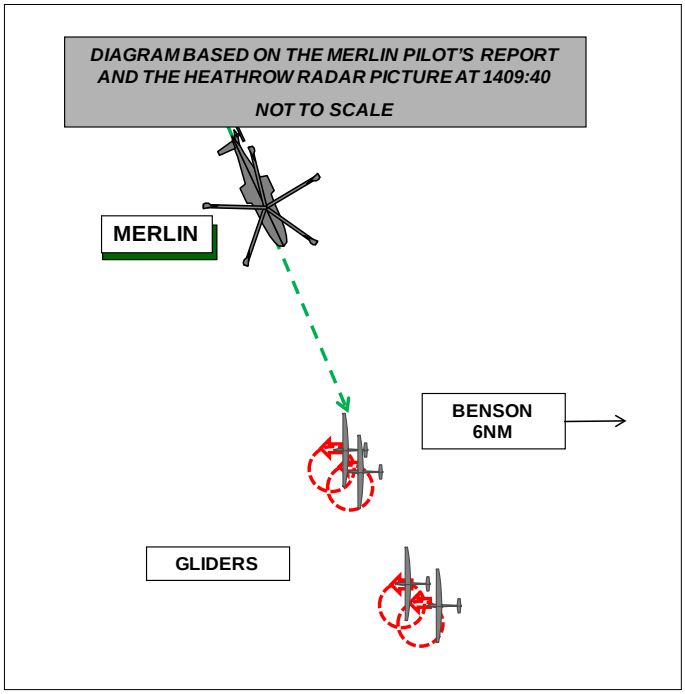
AIRPROX REPORT No 2011023

Date/Time:	28 Mar 2011 1410Z	
Position:	5136N 00114W (1nm S Didcot)	
Airspace:	Oxford AIAA	(*Class: G*)
	Reporting Ac	*Reported Ac*
Type:	Merlin	Untraced Glider
Operator:	HQ JHC	NK
Alt/FL:	1900ft (QFE 1009mb)	NK
Weather:	VMC CLBC	NK
Visibility:	8km	NK
Reported Separation:	0ft V/50m H	NK
Recorded Separation:	NK	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE MERLIN PILOT reports flying a green ac with all lights switched on, recovering to Benson in slightly hazy conditions, but flying out of sun, in receipt of a TS from Benson APP. While under radar vectors, heading 170° at 120kt, about 1nm S of Didcot the crew identified a glider due W, slightly above them about 400m away; they immediately informed Benson APP which was operating with SSR only. Thirty sec after first identifying this glider another was seen passing down the LH side, descending through their height (1900ft) in a LH turn to the N, within about 50m of their ac; the glider was seen to depart to the N. They did not take any avoiding action as the glider had descended through their height and was turning away from them.

The HP reported an Airprox to Benson on the frequency in use at approx 1410Z and the sortie continued with the ac recovering to Benson without further incident. He assessed the risk as being high.

Despite extensive procedural tracing, the glider pilot could not be located.

UKAB Note (1): The Benson APP controller provided a report but, for brevity, it has not been included as it is essentially the same as the HQ 1GP BM SM report below.

HQ 1GP BM SM reports that this Airprox occurred between a Merlin HC3 in receipt of a TS from Benson APP, reduced due to operating SSR only and an untraced glider.

Since Benson was operating SSR-only due to planned maintenance on the Watchman radar, it was not possible for ATC to have acted as a safety barrier to this occurrence, given that the glider was non-transponding. That said, the reduction of service to SSR-only was not passed until after the Merlin pilot had informed APP of his sighting the first glider mentioned in his report; 21sec after this that the pilot declares the Airprox with the second glider.

The operation of non-transponding ac combined with operating SSR-only leaves one final safety barrier; namely 'see and avoid'. However, this final barrier is prejudiced when the visual acquisition task is made more difficult by reduced visibility and the small size and white colour scheme of the target ac.

UKAB Note (2): The recording of the Heathrow 10cm radar shows the Merlin throughout tracking 170°, squawking with Modes C and elementary Mode S, initially at an alt of 3000ft. The ac is tracking towards two intermittent primary only contacts manoeuvring in its 12-1230 position. At 1409:40 the helicopter commences a slow descent just as both the primary contact disappear from radar in its 1230 position at about 1.5 and 2nm respectively (there are another 2 gliders at a distance of 4nm in the 12 o'clock). The Merlin passed through the approximate position that the closest glider last painted at 1409:59 at an alt of 2600ft. The primary only contact reappears at 1nm W of the Merlin's track at 1410:37. There are other gliders in the area.

HQ JHC comments that It is not possible to ascertain when, and indeed if, the conflicting glider saw the Merlin, but in either case, a reported separation of 50m is clearly very concerning, whether verified by radar recording or not.

From the HQ 1GP BM SM comment, it appears that the Merlin was unaware that the TS being provided was reduced until after he had reported the sighting of a gilder in reasonably close proximity. The absence of primary radar was probably a factor in this incident. It is also clear that the final safety barrier - as identified by HQ1GP BM SM – was see and avoid but in the event, the Merlin saw the glider too late to take any avoiding action.

HQ JHC considers that a mid-air collision with a glider or light coloured small ac is a very significant risk- this was the second Airprox in that area in the space of a month. This is a particularly problematic area in terms of gliding activity and Benson instrument traffic - which is subject to both geographical and airspace constraints and the necessity to maintain aircrew currency and competency in instrument flying and approaches. These issues were brought sharply into focus last year, during NOTAMed gliding competitions and/or when the radar service being provided by Benson was derived from SSR-only information since the Watchman radar had a long-term unserviceability.

This Airprox indicates that the local gliding community may not be fully cognisant of the flying operations at RAF Benson – it could be considered unwise for a glider pilot to choose to operate in that particular piece of airspace if the pilot understood that a Puma or Merlin ac was very likely to be operating there, whilst knowing that the glider itself is difficult to see. It appears that the risk acceptance differs between the gliding community and other aviators.

It is widely recognised that the small size and white colour scheme of gliders (and other small light ac) makes visual acquisition extremely difficult, whilst glider construction also means that they are difficult to see on radar. In the short term, JHC ac operating in the RAF Benson area are encouraged to try to obtain a primary radar-derived TS when this is practical. In the medium term, JHC HQ supports the initiative by RAF Benson that this specific problematic airspace be mandated as 'transponder-equipped ac only' which would enable all ac to be seen on both primary and secondary radar whether they are radar-reflective or not.

In addition to efforts to improve the airspace issue, JHC HQ requests that the UK Airprox Board recommends the fitting of transponders to all gliders and similarly small, light coloured general aviation ac, in order to reduce both the frequency of Airproxes and the likelihood of an actual collision (there have been 9 assessed Airproxes involving gliders and military RW ac in the last 3 years). Further, JHC HQ requests that the UK Airprox Board undertake to educate the glider community on the risk of mid-air collision in the vicinity of military aerodromes.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

[Some of the discussion in this incident also applies to 2011028.]

The HQ JHC Member reported that it was concerning that the Merlin pilot was not informed that they were operating under a reduced TS, due to the primary radar being on maintenance, until after he had reported the presence of the first glider to APP; had he known, he would have been aware that information on gliders would not have been forthcoming from ATC.

A military Advisor, familiar with both fast-jet and gliding operations opined that there was a widespread lack of understanding of gliding operations among both military aircrew and ATC staff; he urged closer co-operation to foster mutual understanding. He went on to say that the MoD is trying to provide liaison staff at major gliding competitions so that up-to-the-minute information about movements/routes can be relayed to military airspace users. Noting the HQ JHC comment regarding the high military traffic levels around Didcot, a gliding Member stated that it was *'the busiest area in Britain'* for gliding traffic due to precisely the same airspace constraints that funnel both N/S traffic and E/W traffic through the area; the power station is a particular focus as it often provided good thermals.

There was genuine concern from both military and gliding Members that despite a previous mid-air-collision in the area, little had been done to integrate or separate the traffic (on the day of the mid-air collision there had been in excess of 100 gliders transiting the area). Unlike other areas where there were more obvious solutions: not all traffic in the area is radio equipped, but for ac that are fitted with radios and for those pilots with RT licences, Benson is not necessarily the obvious station to call (Farnborough/Brize Norton being the LARS providers); many gliders from several often distant airfields N, S, E and W of the area transit through the area and, finally but importantly, Benson instrument patterns are also constrained by the airspace and RW direction.

A military controller Member reminded the Board that, notwithstanding that the Watchman primary radar was unavailable on this occasion, gliders are very difficult for controllers to 'see' and react to as they are often 'invisible' on ATC radars; he suggested that more effort be put into inexpensive technological solutions. A gliding Member suggested that such a solution already exists, namely FLARM, which is widely used by gliders. In his opinion FLARM was a more practical solution for gliders' traffic awareness and collision avoidance than Modes C and S transponders. It was agreed, however, that neither the CAA nor the MoD are likely to pursue this course unless it is more widely acceptable and used universally, preferring the (currently) ICAO agreed Mode C/S solution.

Notwithstanding the difficulty of seeing gliders on primary radar, the Board also queried the necessity for conducting maintenance on the primary radar during hours of the day when gliding activity was likely to occur. Members agreed that maintenance should schedule for hours when there were likely to be the fewest number of aircraft without transponders airborne.

The DAP Advisor informed the Meeting that there is an established procedure for proposing and agreeing airspace changes and, as far as he was aware, no application had been made for a TMZ (Transponder Mandatory Zone) in the Benson area; he went on to say that should HQ JHC make such an application it would be handled in the normal manner with all interested parties being consulted. That being the case, the Board noted the HQ JHC recommendation but could neither support nor reject it and advised an application through the correct channels.

Regarding the proposed recommendation regarding the mandatory fitment of transponders to gliders and GA aircraft, the Board noted that in this incident, since Benson were operating 'SSR only', had the glider been squawking, Benson would have been able to pass TI to the Merlin crew allowing them to take avoidance. However, it was pointed out that the Board had made a similar recommendation following an Airprox between a glider and a Tornado (Airprox 2005 186): 'The CAA should continue to promote with renewed urgency the production of a lightweight transponder and, when available, consider mandating its carriage and use in gliders'. This recommendation was agreed but the consultation process did not result in legislation but increased the areas where they are mandatory, albeit with only small changes in Class G airspace. Although some Members were in agreement with the JHC recommendation, others were not and, since this aspect had been recently reviewed by the CAA, the Board could not support the recommendation. [UKAB Note (3): The Board was more or less equally divided regarding mandatory use of transponders].

The JHC Member stated that, in view of their concern over the degree of risk they perceive of a mid-air-collision between one of their ac and a glider or light ac, HQ JHC is looking at all measures to mitigate this risk; they are, however, anxious that the GA/Gliding community should co-operate in ensuring that the airspace is available for safe and flexible use by all operators.

The Board was concerned that a (at least one) glider had flown so close to a large helicopter and apparently chosen not to make a report. Members agreed unanimously that it was inconceivable that the glider pilot neither saw nor heard the Merlin (it was seen to discontinue thermalling and depart to the N). A Member noted the great advances made in the reporting culture among professional aviators and opined that, on the evidence of this incident, the benefits of such a culture do not appear to have been realised by glider pilots. The Gliding Member undertook to discuss the topic with the BGA officers.

Several different causes were considered but, since there was no report from the glider pilot giving his perspective, Members were forced to conclude, somewhat unsatisfactorily, that the incident had been a conflict in Class G airspace. Regarding the degree of risk, since the Merlin pilot did not see the glider until it was too late to initiate any meaningful avoidance, and in the absence of a report from the glider pilot, it was agreed unanimously that there had been an erosion of normal safety margins.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G Airspace between the Merlin and an untraced glider.

Degree of Risk: B.