (*Class: G*)	
	Reporting Ac	*Reported Ac*
Type:	Hawk TMk1	ASW22 Glider
Operator:	HQ Air (Ops)	Civ Pte
Alt/FL:	FL095	9000ft↑ (NK)
Weather:	VMC CAVOK	VMC CAVOK
Visibility:	50km	>20nm
Reported Separation:	300-500ft	500ft V/0ft H
Recorded Separation:	NK V/<0.1nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE HAWK TMk1 PILOT reports that he departed from Leeming RW34R with a L turn on to 160°, accelerating to 300kt [climbing to FL190]. He was operating in VMC under VFR with a TS from Leeming APP [386.575MHz]. The black coloured ac had strobe lights selected on along with the SSR transponder Modes 3/A and C. The ac was not fitted with Mode S or an ACAS. Passing FL060 TI was given on a Tucano, L 11 o'clock at 8nm at FL075. On passing FL070 he became visual with the Tucano in his L 11 o'clock at 3nm, as ATC called an update on its position. The Tucano turned towards him; he 'wing waggled', turned away to the R and continued to visually monitor the Tucano. He stated that this was 'probably at the expense of forward lookout'. Very shortly thereafter, ATC gave him TI on a primary radar contact in his right 1 o'clock at range 5nm with no height information. Before being able to take avoiding action, he saw a glider directly ahead, co-alt, at approximately '½ a mile' range. He manoeuvred in the vertical and passed an estimated 300-500ft above the glider. The point of minimum separation occurred about 15sec after the previous TI was given. No manoeuvre was observed from the glider which continued on a W'ly heading. An Airprox was immediately reported to Leeming ATC and the sortie continued without incident.

He assessed the risk as 'High'.

THE ASW22 GLIDER PILOT reports flying in wave after climbing from altitude 3500ft to 11000ft [QNH 1019hPa] over RAF Topcliffe. He was operating autonomously in VMC under VFR in a white glider with no external lights. The ac was not fitted with an SSR transponder or an ACAS. He stated that he was not in contact with Topcliffe radar as he was above their MATZ and in class G airspace. He flew NW over RAF Leeming and had descended to altitude 9000ft approximately 5nm W of Leeming. He did not feel the need to contact RAF Leeming as he was so far above their MATZ, but he did set the radio to frequency 133.375MHz [Leeming Zone] to 'listen in on any activity'. He heard civilian traffic 'flying low down', but no military traffic and was unsure in any case whether he would hear military traffic on that frequency. He then saw the 'light of an ac climbing rapidly towards him, below and slightly under his R wing'. He lowered his R wing to present a larger profile of his glider to the oncoming ac. He also selected full negative flap to 'drop the glider down' some 30-50ft and to increase speed. The oncoming ac was a black Hawk which rolled over the top of him and continued its flight S. He thought that this was purely a military manoeuvre as he knew there were activities to the E of the North Yorkshire Moors that day. The pilot did not feel at risk, in fact he rather enjoyed

the personal display of skill and ability shown by the [Hawk] pilot. He stated that in retrospect, given that an Airprox had been filed by the other pilot, it was a more sobering situation.

He observed that, with hindsight, it would have been better to contact 'Leeming Control' and advise them of his location, height, heading and intentions. He stated that because he has an RT license it would have been legal for him to do so but that this is not a mandatory requirement for glider pilots flying cross country and that perhaps it should be. He also observed that any mandated requirement to communicate would need to be balanced against the need to concentrate on keeping the glider airborne, particularly in light or poor soaring conditions.

After further consideration he assessed the risk of collision as 'High'.

THE LEEMING APPROACH CONTROLLER reports that he was on duty during the hour 1200-1300, with a low workload. At approximately 1240, during the handover [of the subject Hawk] to LJAO NW, [the Hawk pilot] declared an Airprox. The Hawk pilot was climbing for a POL-WALLASEY crossing, departing Leeming on a LH turn heading 160°, climbing FL190. There were also 2 tracks manoeuvring approximately 8nm S of Leeming.

He passed TI on traffic in the Hawk's L 11 o'clock position, range 7nm, FL070 descending, a possible Tucano. He called the traffic again as it was approaching '3-4 miles' range. Further TI was passed on traffic in the Hawk's 12 o'clock position at approximately 5nm range, slow moving with no height information, a possible glider. He then commenced his handover to LJAO NW. Towards the end of the handover the Hawk pilot called an Airprox, describing that he had visually acquired a glider approximately 10-15sec after the controller had called the track on his nose, and that he had climbed rapidly, passing FL100, avoiding the glider by about 200-300ft. The controller collected further information from the Hawk pilot before handing him over to LJAO NW.

He assessed the severity of occurrence as 'High'.

THE LEEMING SUPERVISOR reports that he was the ATCO I/C working Leeming TC(LARS) during the 1200-1300 lunch period. At approximately 1240 he heard the TC(RA) Controller inform LATCC(Mil) that the pilot of the ac he was handing over had just called an Airprox. Moments earlier he had heard the TC(RA) Controller pass TI to the Hawk pilot on traffic believed to be a Tucano which was working autonomously. He also heard the TC(RA) Controller call a possible Glider to the Hawk pilot before he commenced his radar handover to LATCC(Mil). All the relevant details were obtained from the Hawk pilot by the TC(RA) Controller before the handover was initiated again.

BM SAFETY MANAGEMENT reports that this Airprox occurred on 4 Sep 2012 between a Hawk departing Leeming in receipt of a TS from Leeming APP and an ASW22 glider operating VFR.

Through analysis by the Radar Analysis Cell, it was determined that the Airprox was not captured on NATS radars; consequently, this investigation has been based upon the reports of the aircrews and ATCOs involved.

[UKAB Note(1): The UKAB was kindly provided with a radar recording from Durham/Tees Valley A/D which clearly depicted the Hawk TMk1 and a number of primary contacts in and around the Topcliffe area. One of these contacts travelled SW and was coincident with the Hawk return at the time of the reported Airprox. It is therefore assumed that this contact was the subject glider. The diagram is based on radar data from this source.]

The Hawk pilot reported VMC with in excess of 50km visibility in nil Wx and no cloud. APP reported their workload and task complexity as low, with only the Hawk on frequency.

At 1236:58, APP passed TI to the Hawk pilot on an unrelated Tucano, updating this TI at 1237:28. At 1237:44, APP passed TI to the Hawk pilot on, "*further traffic, right 1 o'clock, 5 miles, similar direction, no height information, slow moving, possible glider*" which was acknowledged. The Hawk pilot reported that 'before being able to take avoiding action [Hawk C/S] spotted a glider on the nose,

co-altitude, at approximately ½ a mile'. The point of minimum separation occurred about 15sec after the first TI was given to [Hawk C/S] and therefore it was assessed that it could not have been the primary radar contact called at 5nm but additional traffic not seen on Leeming radar.

The ASW22 glider is of modern fiber-reinforced composite construction and as such would have a minimal RCS, thus significantly affecting the ability of the Watchman PSR to detect it. In this instance, the ASW22's minimal RCS, combined with its lack of electronic conspicuity, rendered APP unable to provide TI to the Hawk pilot and breached the ATM related safety barrier leaving "see and avoid" as the sole remaining barrier.

HQ AIR (OPS) comments that there has been a significant amount of liaison between the military airfield operators in the Vale of York and the local gliding community, with the aim of reducing the number of Airprox in this location. Nevertheless, without the use of electronic conspicuity measures by the gliders it is almost impossible for Air Traffic Controllers to provide TI on Gliders, due to their lack of radar conspicuity, unless RT position reporting is utilised; indeed, the ASW22 pilot admits that he should have used his RT license to contact LEE APP and appraise them of his position in the O/H of a busy training establishment. However, the lookout scan of the Hawk pilot was also compromised as he concentrated on the Tucano (that was no longer a threat), rather than the unseen Glider ahead of him.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board considered that the Hawk pilot's probable lack of lookout in the forward sector at the critical time and the glider pilot's reticence to use his radio were both important links in the causal chain that resulted in this Airprox. However, Members expressed concern with the underlying lack of coordination between the Hawk pilot's home Station and the local and very active gliding community. A civilian pilot Member noted that in his discussion with the Chairman of the largest local gliding club it became apparent that the club was engaged in active and rewarding liaison with another local RAF Station, but not the Hawk pilot's home Station. He also noted that this lack of coordination was particularly frustrating when gliders were using wave lift as the location and duration of the wave lift area could be accurately forecast and hence effective deconfliction achieved. A military pilot Member stated that military meteorological briefing information would now include wave lift location and the Board understands that the Hawk pilot's home Station is currently pursuing increased coordination with the local gliding community.

Civilian pilot Members also discussed the use of RT by glider pilots. It was noted that many gliders are fitted with radio and that 5 frequencies are allocated by the CAA for glider operational usage. These frequencies are specifically allocated such that an RT license is not required in order to use them. Members opined that this resulted in the highly undesirable situation where glider pilots had used a radio for a number of years and could be in a position to influence safety of flight, e.g. by notifying position and intentions on a local Zone frequency, but did not do so because the lack of an RT license prevented them from legally using a frequency other than those allocated. The Board noted that the effort and cost of obtaining an RT license, when there was no mandated requirement to obtain one, was an effective deterrent to glider pilots. In this particular case, the glider pilot did have an RT license and could have used the radio to notify his intentions but Members opined that he did not do so due to a lack of understanding of the likely patterns of military traffic activity in the area. Other civilian pilot Members also highlighted a perceived lack of understanding from ATS providers when responding to glider pilot RT calls. This typically manifested itself in ATC requests to the glider pilot to maintain at or not below a given level. Thus effective coordination required education of pilots and controllers as well as effective use of available technology. The CAA pilot Advisor stated that work was underway to address issues of glider pilot RT usage already commented on, and to include wider concerns such as MATZ and Class D airspace crossing.

Turning to the pilots' actions, the Board noted that the Hawk pilot was required to give way to the glider iaw RoA Rule 9 (Converging), para (a), '*flying machines shall give way to airships, gliders and balloons*'. This he did, albeit his late sighting resulted in avoiding action in order to give way. The glider pilot was commended on his actions with many Board Members expressing the opinion that the control inputs he used to change the glider's aspect and flight path were instrumental in the Hawk pilot's visual detection and hence the effective avoiding action.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by the Hawk pilot.

Degree of Risk: C.