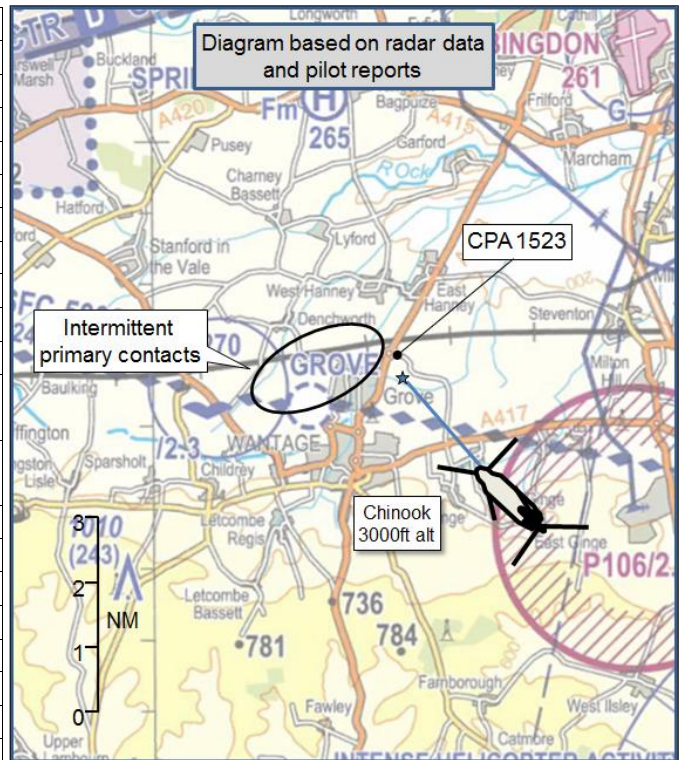


AIRPROX REPORT No 2016090

Date: 24 May 2016 Time: 1523Z Position: 5137N 00124W Location: 9nm SE Brize

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Chinook	Ventus
Operator	HQ JHC	Civ Pte
Airspace	Lon FIR	Lon FIR
Class	G	G
Rules	VFR	VFR
Service	Traffic	None
Provider	Brize	
Altitude/FL	3100ft	NK
Transponder	A, C, S	Not fitted
Reported		
Colours	Green	White, Red wingtips
Lighting	Strobes, Landing, Nav	Nil
Conditions	VMC	VMC
Visibility	30km	15km
Altitude/FL	3000	3300
Altimeter	QNH (1020hPa)	QNH
Heading	NW	Circling
Speed	130kt	55kt
ACAS/TAS	Not fitted	FLARM
Alert	N/A	None
Separation		
Reported	100ft V/0m H	100ft V/250m H
Recorded	NK	



THE CHINOOK PILOT reports that he was transiting towards Brecon at 3000ft and receiving a Traffic Service from Brize Radar. It was apparent from the RT that there was a lot of activity in the area and so all crew were conducting vigilant look-out. When approximately 9nm SE Brize, Traffic Information was given on traffic in the 2 o'clock, which was not sighted. Shortly afterwards the crewman shouted out that there was a glider left 9 o'clock 100ft above, 1nm away. Both pilots then looked left to spot the glider and almost immediately the RHS pilot observed a second glider straight ahead by 500m and slightly below by approximately 100ft. The glider was in a right-hand descending turn, on course to pass beneath the Chinook. It was not apparent whether the glider was taking avoiding action given the late spot by the crew. Sight of the glider was quickly lost as it disappeared under the aircraft nose.

He assessed the risk of collision as 'High'.

THE VENTUS PILOT reports that he was on a cross-country flight on a day when conditions were difficult. It was a busy day for gliding and he was on a leg routing from Somerset to Didcot. He had previously spoken to Brize radar to ascertain that the Redlands parachute site was not active. There was a strong headwind and the thermals were not reliable. There were at least 3 other gliders in his vicinity and he was looking out for them. He joined a strong thermal north of Wantage and was turning tightly, with each 360° turn taking about 30 seconds. He became aware of the sound of a Chinook approaching; he could hear the beat of the blades. Although this is not unusual in a glider, as he continued the turn the sound became much louder; the Chinook was behind him at that stage and he became very alarmed that he could hear, but not see, the Chinook. He continued the turn and saw the Chinook pass by to the West, heading NW at quite a high airspeed and around 250m away from his circular path. He judged that it was not necessary to take avoiding action but, alarmed by this, he called Brize LARS to report an Airprox, as he did so he heard the subsequent conversation

between the Chinook pilot and the controller. The Chinook pilot reported that he had seen the glider and altered course to avoid it. After landing, in conversation with the Duty Controller he decided that because the Chinook pilot had seen him and altered his path, it was not an Airprox.

He assessed the risk of collision as 'None'.

THE BRIZE LARS CONTROLLER reports that he was providing a Traffic Service to a Chinook routing towards Gloucester transiting at 3000ft. The weather was good and, as a result, the airspace was extremely congested with a high density of GA traffic and many primary only contacts which were believed to be gliders. One glider pilot had called on frequency to enquire about activity of airspace in the area, but was not receiving a service. Shortly after the Chinook came on frequency, the controller passed Traffic Information on traffic in his 2 o'clock position. At a similar time numerous GA pilots called on the frequency and, although it was hard to recall the exact sequence of events, he thought that at this time one particular GA pilot was having difficulty relaying all pertinent information and so required more transmissions than usual. He recalls that he then received a call from a glider pilot, not in receipt of a service, reporting an Airprox with a Chinook. The controller correlated its position using the DF and could see a primary contact in the vicinity of the Chinook, 11nm SSE of Brize. He relayed the information to the Chinook pilot who informed the controller that he had been visual with the glider and had taken avoiding action. On hearing this, the glider pilot was satisfied that despite the proximity, because the Chinook pilot had been visual with him, he no longer wished to declare an Airprox. Traffic Service was then limited for the Chinook due to its routing close to the Brize overhead, and it continued without any further issues. The glider pilot later contacted Brize ATC by telephone to confirm that he no longer wished to report an Airprox, and explained that he had been circling in a thermal, which may have explained the intermittent radar contact, because of the changing aspect to the radar head.

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

Factual Background

The weather at Brize was recorded as follows:

METAR EGVN 241450Z 07013KT 9999 FEW042 BKN060 16/05 Q1020 BLU NOSIG=

Portions of the tape transcripts between Brize Norton Zone, the Chinook pilot and the Glider pilot are below:

From	To	Speech	Time
Chinook[C/S]	BZN Zone	Brize Radar vortex five eight nine	15:18:50
BZN Zone	Chinook[C/S]	Chinook[C/S] Brize radar identified altitude three thousand feet set Brize Q N H one zero two zero traffic service	15:18:54
Chinook[C/S]	BZN Zone	Altitude three thousand feet on one zero two zero traffic service Chinook[C/S] and we're looking to overfly the bravo zulu november en route the er to Gloucester	15:19:01
BZN Zone	Chinook[C/S]	Chinook[C/S] you looking to overfly the bravo zulu november at er three thousand feet	15:19:14
Chinook[C/S]	BZN Zone	Affirm if possible Chinook[C/S]	15:19:17
BZN Zone	Chinook[C/S]	Chinook[C/S] you are procedurally cleared to enter controlled airspace not below altitude three thousand feet brize QNH one zero two zero overflying the bravo zulu november and onwards to Gloucester	15:22:03
Chinook[C/S]	BZN Zone	That's us into controlled airspace not below three thousand feet on one zero two zero overhead the bravo zulu november en route Gloucester Chinook[C/S]	15:22:14
BZN Zone	Chinook[C/S]	Chinook[C/S] reduced traffic information due to the limits of surveillance cover	15:23:28
Glider	BZN Zone	Brize radar gol er this is glider [C/S]	15:24:35
BZN Zone	Glider	Glider [C/S] Brize radar pass your message	15:24:42

Glider	BZN Zone	Er Glider[C/S] erm I think I've just had an Airprox with a RAF Chinook helicopter I'm just circling to the north of Grove airfield at Wantage at this time	15:24:45
BZN Zone	Glider	Glider[C/S] er roger nothing reported by the Chinook standby	15:25:00
BZN Zone	Chinook[C/S]	Chinook[C/S] message	15:25:05
Chinook[C/S]	BZN Zone	Yes Chinook[C/S] confirm we've had the er airprox with the er glider there about er nine miles to the south east of the airfield	15:25:07
BZN Zone	Chinook[C/S]	Chinook[C/S] can I confirm you were visual with the glider who reported airprox	15:28:11
Chinook[C/S]	BZN Zone	Chinook[C/S] er affirm er moving out of the way we were visual	15:28:16

Analysis and Investigation

Military ATM

At 1522:18 (Figure 1), the Chinook is to the south east of the primary contact, believed to be glider involved in the Airprox. Note there is also a primary contact due north of the Chinook, and the radar replay indicated three intermittent primary contacts in the area.

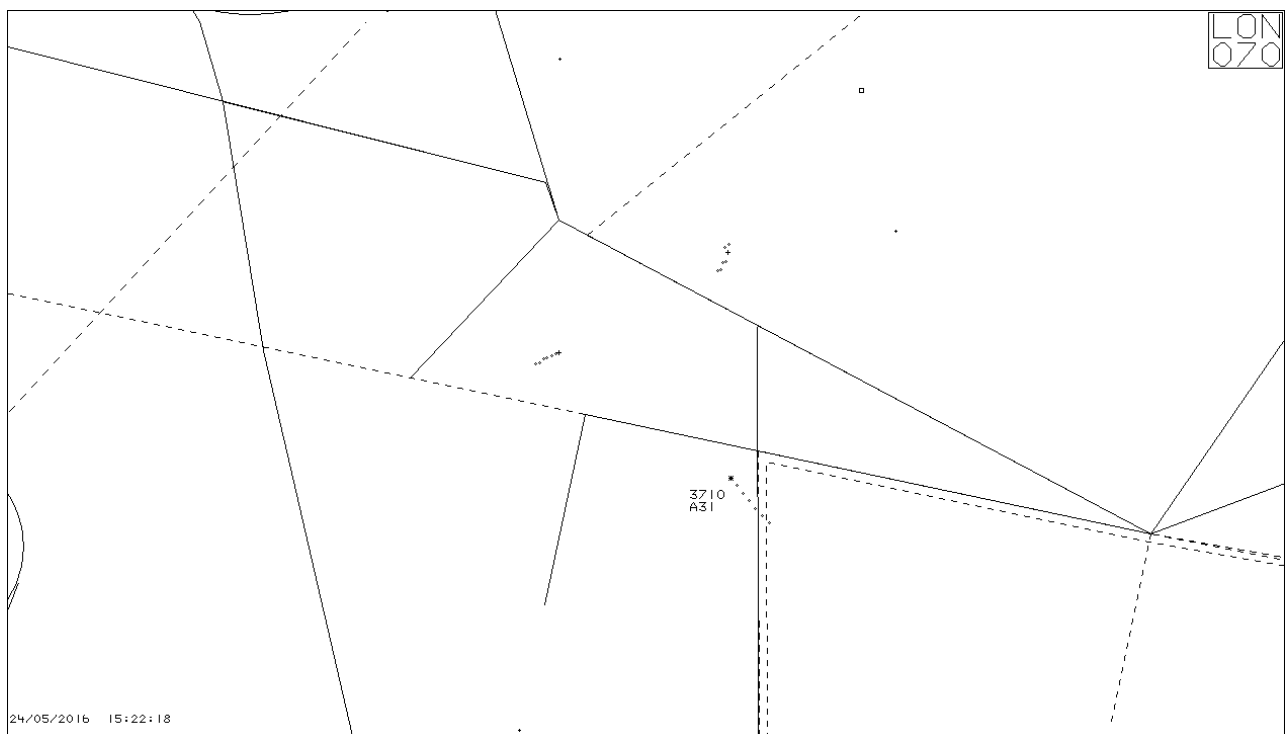


Figure 1: Geometry at 1522:18 (Chinook squawking 3710; gliders believed to be primary contacts).

At 1522:47 (Figure 2), the Chinook is 1.9nm to the south east of a primary contact, believed to be a glider. This is the CPA from radar analysis. [UKAB Note: the Airprox glider may not have been painting on radar and so the radar CPA is not necessarily the Airprox CPA].

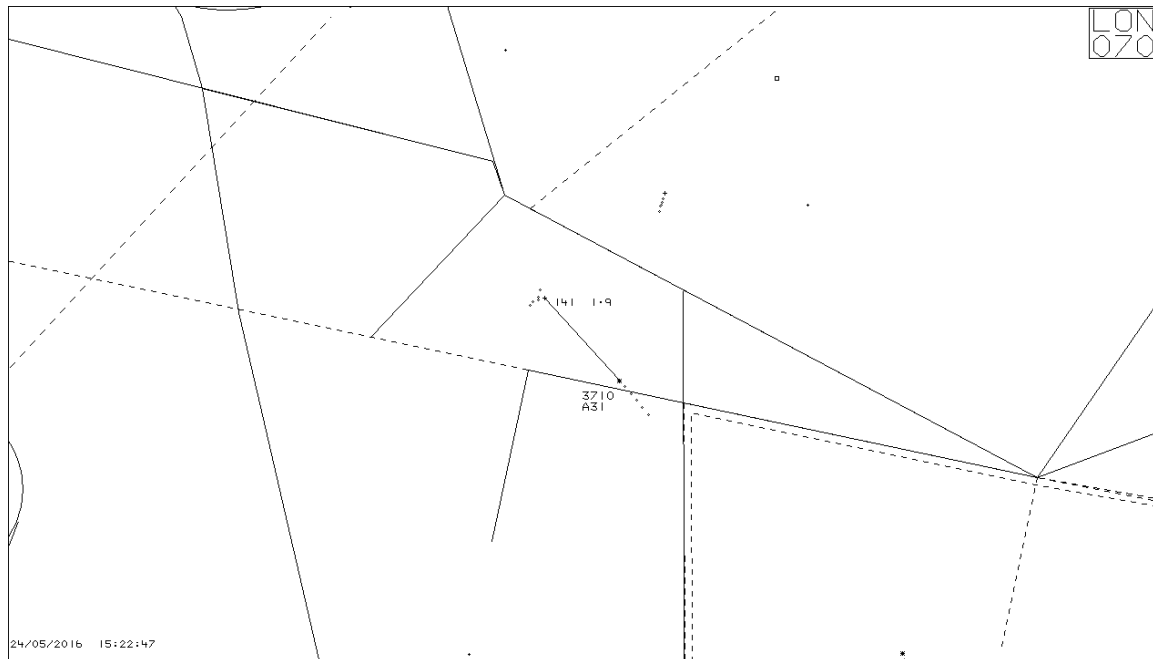


Figure 2: Geometry at 1522:47 (Chinook squawking 3710; primary contact believed to be a glider at time of CPA).

At 1523:04 (Figure 3), the Chinook is 2.2nm to the south east of the primary contact, believed to be a glider, there are also two faint returns showing to the east.

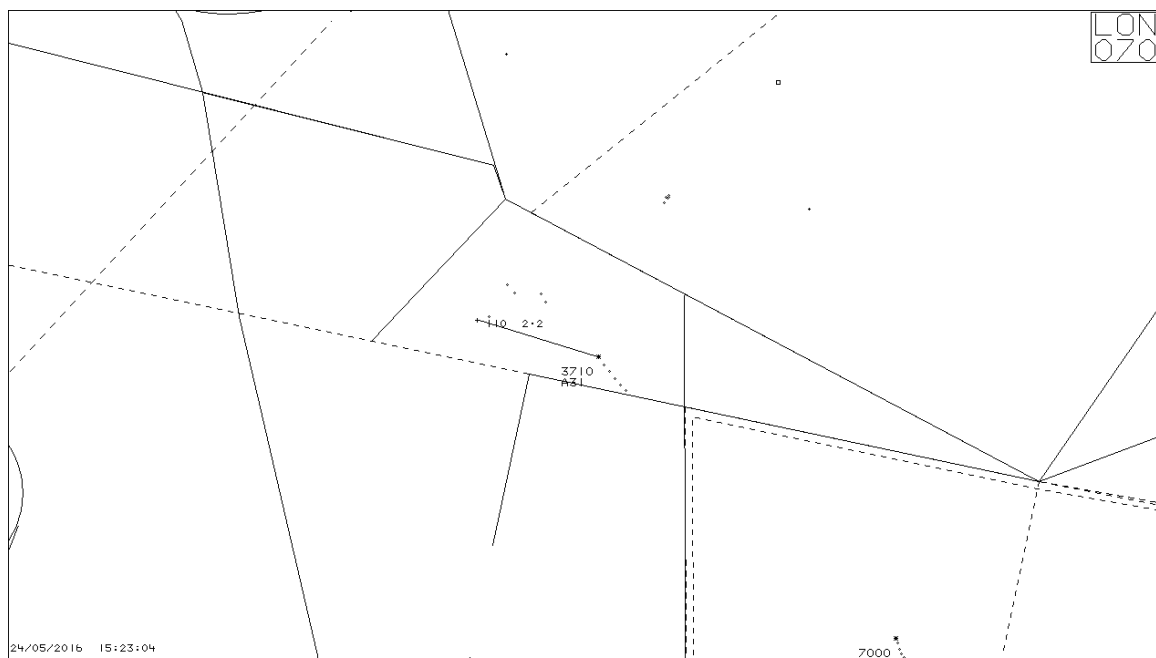


Figure 3: Geometry at 1523:04 (Chinook squawking 3710; primary contact believed to be a glider).

The Chinook pilot reported transiting to Brecon and was receiving a Traffic Service from Brize Norton (Zone). The pilot commented that it was evident from the radar frequency that there was a lot of activity in the area and so all the crew were conducting vigilant lookout. At approximately

9nm to the South East of Brize, at 3000ft QNH (1020hPa), the crew reported being passed Traffic Information on traffic in their 2 o'clock which was not sighted. Shortly after, the RHS pilot observed a glider straight head by 500m and slightly below (100ft).

The Glider pilot that reported the incident on frequency commented that there were at least three other gliders in the vicinity at the time of the incident. The pilot reported becoming aware of the Chinook from the sound of the rotor blades but, due to his position in the turn, did not become visual until late and judged it was not then necessary to take avoiding action.

The Brize Norton Zone controller reported that the airspace was extremely busy with a high density of GA traffic, including many primary contacts believed to be gliders. Workload for the controller was reported as high to medium. The controller reported that the Chinook was handed over from Odiham and placed under a Traffic Service; shortly after receiving the aircraft on frequency the controller reported passing Traffic Information in the Chinook's 2 o'clock. After this, the controller reported difficulty recalling events accurately but comments on a protracted transmission with another call sign. The controller perceived the severity as high.

The tape transcript indicates high frequency workload with a multitude of GA aircraft calling before, during and after the incident. The tape transcript does not correlate with the controller's report of Traffic Information to the Chinook after handover; however, the crew also reported being passed information. Although the controller limited radar service on approaching the overhead, given the high levels of traffic reported an additional limiting of service for traffic intensity may have been warranted. That said, the Chinook crew reported conducting a vigilant lookout due to the high activity. The changing aspect of the gliders in the thermal may have produced an intermittent radar return; the radar replay indicates intermittent primary contacts in the area. Without a consistent paint on the radar screen it would have been difficult for the controller, who was busy on frequency, to have identified the confliction and passed Traffic Information.

The primary barrier for the Chinook and Glider in this instance was 'see-and-avoid'. The glider was without a transponder and so would have been unable to provide any further radar information to assist the controller in passing Traffic Information. The glider pilot did call on the Brize frequency shortly before the Airprox requesting information regarding Redlands parachute zone, this could have provided an opportunity to enhance the controllers situational awareness and pass information on gliding activity in the area.

UKAB Secretariat

The Chinook and Ventus 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 converging then the Chinook pilot was required to give way to the Ventus².

Comments

JHC

Although the Chinook crew were carrying out a vigilant lookout due to their awareness of traffic density, it was only through luck that this incident did not result in a collision. Because the gliders were not transponding, ATC were having to rely on fleeting primary contacts to provide a Traffic Information to the Chinook. Nevertheless, accepting that this is Class G airspace, it may have been better airmanship had the glider pilot positively alerted Brize ATC to their presence prior to, rather than after the incident. Existing barriers could be strengthened by making the gliders more conspicuous, either visually or to primary radar. Another potential barrier to Airprox incidents like this would be the fitting of ADS-B or transponders to gliders.

¹ SERA.3205 Proximity.

² SERA.3210 Right-of-way (c)(2) Converging.

Summary

An Airprox was reported when a Chinook and a Ventus flew into proximity at 1523 on Tuesday 24th May 2016. Both pilots were operating under VFR in VMC, the Chinook pilot was transiting at 3000ft and in receipt of a traffic Service from Brize radar. The Ventus pilot was circling in a thermal and was not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings and reports from the appropriate ATC and operating authorities.

Looking first at the actions of the Chinook pilot, the Board thought that there was little more he could have done in the circumstances. He was receiving a Traffic Service from Brize Radar, and was looking for Traffic in his 2 o'clock which had been called by the controller. Members opined that it was pure luck that the crewman had called further traffic, which, by switching the RHS pilot's attention to the opposite side, caused him to see the glider directly ahead. The Board heard from the JHC member that the Chinook fleet were shortly to be fitted with TAS; although heartened to hear this, members commented that in this circumstance it wouldn't have helped anyway because the glider was only fitted with FLARM.

The Brize controller was aware that the airspace was busy and did his best to provide Traffic Information on the intermittent radar returns that he could see. Noting that not all of the gliders would have been visible to him, there followed a discussion about the value of having FLARM ADS-B receivers installed in ATC with a display in RAF radar rooms. The Board were updated by military members about a trial that had been conducted at Linton-on-Ouse using Glidernet and was drawing to a close; the findings were in the process of being analysed. However, although the early feedback had been positive, it was noted that the FLARM equipment, and more specifically web sites such as Glidernet, were not assured in any way; as such they could not be used directly for controlling purposes, only for general information. In this case the Brize controller already knew there was a high volume of glider traffic in the area, but an ADS-B FLARM display in the radar room would have provided useful information such as their altitude and track histories. Returning to the actions of the Brize controller, the Board thought that he had done his best in difficult circumstances to provide the Chinook pilot with as much information as he had available to him.

The debate then led on to a long discussion about glider conspicuity, a subject which has been discussed many times before by the Board. Members heard from glider representatives that making gliders more conspicuous to radar was not as simple as some thought. Using radar reflectors (akin to those used by yachts), was not particularly feasible in modern gliders because of space constraints and the fact that the light-weight carbon fibre materials used for building gliders seem to reduce their effectiveness. Many IFF units require significant battery power, which is just not available to most gliders (although the gliding members acknowledged that newer IFF systems were coming onto the market requiring less battery power, or having their own power source, they were still expensive options). There was also an issue with saturation of ATC controllers' displays if all gliders were to squawk at all times. Civil pilot members commented about the portable, less expensive, collision avoidance systems being developed such as the NATS Low Power ADS-B Transceiver (LPAT) which provide the minimum functionality needed to make a GA aircraft, or glider, visible to other airspace users. The Board hoped that further development of electronic conspicuity devices in accordance with the recent CAA CAP1391³ would allow for the various collision and traffic systems to be able to interact across the differing flying communities. It was recognised that these systems were still some way from being wide-spread, and the obstacles of frequency saturation were still to be overcome; nevertheless, the Board were interested to note the different solutions available and hoped that a light-weight, low-cost solution would soon become common-place.

³ Available at <http://publicapps.caa.co.uk/docs/33/CAP1391%20MAR%2016.pdf>.

Finally, the Board looked at the actions of the glider pilot; operating as he was in Class G airspace, his only mitigation against collision in this circumstance was see-and-avoid. He had noted that gliding conditions were difficult, and that his thermaling orbit would have given him few options for seeing the Chinook earlier than he did. The Board noted that he could hear the Chinook approaching from behind, and was concerned by its proximity, but had not seen it in time to take any action. They also noted that he had judged that the risk of collision was none because he thought that the Chinook pilot had seen and avoided him. In fact, it transpired that the Chinook pilot had not seen him early enough to take any avoiding action that materially increased separation.

The Board then discussed the cause of the Airprox. They quickly agreed that although everyone involved in the Airprox was doing their best, the root cause had been a late sighting by the Chinook pilot and, because he had seen it after CPA, effectively a non-sighting by the Ventus pilot. Although the Chinook pilot had seen the glider at a late stage, the Board noted that neither pilot had had the time to take effective avoiding action, and so it was decided that luck had played a major part in events. Noting the disparity in the Chinook and Ventus pilots' reports of risk and separation, the Board opined that the Ventus pilot had only seen the Chinook as it travelled away from him, and had retrospectively made a false assumption as to the Chinook pilot's actions prior to the encounter. As a result, the Board were inclined to take place more weight on the Chinook pilot's report given that he had seen the Ventus throughout the encounter; the risk was therefore assessed as Category A.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by the Chinook pilot and effectively a non-sighting by the Ventus pilot.

Degree of Risk: A.