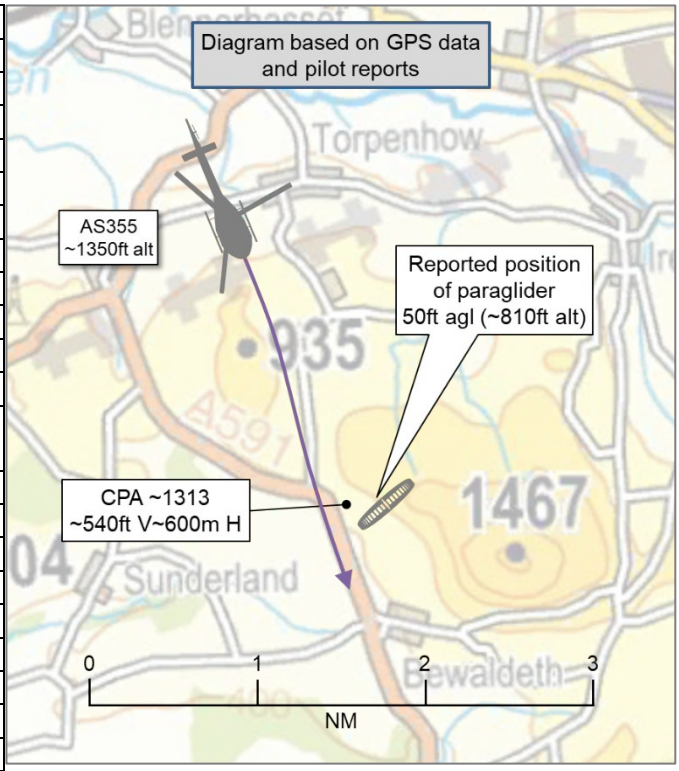
AIRPROX REPORT No 2020138

Date: 29 Sep 2020 Time: ~1313Z Position: 5443N 00314W Location: 5NM NE of Cockermouth

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Paraglider	AS355
Operator	Civ Hang	Civ Helo
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Basic
Provider	N/A	London Info
Altitude/FL	NK	~1350ft
Transponder	Not fitted	A, C, S
Reported		
Colours	Lime green	Black/yellow
Lighting	NR	Anticolls, HISLs, position lights
Conditions	VMC	VMC
Visibility	50km	>35km
Altitude/FL	~810ft	1350ft
Altimeter	amsl	QNH (1009hPa)
Heading	250°	170°
Speed	22kt	115kt
ACAS/TAS	Not fitted	TCAS I
Alert	N/A	None
Separation		
Reported	200ft V/100m H	Not seen
Recorded	~540ft V/~600m H	



THE PARAGLIDER INSTRUCTOR reports that their student was in the early stages of training, conducting simple 'top-to-bottom' gliding flights. The student was very focused, and briefed on the flight plan. After launch the student was taught to focus on a large marked out hi-viz landing area and conduct the flight in preparation for landing. The student conducted a good launch and was flying away from their take-off to head towards the landing area; the instructor first heard the helicopter approaching just after the launch of the student. Being focused on the student, they became rapidly concerned about the increasing engine noise from the helicopter and its proximity to their location. Starting to video their student's flight, as they always do, the helicopter came into view and flew past the student at a distance which compromised the student's flight safety. The helicopter's approach angle suggested the pilot would have had good visual with the paraglider launching – it then flew on a converging course towards it, directly upwind of the student paraglider, with 200ft vertical and 100m horizontal separation. No attempt was made by the helicopter pilot to alter course. The student was unaware of the helicopter.

The helicopter created a large area or turbulence directly upwind of the area where the student had been briefed to fly in and lose height before landing. As the instructor, they immediately changed the student's flight plan, diverting them further downwind and further away from the helicopter's rotor wake. Due to the helicopter flying upwind, they were extremely concerned about the downwash drifting towards the student. If the student had encountered the helicopter wake turbulence, it would have almost certainly resulted in a loss of control and catastrophic collapse of the paraglider.

The instructor assessed the risk of collision as 'Medium'.

THE AS355 PILOT reports that they were transiting southbound and moving through the area of the paraglider at the time the Airprox was reported. Their track passed 1600m to the west of the paraglider's location. They did not see the paraglider and were not made aware of its presence by either London

Information or Scottish Information. The paraglider reported the Airprox and, based on comparison of its position to the GPS trace of their route, they estimate it was to the east of their track.

The pilot assessed the risk of collision as 'None'.

THE LONDON FISO reports that, at approximately 1315Z, [the AS355 pilot] came on frequency approximately 15NM south of DCS at 1500ft. The FISO was aware of NOTAM activity regarding paragliders approximately 8NM SE of DCS; however, [the AS355] was south of this activity when the pilot contacted them. They have since learned that the pilot of one of the paragliders filed an Airprox against [the AS355]. The pilot of [the AS355] did not mention this on RT contact.

Factual Background

The weather at Newcastle was recorded as follows:

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METAR EGNT 291320Z 22004KT 170V280 9999 FEW030 15/06 Q1015=
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Analysis and Investigation

NATS Swanwick Safety Investigations

The Prestwick Operational Supervisor (OS) received a telephone call from the pilot of a paraglider, who stated that they intended to report an Airprox with an unknown helicopter at approximately 400ft agl in the vicinity of Bassenthwaite. The Prestwick OS ascertained that the helicopter was [the AS355] that had previously received a Basic Service from Scottish FIS, and subsequently London FIS at the time of the event. The pilot of [the AS355] did not report an Airprox on either frequency.

[The AS355] was routeing VFR [southbound]. The pilot of [the AS355] was receiving a Basic Service from Scottish Information (PC FIS). The pilot of [the AS355] reported 3NM north-east of position DCS at **1310:38** (all times UTC) and was subsequently transferred to London Information (L FIS) at **1310:44** abeam the boundary between the two Flight Information Regions. Radar displayed the Mode A of [the AS355] change to 7000 at **1311:03**.

The paraglider pilot was a student, with an instructor observing, reported to be within the vicinity of Bassenthwaite. The Airprox report from the paraglider instructor provided a latitude/longitude position of the area they were flying. Four promulgated paragliding NOTAMs were active for this time; however, the paraglider was not flying within any of these areas. (see Figures 1 and 2).

Figure 1

Q) EGTT/QWPLW/IV/M/W/000/051/5440N00311W003
B) FROM: 20/09/29 06:00 C) TO: 20/09/29 18:00
E) CIVIL AIRCRAFT NOTIFICATION PROCEDURE - MULTIPLE PARAGLIDERS
OPERATING IN LOW FLYING AREA 17 WI 2NM RADIUS OF PSN
543946N 0031047W (ULLOCK PIKE, CUMBRIA). 2000FT AGL. CIC 07557
446043. 20/09/189/LFBC
LOWER: SFC
UPPER: 5100FT AMSL

Q) EGTT/QWPLW/IV/M/W/000/031/5437N00307W003
B) FROM: 20/09/25 10:00 C) TO: 20/10/02 18:00
E) CIVIL AIRCRAFT NOTIFICATION PROCEDURE - MULTIPLE PARAGLIDERS
OPERATING IN LOW FLYING AREA 17,THE
AMBLESIDE TO BASSENTHWAITE FLOW ARROW, AND NIGHT SECTOR 3BW
WI 2NM RADIUS OF PSN 543714N 0030657W (KESWICK, CUMBRIA).
2000FT AGL. CIC 07786 356401. 20/09/169/LFBC
LOWER: SFC
UPPER: 3100FT AMSL
SCHEDULE: 1000-1800

Q) EGTT/QWPLW/IV/M/W/000/049/5436N00302W003
B) FROM: 20/09/29 06:00 C) TO: 20/09/29 18:00
E) CIVIL AIRCRAFT NOTIFICATION PROCEDURE - MULTIPLE PARAGLIDERS
OPERATING IN LOW FLYING AREA 17 WI 2NM RADIUS OF PSN
543554N 0030229W (CLOUGH HEAD, CUMBRIA) 2000FT AGL. CIC 07958
450218. 20/09/190/LFBC
LOWER: SFC
UPPER: 4900FT AMSL

Q) EGTT/QWPLW/IV/M/W/000/048/5432N00315W003
B) FROM: 20/09/29 09:00 C) TO: 20/09/29 18:30
E) CIVIL AIRCRAFT NOTIFICATION PROCEDURE - MULTIPLE PARAGLIDERS
OPERATING IN LOW FLYING AREA 17 WI 2NM RADIUS
OF PSN 543226N 0031529W (BUTTERMERE MOSS, CUMBRIA).
2000FT AGL. CIC 07786930505. 20/09/198/LFBC
LOWER: SFC
UPPER: 4800FT AMSL

Figure 2

The pilot of [the AS355] reported onto the L FIS frequency at **1313:17** stating their position as 11NM south of Kirkbride, at an altitude of 1300ft. The L FISO instructed the pilot to change Mode A to 1177 and informed the pilot that they were receiving a Basic Service.

Based on the information provided within the two Airprox reports, it would appear that the Airprox incident occurred potentially concurrent with the pilot of [the AS355] contacting London Information. Figure 3 displays the position of [the AS355] at this time, with the position of the Airprox location (marked +) based on the paraglider pilot's Airprox report.

Note: The Airprox report from the pilot of [the AS355] provided a different latitude/longitude position from the pilot of the paraglider. This was within 1NM of the paraglider pilot's reported position radius. Safety Investigations has used the paraglider's position report for the basis of this investigation.

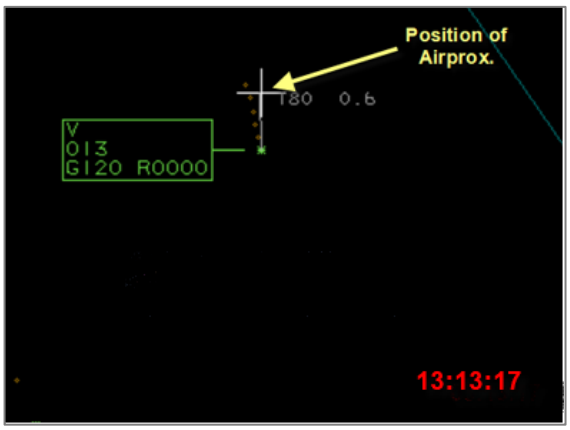

Figure 3

L FIS was cognisant of the four separate paragliding activity areas notified by NOTAM, approximately 8NM south-east of position DCS, proceeding south-east along Bassenthwaite Lake and Derwent Water (see Figure 1 & 2). These were marked accordingly on their VFR chart with a single corresponding pin, as is the required process.

The report from the L FISO stated that, although aware of the notified paragliding activity, they did not inform the pilot of [the AS355] of this activity as they believed the reported position and track ensured that [the AS355] had already vacated the area of activity. Kirkbride is approximately 10NM north-east of DCS. However, [the AS355] was actually approaching the notified activity areas.

Although not requested from the pilot of [the AS355], as detailed above, the L FISO should have provided the pilot with information on the notified paraglider activity based on their reported position and altitude. However, the L FISO did not correctly assimilate the aircraft's actual position in relation to the area of activity.

Although the L FISO did not provide activity information to the pilot of [the AS355] that may have provided the pilot with a better situational awareness of the potential aerial hazards within the vicinity of their routeing, this would not have mitigated against this incident, as the Airprox was potentially already occurring, and as per the provided GPS information, the paraglider was not positioned within these notified areas. The PC FISO would not have been aware of the notified activity to inform the pilot of [the AS355] prior to transfer to London FIS, as the activity was south of the PC FIS area of responsibility.

L FIS/PC FIS are a non-radar derived information service, with recognised limitations, and it is ultimately the pilot's responsibility to make themselves aware of notified aerial hazards on their intended routeing. It is also a pilot's responsibility to employ the 'see and be seen' principles of VFR flight.

Using the position report from the paraglider pilot, Safety Investigations estimated the topography elevation of the reported latitude/longitude position by use of Google Maps, as 760ft AMSL. The paraglider pilot report stated that their Above Ground Level (agl) was 50ft. The report from the pilot of [the AS355] stated that their altitude was 1350ft. This calculation, based on the provided GPS information from the paraglider pilot, would suggest that the distance between [the AS355] and the paraglider was an estimated 640ft vertical, and 185m horizontal (see Figure 4).

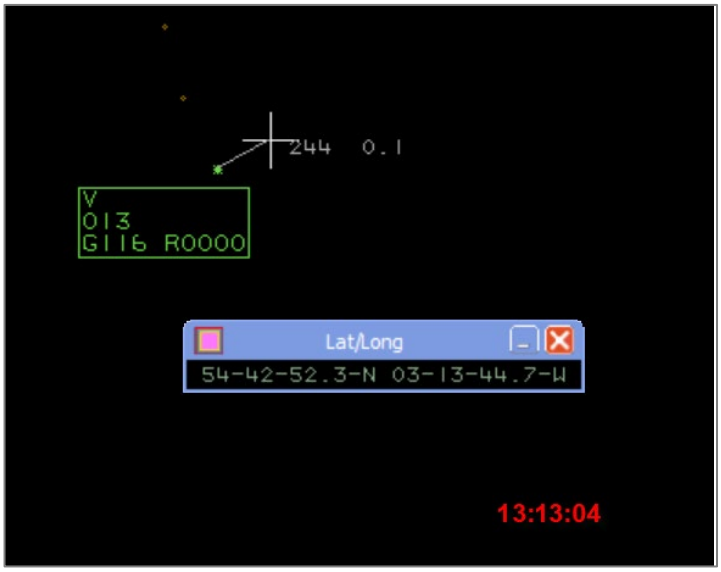

Figure 4

Safety Investigations was unable to verify the distances between [the AS355] and the paraglider using the LTC Multi-Track radar as there were no primary radar returns associated with the paragliding activity.

UKAB Secretariat

The AS355 pilot supplied a GPS log of the flight, from which it was possible to resolve their track in relation to the reported position of the paraglider. It was possible to establish that the AS355 was at an altitude of approximately 1350ft (±30ft) and that the aircraft's ground track passed no closer than approximately 600m to the west of the paraglider's reported position.

The Paraglider and AS355 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[1] If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.[2] If the incident geometry is considered as converging then the AS355 pilot was required to give way to the paraglider.[3]

Comments

BHPA

The BHPA has ascertained from the instructor that they usually submit a NOTAM for the flying site they were operating from on that day but had accidentally omitted to do so on this occasion. Although the student did see the helicopter whilst they were flying, they were at a very early stage of training and were oblivious to the possible effects of rotor downwash on their canopy and had not been taught any evasive/high-viz manoeuvres. Fortunately, the instructor was able to guide the pilot away from any likely areas of rotor downwash.

Two additional actions which may have increased the helicopter pilot's situational awareness were a verbal prompt from the London FISO who knew of the NOTAM'd areas a little further along the helicopter's course line and, second, whether the pilot was using a software-based moving map display which may have featured active NOTAM'd areas on their course-line. Notwithstanding the above, the incident happened in Class G airspace and, therefore, both pilots were equally responsible for avoiding each other.

The BHPA fully accepts that a slow moving paraglider seen from above against the ground is almost impossible to see from a higher, faster moving aircraft, so learning how to negate the 'holes lining up in the Swiss cheese' scenario is an educational process that begins in schools and continues throughout a pilot's flying career. We believe that the dangers of both aircraft propeller prop-wash and helicopter downwash during start-up, taxiing, hovering and flying should be strongly emphasised to student pilots – especially with regards to the proximity of lighter aircraft such as microlights, sailplanes, paragliders and hang gliders. Finally, The Cumbrian Airspace Users Forum - which is subscribed to and has interaction with all users of Cumbria's airspace (RAF, Carlisle airport, ATC, air ambulance, police, commercial drone operators, light aircraft clubs, hot air balloons, BMAA clubs, RC model clubs, BHPA clubs) is a useful tool showing flying activity for anyone flying, or new to flying, in the Lakes area.

Summary

An Airprox was reported when a paraglider and an AS355 flew into proximity near Bassenthwaite Lake at ~1313Z on Tuesday 29th September 2020. Both pilots were operating under VFR in VMC, the paraglider was not in receipt of an Air Traffic Service; the AS355 pilot was in receipt of a Basic Service from London Information.

[1] SERA.3205 Proximity.
[2] SERA.3210 Right-of-way (c)(1) Approaching head-on.
[3] SERA.3210 Right-of-way (c)(2) Converging.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments.

The Board first considered the actions of the paraglider pilot, and heard from a paraglider member that the instructor involved usually submits a NOTAM for their planned activity but, on this occasion, they had omitted to do so. They went on to explain that revised system for paraglider pilots to submit NOTAMs via CANP[4] is much improved and pilots are actively encouraged to use this notification procedure, as evidenced by the 4 NOTAMs issued to the south of where the paraglider pilot had been operating. The paraglider member also highlighted the existence of the Cumbrian Airspace Users Forum, and the Board wished to encourage pilots to make use of this resource via Carlisle Lake District Airport. Returning to the Airprox itself, members noted that the paraglider pilot had been in the very early stages of their training and therefore would only have been equipped with a radio through which they would have been receiving instructions from their instructor; thus, they would have had no means of gaining situational awareness of the approaching helicopter (**CF3**) and would have relied on their lookout and that of their instructor. In the event, the instructor had heard and then seen the approaching helicopter and, having been concerned by its proximity to the paraglider (**CF6**), had directed the student on where to fly to increase the separation between the paraglider and the AS355.

Turning to the actions of the AS355 pilot, a helicopter pilot member wondered why they had chosen to transit at such a low altitude and opined that this may have been because the pilot generally operated at similar heights and so was quite comfortable with this height for their transit. However, the Board felt that the pilot may have been better served by transiting at a higher altitude, thus reducing the likelihood of encountering other airspace users that can only operate closer to the ground (**CF2**). The Board then briefly discussed the flow arrows that apply to military low-flying aircraft in the Lake District (and in other areas around the UK) and felt that, although not germane to this particular Airprox, knowledge of these flow arrows amongst civil aviators is relatively limited; the Board wished to remind pilots that details of military flow arrows can be found in the UK eAIP.[5] Notwithstanding, the Board agreed that, without any means of gaining situational awareness on the presence of the paraglider – the paraglider had not been operating in an area NOTAM'd as active with paragliders and the TCAS I equipment on the helicopter could not have detected the paraglider (**CF3**, **CF4**) – the AS355 pilot had had to rely on the See and Avoid barrier for the detection of the paraglider and that they had not seen it (**CF5**).

Members then briefly considered the actions of the London FISO and agreed that they had not correctly assimilated the relative positions of the pilot's initial position report and the NOTAM'd paragliding activity, and had therefore not considered it relevant information to have been passed to the AS355 pilot. In any case, the Board also felt that there had been insufficient time between the AS355 pilot's initial call and the Airprox itself for the FISO to have offered any information on paragliding activity anyway. The Board heard from an ATC advisor that the Prestwick FISOs do have access to pertinent information outside their area of responsibility – in this case, the paragliding NOTAMs were outside the Prestwick FISO's area but were considered to have been far enough south for the Prestwick FISO to have not been required to warn the AS355 pilot of the activity. In the event, the London FISO had not been required to monitor the AS355 under the terms of a Basic Service (**CF1**) and so the Board agreed that there was little more that they could have done.

[4] Civil Aircraft Notification Procedure – a system by which civil operators inform the Military Low Flying Operations Flight (LFOF) of their activity that is likely to be of interest to low-flying military aircraft. For activity involving paragliders, LFOF has agreed to submit a NOTAM request through NATS AIS on behalf of the paraglider pilot(s).
[5] UK eAIP ENR 6-76 available at: https://www.aurora.nats.co.uk/htmlAIP/Publications/2020-12-03-AIRAC/html/index-en-GB.html

The final discussion pertinent to this Airprox concerned the effects of helicopter rotor downwash on paraglider and paramotor canopies; a paraglider member informed the Board that paraglider pilots are taught the dangers of rotor downwash and the risk of a collapsed canopy from the very outset of their training and wondered if helicopter pilots were taught similarly; a helicopter pilot member confirmed that they were. Whilst it was not the place of the Board to consider risks outside the risk of collision, the Board wished to remind helicopter pilots to be cognisant of the effects of their rotor downwash on, in particular, parachutes and paraglider canopies.

Continuing on the subject of risk, members finally considered the risk of collision between the 2 aircraft involved. The Board was grateful to the AS355 pilot for their GPS log files, without which it would not have been possible to assess the separation between the paraglider and the helicopter. It was noted that this GPS log had not been available to the NATS investigation and that this explained the disparity between the separation assessed by the NATS Investigator and that assessed by the UKAB Inspector. The Board noted that neither pilot involved considered the risk of collision as high, and that the GPS track of the AS355 passed approximately 600m to the west of the paraglider's reported position, with a vertical separation of approximately 500ft. Given this information, members felt that there had been no risk of collision but there was a relatively even split between assigning a risk category C (safety degraded) and a risk category E (normal safety standards and parameters had pertained); after a brief discussion, the majority of Board members agreed that a risk category E was appropriate for this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2020138		
CF	**Factor**	**Description**	**Amplification**
	Ground Elements		
	• Situational Awareness and Action		
1	Contextual	• ANS Flight Information Provision	Not required to monitor the aircraft under the agreed service
	Flight Elements		
	• Tactical Planning and Execution		
2	Human Factors	• Flight Planning and Preparation	
	• Situational Awareness of the Conflicting Aircraft and Action		
3	Contextual	• Situational Awareness and Sensory Events	Pilot had no, late or only generic, Situational Awareness
	• Electronic Warning System Operation and Compliance		
4	Technical	• ACAS/TCAS System Failure	Incompatible CWS equipment
	• See and Avoid		
5	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots
6	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: E

Safety Barrier Assessment[6]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **not used** because the London FISO was not required to monitor the AS355 under the terms of a Basic Service.

[6] The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the UKAB Website.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the AS355 pilot had elected to transit at a relatively low altitude, which increased the likelihood of their encountering paragliders.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had any situational awareness of the presence of the other aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the TCAS I equipment fitted to the AS355 was not capable of detecting the presence of the paraglider.