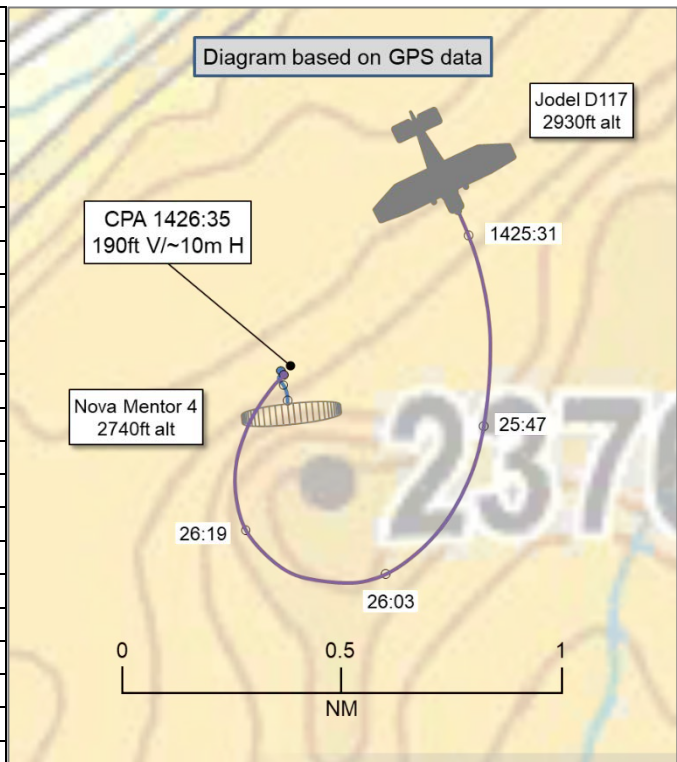


AIRPROX REPORT No 2020168

Date: 30 Dec 2020 Time: 1427Z Position: 5410N 00224W Location: Over Ingleborough peak

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Nova Mentor 4	Jodel D117
Operator	Civ Hang	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Listening Out
Provider	N/A	Safety Com
Altitude/FL	2740ft	2930ft
Transponder	Not fitted	A, C, S
Reported		
Colours	Petrol (blue)	Red/white
Lighting	NR	Strobes
Conditions	VMC	VMC
Visibility	NR	>10km
Altitude/FL	2900ft	3500ft
Altimeter	QNH (1013hPa)	NK
Heading	NR	Orbiting
Speed	NR	100kt
ACAS/TAS	FLARM	SkyEcho
Alert	None	None
Separation		
Reported	200m V/30m H	Not Seen
Recorded	190ft V/~10m H	



THE NOVA MENTOR PARAGLIDER PILOT reports slowly gaining height at approximately 1m/s above the Ingleborough peak in a gentle wave. The sky was clear and the visibility was outstandingly good. They could see an aircraft in front of them at a safe distance and flying a very similar altitude. The pilot of this aircraft must have noticed them, they thought, as they decided to fly a circle. The paraglider pilot first heard the engine and then they saw the aircraft coming out of the sun and directly towards them at high speed, but not maintaining a safe distance as before. The paraglider pilot was concerned that the disturbed air mass might collapse their wing, leaving them no option but to use their rescue reserve. Fortunately, they didn't come across any turbulence caused by the aircraft flying in close proximity to their paraglider. They could not take any action as the paraglider was too slow compared to the incoming aircraft. However, there was no risk of direct collision as, they opined, the pilots could see each other from a good distance.

The pilot assessed the risk of collision as 'Low'.

THE JODEL D117 PILOT reports that they did not see the paraglider at any time during their orbit of the peak. They would like to apologise to the paraglider pilot if they believe that their actions compromised the safety of both aircraft. They are a keen supporter of mandated proximity detection equipment, which would hopefully reduce proximity issues if everybody had the equipment. Their aircraft is equipped with a Mode S transponder with ADS-B Out and they also carry a SkyEcho device which is capable of ADS-B In. This device now also has a FLARM facility (purchased in January 2021); unfortunately, they did not have this FLARM capability at the time of the Airprox. At no point did they receive any alerts or see the other aircraft. They presume that the paraglider was not transmitting ADS-B but may have had FLARM.



Figure 1 – View of Ingleborough from the north (image provided by the Jodel pilot)

They would have liked the CAA to mandate a suitable single protocol that all could use but the CAA seems rather reluctant to do so, they opined. They thought that it was good to see that the CAA is currently giving £250 back on the SkyEcho, so more aircraft may soon have ADS-B Out.

The pilot was unable to make an assessment of the risk of collision.

Factual Background

The weather at RAF Leeming was recorded as follows:

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METAR EGXE 301350Z AUTO 29005KT 9999 NCD 03/M01 Q1000=
METAR EGXE 301450Z AUTO 28001KT 9999 NCD 03/M02 Q1001=
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Analysis and Investigation

UKAB Secretariat

Analysis of the NATS radar replay showed the Jodel orbiting Ingleborough peak around the time reported by the paraglider pilot. However, the paraglider did not appear on the NATS radar and so further analysis via this means was not possible.

The paraglider pilot provided a GPS log file from their FLARM equipment and the Jodel pilot supplied both a GPS log file and an ADS-B log file; unfortunately, the data points captured by the ADS-B were too far apart to conduct meaningful analysis. However, both GPS log files contained sufficient detail for a reconstruction of the event to be made. The Jodel pilot approached the peak from the north at an altitude of 2900ft and commenced an orbit at around **1425:30**. At this time, the paraglider pilot was operating at an altitude of 2700ft above the north-facing slope of the peak. The Jodel pilot then flew a clockwise orbit of the peak, during which time there was very little change in position of the paraglider. At around **1426:30**, as the Jodel pilot passed through a heading of approximately 045°, they flew past the paraglider with a horizontal separation of approximately 10m and a vertical separation of approximately 190ft (all data taken from respective GPS log files).

The paraglider and Jodel 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 converging then the Jodel pilot was required to give way to the paraglider.²

Comments

BHPA

The BHPA would like to commend the paraglider pilot on flying with FLARM but, more importantly, good use of lookout. This report does highlight some of the interoperability concerns with the current suite of electronic conspicuity (EC) devices but we believe that flying with some EC measures is better than flying without any. It was unfortunate that the Jodel pilot's device had not yet been set up for FLARM, as this may have given greater forewarning to the paraglider pilot, but the fact is that even if the paraglider pilot had every EC device available to him and had received alerts regarding an aircraft's presence, the speed and manoeuvrability of a paraglider to avoid a collision is extremely limited. Paraglider pilots are advised to perform gentle wingovers or a spiral dive to make themselves more visible to the other aircraft if height and skill allow.

In this incident, the paraglider was dynamically soaring in a gentle wave meaning that it would be maintaining an almost stationary position over the ground with just gentle beats along the lift band. This flight profile would have made it far harder for the Jodel pilot to see than perhaps a paraglider in thermic lift, which would have been banked over hard whilst orbiting and presenting a much more visible profile.

The BHPA understands that this incident occurred in uncontrolled airspace where a good lookout is absolutely essential and highlights the fact that even carrying an EC device is no guarantee of electronically detecting another aircraft. Once again, all pilots of powered aircraft need to be acutely aware of the detrimental effects of their propeller/rotor/jet wash on a paraglider wing or hang glider if flown in close proximity.

Summary

An Airprox was reported when a Nova Mentor 4 paraglider and a Jodel D117 flew into proximity over Ingleborough peak at 1427Z on Wednesday 30th December 2020. Both pilots were operating under VFR in VMC; neither pilot was in receipt of an Air Traffic Service.

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 pilot member that there was little that the paraglider pilot could have done to increase separation between themselves and the Jodel because paragliders are not particularly manoeuvrable. The Board noted that the paraglider pilot had had no prior warning of the presence of the Jodel until they sighted it (**CF1**) and commended the paraglider for their lookout, sighting the Jodel when it had been to the north of the peak and then maintaining visual contact while the Jodel pilot had commenced their turn. Members considered it to be unfortunate that the FLARM carried by the paraglider pilot had not been able to detect the SkyEcho carried by the Jodel pilot (**CF2**), but highlighted that there are many forms of

¹ SERA.3205 Proximity.

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

electronic conspicuity available to pilots and, sadly, not all of these are interoperable. The Board noted that the paraglider pilot had assumed that the Jodel pilot had been visual with them, but this had not been the case and so, by the time the paraglider pilot had reacquired the Jodel visually and realised that the Jodel pilot was going to pass relatively close to them (**CF4**), it had been too late for the paraglider to take any meaningful action to increase separation.

Turning to the actions of the Jodel pilot, the Board commended their support of electronic conspicuity equipment but again lamented the lack of compatibility of some of these devices. On the day of the Airprox, the Jodel pilot's SkyEcho equipment had been unable to detect FLARM devices (**CF2**) and so the Jodel pilot had had no situational awareness of the presence of the paraglider (**CF1**); the Board was heartened to hear that, since this Airprox, the Jodel pilot had availed themselves of the ability to electronically detect FLARM devices. The Board wished to highlight to pilots that, while electronic conspicuity doubtless contributes to the mitigations of mid-air collision, lookout still remains the primary means for detecting threats in Class G airspace. The Board again heard from a paraglider pilot member that paragliders and hang-gliders are most likely to be found on the windward side of ridges and encouraged pilots to consider this as part of their active threat and error management routine. As it was, the Jodel pilot had not sighted the paraglider at any stage (**CF3**) and so members felt that this had been a contributory factor in this Airprox.

Finally, the Board considered the risk involved in this event. Members took into account the lack of manoeuvrability of the paraglider and the fact that neither pilot had been able to take any action to increase separation. The Board was grateful to both pilots for supplying their GPS data, as this had permitted them to gain a greater understanding of how the Airprox had evolved. Some members felt that safety had been much reduced and that a risk of collision had existed (Risk Category B) whilst others were of the view that there had been sufficient separation as measured from the GPS data such that there had been no risk of collision. After further discussion, the latter view prevailed and the Board agreed that, although safety had been degraded, there had been no risk of collision between the 2 aircraft – Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2020168		
CF	Factor	Description	Amplification
	Flight Elements		
	• Situational Awareness of the Conflicting Aircraft and Action		
1	Contextual	• Situational Awareness and Sensory Events	The pilot had generic, late or no Situational Awareness
	• Electronic Warning System Operation and Compliance		
2	Technical	• ACAS/TCAS System Failure	Incompatible CWS equipment
	• See and Avoid		
3	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots
4	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk:

C

Safety Barrier Assessment³

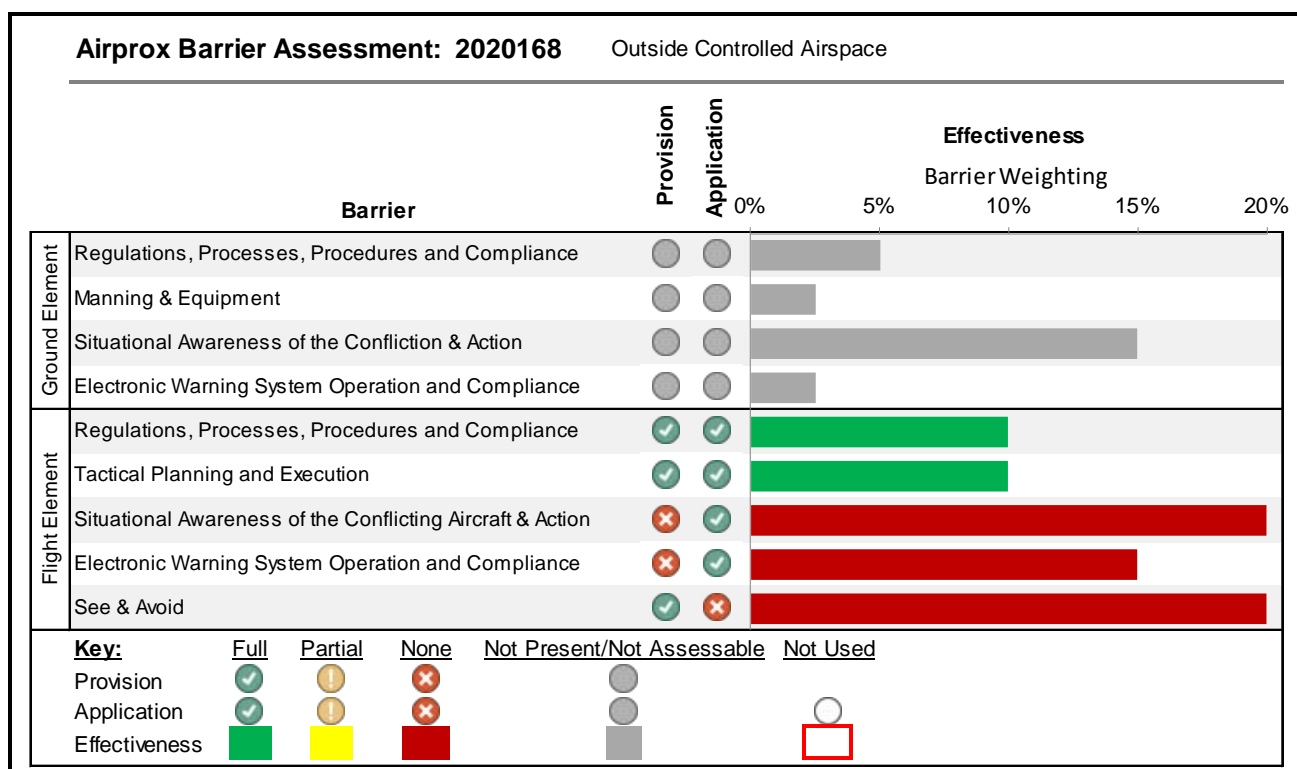
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot was aware of the presence of the other aircraft until the paraglider pilot saw the Jodel D117.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the FLARM carried by the paraglider pilot could not detect the transponder or PilotAware equipment carried by the Jodel pilot and, similarly, at the time of the Airprox the Jodel pilot's PilotAware was unable to detect FLARM.

See and Avoid were assessed as **ineffective** because the Jodel pilot did not see the paraglider, and the paraglider pilot, although having seen the Jodel, assumed that the Jodel pilot had sighted them and therefore did not manoeuvre to increase separation.



³ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).