

AIRPROX REPORT No 2016091

Date: 24 May 2016 Time: 1223Z Position: 5142N 00105W Location: 12nm NNE Benson

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Hawk	Glider
Operator	HQ Air (Ops)	Unknown
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	NK
Service	Traffic	
Provider	Benson Zone	
Altitude/FL	4000ft	
Transponder	C	
Reported		
Colours	Black	White
Lighting	Strobe, Nav	NK
Conditions	VMC	
Visibility	>10km	
Altitude/FL	4000ft	
Altimeter	NK	
Heading	NK	
Speed	230kt	
ACAS/TAS	Not fitted	
Alert	N/A	
Separation		
Reported	200ft V/0nm H	NK
Recorded		NK



THE HAWK PILOT reports that he was tasked to perform a flypast at RAF Halton. This is a frequent task with associated standing orders. He had planned to hold 4nm NE of Benson to run-in to RAF Halton on a NE heading. He had submitted a request to Low-level Booking Cell (LLBC) for an appropriate NOTAM to be published but this was declined. During the transit to RAF Benson at 4000ft agl, the crew were in receipt of a Traffic Service (reduced). The controller had called glider traffic to the crew, who were looking in their 8 o'clock where they saw 2 gliders slightly lower and at 2-3 miles. The front seat pilot then saw a white glider directly on the ac nose at approx a quarter of a mile and around 50ft below; he immediately pulled up taking avoiding action. The glider passed directly under the ac with approx 200ft vertical separation. No traffic information had been received on this last glider. The crew decided to descend to 1000ft agl as the gliders were all in the vicinity of RAF Benson at 2000 - 3000ft. It is the crews recommendation that LLBC seriously consider allowing this activity to have the protection of a NOTAM. This would only require a relatively small area for a short period - 15mins - but importantly would have given the gliders awareness of the fast-jet activity.

He assessed the risk of collision as 'Medium'.

THE GLIDER PILOT could not be traced.

A SECOND GLIDER PILOT reports that his flight on that day included a transit of the Benson MATZ from northeast to southwest remaining clear of the ATZ. He was in contact with the Benson controller having requested and received a MATZ transit approval and he was squawking an assigned transponder code; the controller was talking to the Hawk and several other aircraft at the time. The Hawk, he remembers, was on track for Halton. The controller advised him of the Hawk traffic while he was in the Northern stub; he acknowledged the traffic report and sometime later saw what he assumed to be a fast jet moving right to left at 11 o'clock low. There was one other glider that he saw in the same area at around this time.

THE BENSON ZONE CONTROLLER reports he was working at medium intensity and medium complexity. The Hawk free-called approximately 25nm to the north east of Benson, stating that they had lost communications with Swanwick Mil. He placed the Hawk under a Traffic Service, limited due to operating SSR only. He was also controlling a Glider approximately 5 miles north of Benson operating under a Basic Service. He passed reciprocal Traffic Information to the glider multiple times regarding the Hawk. He then handed the Hawk over to Benson Radar. He was taken off console 30 minutes later with no awareness that an Airprox had occurred.

He perceived the severity of the incident as 'Low'.

Factual Background

The weather at Benson was recorded as follows:

METAR EGUB 241150Z 04012KT 9999 BKN045 15/05 Q1021 BLU NOSIG=

Analysis and Investigation

Military ATM

Portions of the tape transcripts between Benson Zone, Benson Radar, the Hawk and the Glider are below:

From	To	Speech Transcription	Time
Hawk	Zone	"Benson Zone this is [Hawk c/s] requesting traffic service."	12:15:50
Zone	Hawk	"[Hawk c/s] Benson Zone pass your message."	12:15:54
Hawk	Zone	"Currently thirty miles north east of you I was talking to Swanwick but I must have lost contact with them, at four thousand feet request traffic service, ****."	12:15:57
Zone	Hawk	"[Hawk c/s] roger err if you squawk three six zero three please."	12:16:05
Hawk	Zone	"Three six zero three."	12:16:09
Zone	Hawk	"[Hawk c/s] you are identified four thousand feet traffic service reduced due to operating SSR only and err request your pressure that you're operating on?"	12:16:28
Zone	Hawk	"[Hawk c/s] roger err probably shortly going to hand you over to Brize Norton due to operating SSR only here at Benson but err maintain this frequency."	12:16:50
Glider	Zone	"Benson Zone [Glider c/s] for MATZ penetration."	12:18:38
Zone	Glider	"Station calling Benson err say again your callsign and pass your message."	12:18:55
Glider	Benson Zone	[Glider c/s] out of Dunstable, tracking to Marlborough currently err seven miles north of your zone tracking to Marlborough request transit through northern stub.	12:19:00
Benson Zone	Glider	[Glider c/s] roger standby.	12:19:15
Benson Zone	Hawk	[Hawk c/s] traffic left eleven o'clock five miles err crossing left to right behind indicating one thousand one hundred feet below.	12:19:22
Hawk	Benson Zone	[Hawk c/s].	12:19:32
Benson Zone	Hawk	[Hawk c/s] contact Brize radar [frequency], good day.	12:19:39
Hawk	Benson Zone	[Frequency], [Hawk c/s].	12:19:43
Benson Zone	Glider	[Glider c/s] err just understand that you're a glider and you're not motor equipped so you're just operating on thermals?	12:19:46
Glider	Benson Zone	Affirm.	12:19:54
Benson Zone	Glider	[Glider c/s] Roger.	12:19:54
Hawk	Benson Radar	Brize radar, this is [Hawk c/s], traffic service.	12:20:11

From	To	Speech Transcription	Time
Benson Radar	Hawk	[Hawk c/s] Benson radar identified, four thousand feet one zero one seven, traffic service, reduced traffic information due high controller workload.	12:20:15
Hawk	Benson Radar	[Hawk c/s]???	12:20:23
Benson Zone	Glider	[Glider c/s] could you squawk three six zero five.	12:20:23
Glider	Benson Zone	Three six zero five [Glider c/s].	12:20:28
Benson Zone	Glider	[Glider c/s] just for your awareness there is a Hawk aircraft north of you by six miles will be holding err just north of Benson operating approximately two thousand feet.	12:20:31
Glider	Benson Zone	Err roger copied.	12:20:44
Benson Zone	Glider	[Glider c/s] previously mentioned Hawk is north of you four miles tracking southbound currently one thousand feet above.	12:21:11
Benson Radar	Hawk	[Hawk c/s] traffic left 10 o'clock, 3 miles, crossing right left indicating one thousand one hundred feet below.	12:21:53
Hawk	Benson Radar	One zero two two set pirate two four....and what's the best height for to avoid other traffic to hold at between Chalgrove and the M forty please?	12:22:36
Benson Radar	Hawk	[Hawk c/s] the only traffic that is known to me at this time is currently east of you indicating nine hundred feet below you.	12:22:47
Hawk	Benson Radar	[Hawk c/s] that's copied there's at least two gliders there.	12:22:55
Benson Radar	Hawk	[Hawk c/s] roger if you hold in the vicinity of Chalgrove I can take you down to eh....two thousand four hundred feet on one zero two two.	12:22:59
Hawk	Benson Radar	Standby just coming up to a glider.	12:23:05
Hawk	Benson Radar	Just be aware, [Hawk c/s] there's various gliders in your stub to the north east.	12:23:24
Benson Radar	Hawk	Hawk thank you	12:23:30
Hawk	Benson Radar	If you're happy I'm gonna come down to a thousand feet hopefully I'll be lower than them.	12:23:34
Glider	Benson Zone	[Glider c/s] confirm squawk three six zero five and err MATZ penetration.	12:23:48
Benson Zone	Glider	[Glider c/s] affirm three six zero five is the squawk, MATZ penetration approved, the previously called hawk traffic is now south of you by two miles tracking north indicating err one thousand feet below.	12:23:54
Glider	Benson Zone	Understood, err Hawk is visual.	12:24:04

At 1221:20 (Figure 1), The Hawk is travelling in a South Westerly direction at 4000ft under a traffic service (reduced due to high controller workload) with Benson Radar. At this time the Benson primary radar was not operational and Benson Radar was working from the Brize Norton ATC control room in order to use both Primary and Secondary radars. Benson Zone was still operating from Benson with SSR only. The reporting glider was working Benson Zone and (although not required) was passed traffic information about the Hawk to the North.

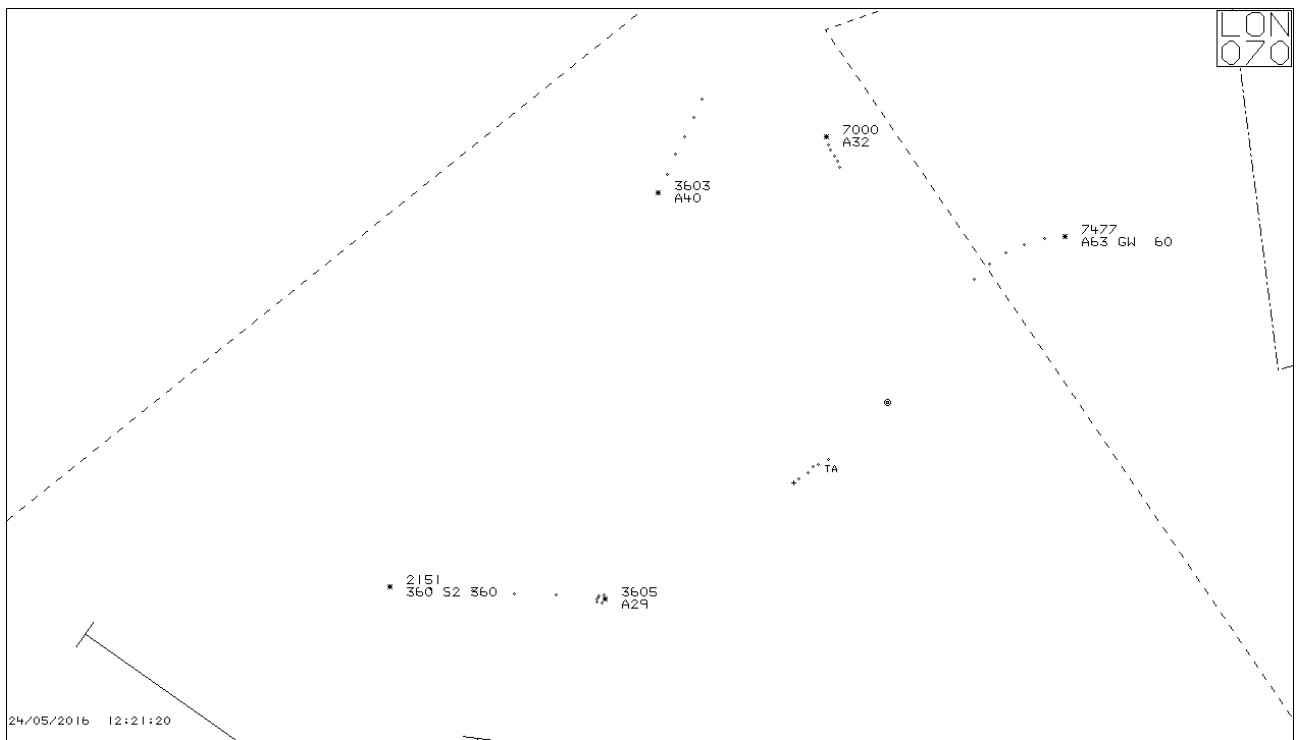


Figure 1: Geometry at 1221:20 (Hawk squawking 3603; glider squawking 3605, note primary contact to the NE of 3605 squawk).

At 1221:53 (Figure 2), The Hawk is passed traffic information about the glider to the South. *'[Hawk c/s] traffic left 10 o'clock, 3 miles, crossing right left indicating one thousand one hundred feet below'*.

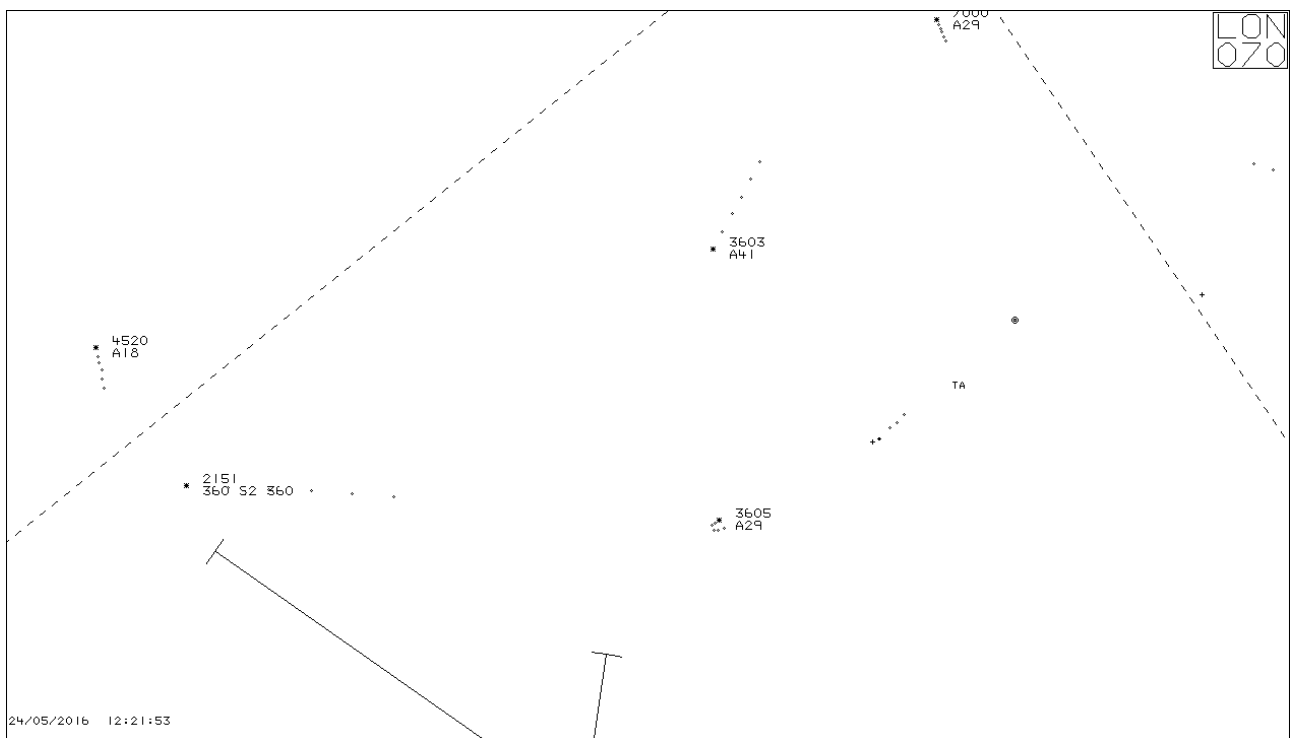


Figure 2: Geometry at 1221:53 (Hawk squawking 3603; glider squawking 3605, note primary contact to the NE of 3605 squawk).

At 1222:55 (Figure 3), The Hawk informs the controller '*[Hawk c/s] that's copied there's at least two gliders there*'. The radar replay indicates the squawking glider and another primary contact to the east, and this concurs with the pilot's report that they were looking to the left and spotted two gliders in their 8 o'clock position, slightly lower, at 2-3 miles.

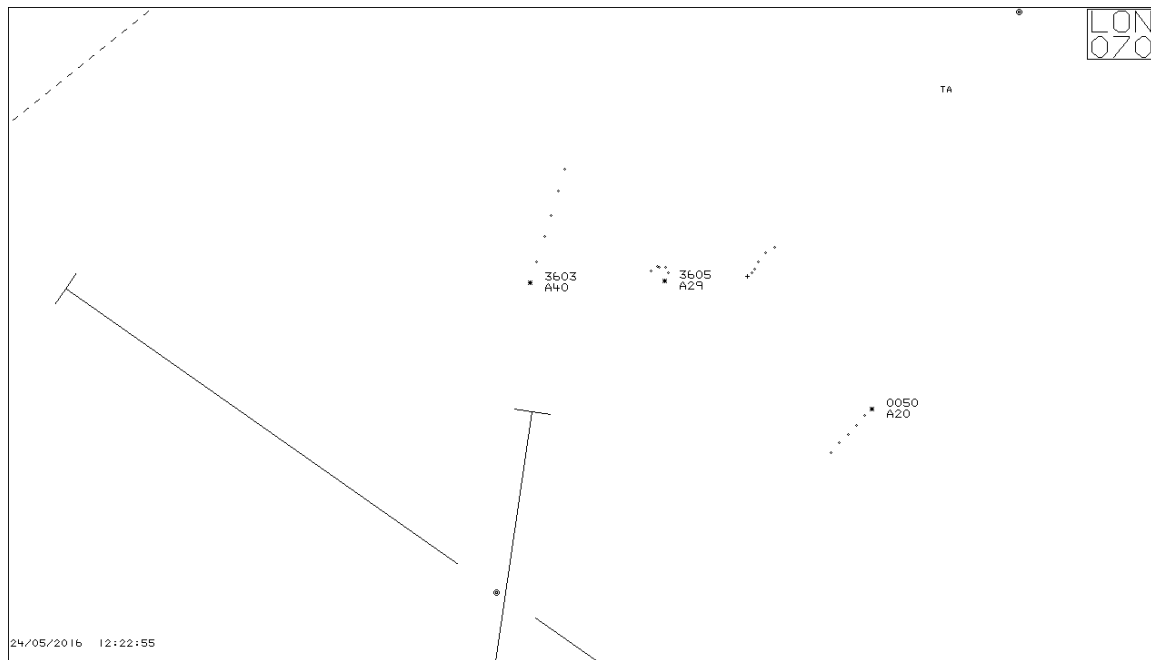


Figure 3: Geometry at 1222:55 (Hawk squawking 3603; glider squawking 3605, note primary contact to the E of 3605 squawk).

At 1223:05 (Figure 4), The Hawk informs the controller '*Standby just coming up to a glider.*' This correlates with the pilot's report of seeing a glider on the nose at quarter of a mile and approximately 50ft below. The radar replay shows no primary contact at this time in the immediate vicinity of the Hawk. From the information available this is when the Airprox most likely occurred.

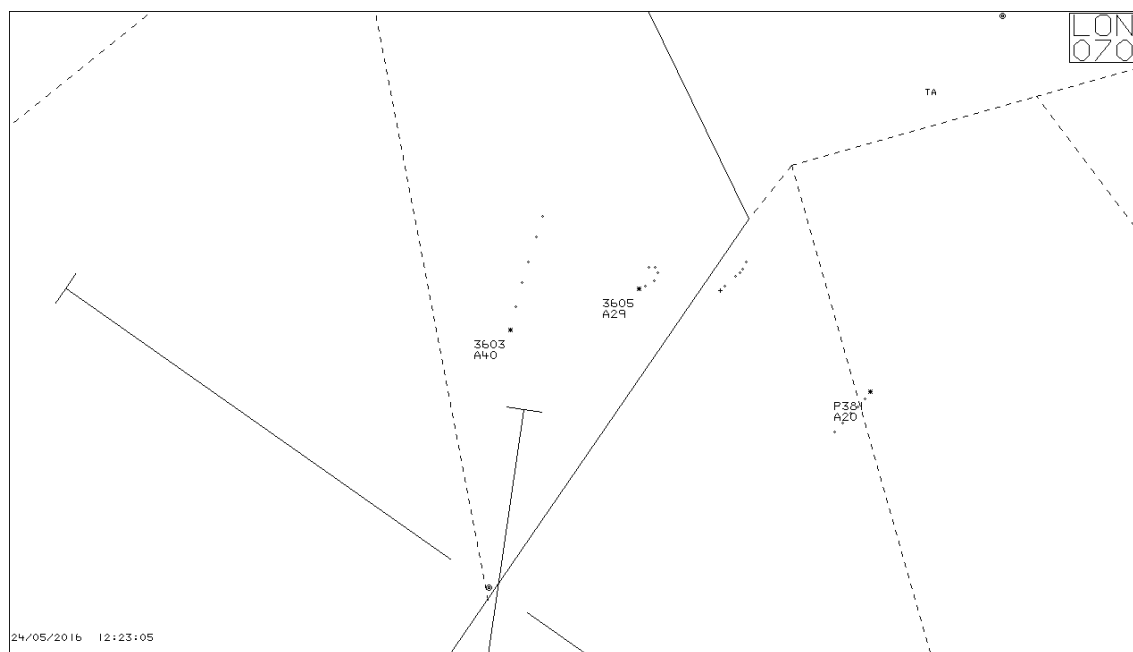


Figure 4: Geometry at 1223:05 (Hawk squawking 3603; glider squawking 3605, note primary contact to the E of 3605 squawk).

At 1223:14 (Figure 5), the mode C on the Hawk indicates a climb of 300ft (from A40 to A43), and shows the avoiding action climb from the pilot.

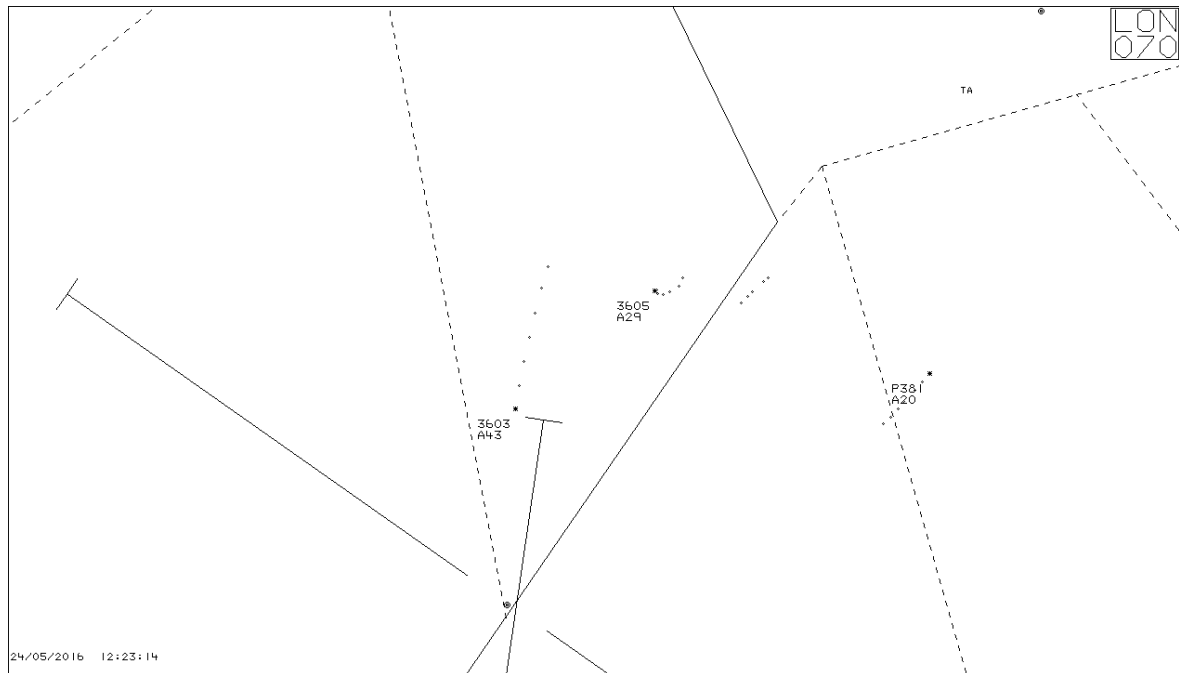


Figure 5: Geometry at 1223:14 (Hawk squawking 3603; glider squawking 3605, note primary contact to the E of 3605 squawk).

Post the Airprox, the pilot informed the controller *'Just be aware, [Hawk c/s] there's various gliders in your stub to the north east'*. The Hawk then descended to 1000ft to remain clear of the gliders.

The Hawk pilot reported trying to submit a NOTAM to the Low Level Booking Cell regarding their activity pre-flight; however, his request was declined. The pilot was in receipt of a Traffic Service throughout the incident and was passed accurate Traffic Information from Benson Zone and Radar. The Traffic Information allowed the Hawk pilot to acquire two gliders visually; however Traffic Information on the glider involved in the Airprox was not passed. The replay indicates that there was no radar return in the immediate vicinity of the Hawk at the time of the Airprox. The pilot reported the perceived severity as medium.

The Glider pilot who reported the incident informed Benson Zone of his position and was able to squawk, thus allowing the controller to improve the situational awareness of other aircraft on their frequency. This is good practice around a MATZ, and the controller was able to pass traffic information to the Hawk. The data gathered suggests that the reporting glider pilot was not the glider involved in the Airprox.

At the time of the Airprox the Primary radar at Benson was unserviceable and their procedures meant that the Benson Zone controller was working SSR only (located at Benson) whilst the Benson Radar controller was working from Brize Norton in order to have primary and secondary radar. This procedure is used in order to continue operations and mitigate the risk of MAC. The Benson Zone controller reported that they were working at medium intensity and complexity and that the Hawk had free called and was placed under a Traffic Service, limited due to the unit operating SSR only. The glider pilot who reported was under a Basic Service on the Benson Zone frequency, was squawking, and had been passed traffic information on the Hawk. The Hawk was handed over to Benson Radar by Benson Zone prior to the Airprox. Working SSR only, the Benson Zone controller would only have been able to pass traffic information on transponding aircraft. By handing the aircraft to Benson Radar (who had both primary and secondary radar) the controller offered the best possible service.

The Benson Radar controller, who was based at RAF Brize Norton, provided the Hawk with a Traffic Service, which was reduced due to high controller workload. The controller reported workload was high and reasonably complex, with numerous primary contacts to the north believed to be gliders. Traffic information was passed to the Hawk on the squawking glider on a number of occasions, and the controller was prioritising traffic calls on the greatest threat in order to not overload or confuse the pilot. The omission of further traffic information prior to the Airprox would indicate that the glider involved was not painting on the radar screen. The controller reported the severity of the incident as medium.

The Benson ATC Supervisor reported that the unit's workload was high as there was a station crash exercise in progress. The Supervisor was not monitoring the Zone frequency at the time and they were operating SSR only with Benson controllers at Brize. The Hawk was handed to the Benson controller at Brize as they had use of both radars.

The primary barrier for the Hawk in this instance was 'see and avoid'. The Benson Radar controller was unable to pass traffic information on the glider because it was more than likely not showing on their radar screen.

UKAB Secretariat

The Hawk and Glider pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard¹. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right². If the incident geometry was converging then the Hawk pilot was required to avoid the glider, which he did. Given that it is unknown if the Glider was tracking straight ahead or circling, the Hawk pilot's action, a climb to avoid the Glider, was probably the most suitable course of action.

Comments

HQ Air Command

This incident was the subject of a detailed unit investigation which included reference to extant procedures and guidelines and interviews with those individuals involved. The Benson Zone controller was working SSR only, meaning that Traffic Information (TI) could only be passed to the Hawk on contacts that were transponding; whilst TI was passed on a MATZ crossing glider, it appears that the subject glider was effectively invisible to any of the controllers involved (those at Benson on SSR only but with a FLARM display, or those at Brize Norton with both primary and secondary radar but no FLARM display) so the Hawk crew could never have been alerted to its presence by ATC. Furthermore, TCAS/TAS would be ineffective in this instance due to the non-squawking glider; it is not known if the untraced glider was FLARM-equipped but there is no evidence to suggest that the glider was showing on the FLARM display at Benson (noting that this display was not available to the controllers operating at Brize Norton).

Turning to the subject of a NOTAM, it is the contention of the unit that flypast activity in the vicinity of RAF Halton is best supported by a NOTAM warning other users of the presence of a fast jet in an area otherwise unfrequented by that type of aircraft. This is now the subject of a formal recommendation and engagement will take place between the RAF and AUS.

It seems that the only viable barrier to MAC in this instance was lookout, and the poor visual conspicuity of white gliders is well documented. As mitigation to this, the unit involved has decreed that both the front and rear cockpits be occupied for all RAF Halton flypasts as significant glider and GA activity can be expected. Allocation of lookout sectors form part of the mission briefing and authorisation process and, thankfully, the handling pilot saw the glider in time to take effective action to increase separation.

¹ SERA.3205 Proximity.

² SERA.3210 Right-of-way (c)(1) Approaching head-on.

Finally, the efforts of the MATZ crossing reporting glider pilot to highlight himself to ATC and other airspace users through the judicious use of radio and transponder, are to be commended. Whilst his was not the Airprox glider, it does show that the use of these means is a viable MAC mitigation and should be encouraged wherever possible.

BGA

We commend the non-Airprox glider for his helpful report and proactive contact with Benson. It seems from the Hawk report that the Airprox glider was operating outside the MATZ.

Summary

An Airprox was reported when a Hawk and a Glider flew into proximity at 1223 on Tuesday 24th May 2016. The Hawk pilot was operating under VFR in VMC and in receipt of a Traffic Service from Benson.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilot of the Hawk aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board began by discussing the merits of the request for a NOTAM for the Hawk flypast at Halton, and the general agreement was that because the Hawk was just another single fast-jet aircraft in Class G airspace, it would not have provided much additional protection given that other airspace users, although now aware of the Hawk's specific activity and timings, would be unlikely to modify their activities given the potential for routine encounters with other fast-jet aircraft at any time.

The Board then went on to discuss the situation regarding Benson Radar operating from Brize Norton. A Military Board member explained that this was part of Benson's Business Continuity 'Bolthole' Plan that is implemented when operating SSR only; the rationale was that, with the high numbers of aircraft transiting through the airspace, many without transponders, Bolthole ensured that the level of Air Traffic Service was not degraded to an unacceptable level for the aircraft who were receiving a service from Benson. Unfortunately, unlike Benson, Brize Norton did not have a FLARM installation and so this removed an element of situational awareness from the Benson Radar controller. Incorrect FLARM information in ATC is derived from Glider Net on a computer screen not a dedicated FLARM unit and so having a FLARM receiver would not necessarily make any difference at Brize Norton. Board members discussed how Benson used FLARM to enhance the ATCO's situational awareness regarding the high numbers of gliders that transit the area. The Military Board member went on to explain that this information is only used for generic planning and has not been certified as a means of identifying gliders or providing accurate Traffic Information to other aircraft due to the un-assured data derived from the internet as a means of data gathering, rather than having a designated FLARM receiver at Benson. Some members suggested that, due to the plan to redeploy ATC to Benson in times of reduced radar capability, Brize Norton might investigate installing a similar FLARM monitoring system for use by Benson controllers. All that being said, members were clear to point out that although FLARM may have helped in these circumstances, there was no evidence that the Glider involved in this Airprox was FLARM equipped.

Turning to the glider pilot who had reported, the Board were grateful for his contribution in the absence of identifying the Airprox glider pilot. The Military Board member in particular praised the reporting Glider pilot as a good exemplar of best practice given his contact with the relevant ATC authority for a MATZ crossing service, and his use of his transponder to ensure greater visibility to both ATC and other airspace users. Other members agreed, it was striking that in his forward-thinking he had avoided an Airprox himself and had provided ATC with significant situational awareness of his activities.

The Board then turned to the circumstances of the Airprox itself, and some members wondered if the Hawk crew had both been looking at the gliders that ATC had alerted them to in their 8 o'clock; whilst this was not the case as the crew had divided their attention this is still a salutary reminder of the benefits of sectorizing crew scans so that pilots were looking in different areas rather than focusing on the same point. Unfortunately, without any information from the glider pilot, it was impossible to determine his perspective of the incident or what he had seen. Notwithstanding, the Board agreed that the Hawk pilot had probably seen the glider ahead as soon as could reasonably have been expected, especially if it was head-on, and had taken appropriate action to resolve the confliction. As a result, the Board agreed that the incident was best described as a conflict in Class G resolved by the Hawk pilot. Turning to the risk, the Board debated at length whether this was a Category B incident (safety much reduced below the norm), or a Category C incident (timely and effective actions were taken). In the end, they agreed that, by a whisker, this was a Category C incident given that, notwithstanding the relative closure rate of the Hawk travelling at 230kts, the Hawk pilot was able to generate a significant miss distance of circa 200ft vertically which would probably not have been possible if his actions had been taken very close to the glider.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G resolved by the Hawk pilot.

Degree of Risk: C.