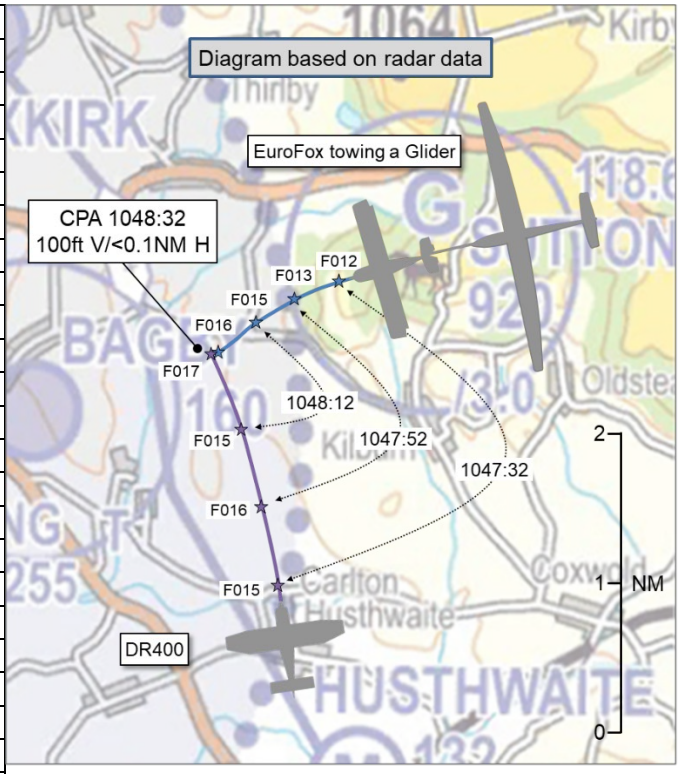
AIRPROX REPORT No 2022153

Date: 01 Aug 2022 Time: 1049Z Position: 5413N 00115W Location: 1.7NM WSW Sutton Bank

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Eurofox (towing)	DR400
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Basic
Provider	N/A	Teesside Radar
Altitude/FL	FL016	FL017
Transponder	A, C, S	A, C, S
Reported		
Colours	Yellow	White, blue
Lighting	Landing, HISL	Beacon
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	900ft	1800ft
Altimeter	QFE (972 hPa)	QNH (1017hPa)
Heading	270°	340°
Speed	70kt	110kt
ACAS/TAS	FLARM	Other
Alert	None	None
Separation at CPA		
Reported	30ft V/50m H	70ft V/0m H
Recorded	100ft V/<0.1NM H	



THE EUROFOX PILOT reports that a DR400 was sighted as it appeared from behind the Eurofox's high-wing. The DR400 passed 50m in front and less than 50ft above. The glider pilot (being towed 50m behind the Eurofox) reported that the DR400 jinked left just prior to closest conflict. The DR400 registration was clearly visible on the left side of the aircraft as it diverged away to the right of the Eurofox after the confliction. The Eurofox pilot reports that there was no time to take avoiding action.

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

THE DR400 PILOT reports that they had called Topcliffe Approach for a zone penetration and transit due to the [low] cloudbase [further east]. There had been no response after having called twice. They tried calling Leeming Approach but, again, there had been no response after two attempts. When passing Easingwold [6.5NM S Sutton Bank] they contacted Teesside Approach/Radar and requested a Basic Service. They recall that they had mentioned that they were unable to raise a military controller but had not specifically asked whether Leeming was active.

Their planned track would have taken them through or over cloud in the MATZ. They acknowledge that they had not been confident to climb to 3300ft, nor confident to cut across the moors to the east of Sutton Bank due to the cloud over the high ground. Therefore, with a [subsequently realised] false expectation that cloud would limit gliding activity, they proceeded east of the MATZ. Addressing their use of flight planning software, the DR400 pilot observed that a red zone appears around Sutton Bank in the 'planning' mode but disappears in the 'flying' mode.

They had explained the difficulty of seeing gliders (and all aircraft) to their passenger who was the first to see the tug and glider in the one o'clock position and 70ft below. They opined that their scan had been too focused above and to the east. They note that they had deliberately not gone higher than 1600ft (on 1019hPa) so as to stay out of the airspace that gliders might be in, and to remain well clear of cloud. This, they opined, was misjudged and had clashed with the circuit [at Sutton Bank]. They

describe their avoiding action as "*pitching up*" and subsequently made a call to Teesside to state that they were clear. After the flight they called the gliding club to discuss the event.

With hindsight, the DR400 pilot suggested that they "*absolutely should have gone to the west, continued to communicate and found either clear sky above the MATZ or permission to cross either the MATZ, the stub or requested a short zone transit of Teesside*". They described the contributory factors as being "*A bad choice of routing after use of the wrong radio frequency and not getting a zone penetration*".

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

THE TEESSIDE CONTROLLER reports that they had been giving [the DR400] a Basic Service for just a couple of minutes and nothing else was working their frequency. The pilot reported "*safely past the gliders*", however, they had no knowledge of such aircraft and on review of the recordings they believe they may have been able to see, with difficulty, a 'pop-up' primary-only contact directly below [the DR400] a few seconds before the pilot informed them of their location.

THE TEESSIDE UNIT INVESTIGATOR reports that at 1045, [the DR400 pilot] free-called Teesside Radar approximately 23NM south of Teesside Airport requesting a Basic Service and detailing the proposed flight from [departure airfield] to [destination airfield] routing via Easingwold, Northallerton, Stokesley and the coast. The pilot was informed that they were being provided with a Basic Service and were given the Teesside QNH. The pilot selected the given squawk (7032) whereupon the level was verified. There were no other contacts in the vicinity of [the DR400] at that time and the aircraft was then approximately 20NM south of Teesside. As [the DR400] passed abeam the Sutton Bank gliding site, a primary contact appeared and garbled with the 7032 squawk. The pilot then reported that they were safely past the gliders.

Factual Background

The weather at Topcliffe was recorded as follows:

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METAR EGXZ 011050Z AUTO 30005KT 9999 BKN040/// 20/10 Q1018
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Analysis and Investigation

CAA ATSI

The Eurofox had recently departed Sutton Bank gliding site with a glider in tow. The DR400 was on a VFR flight, the pilot of which had intended to fly through the Vale of York then Redcar on the east coast.

At 1045:30 the pilot of the DR400, having failed to obtain a response on either the Topcliffe or Leeming frequencies, contacted Teesside Radar advising "*out of* [redacted] *bound for* [redacted] *via Redcar and the coast. Currently just to the north of Easingwold. Tracking round the military MATZ because I can't raise anybody. Planning to stay clear of your zone roughly Northallerton to Stokesley and out to the coast. And we are 1700ft on 1017. Two on board*". The Teesside Radar controller allocated a squawk of 7032.

At 1047:14, the Eurofox appeared on the area radar replay, 2.6NM northeast of the DR400 (see Figure 1).

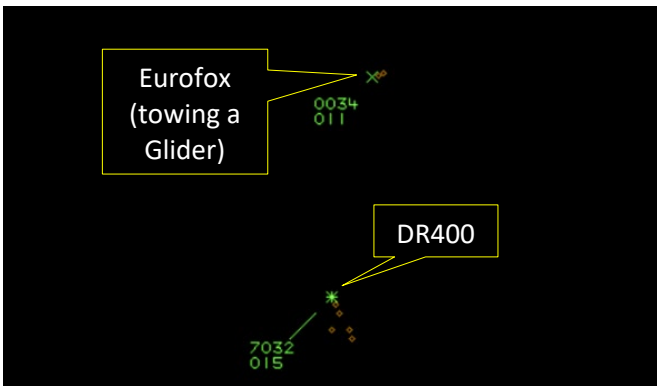


Figure 1 – 1047:14

At 1047:30 the Teesside controller requested the DR400 pilot's altitude, which was given as 1700ft [QNH 1017hPa] (see Figure 2).

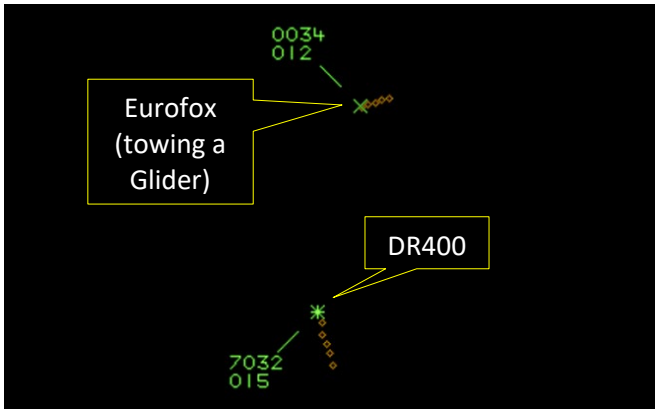


Figure 2 – 1047:30. The aircraft are 2NM apart

CPA occurred at 1048:32 with the aircraft separated by 100ft and less than 0.1NM (see Figure 3). There had been no further communications between the Teesside controller and the DR400 pilot.

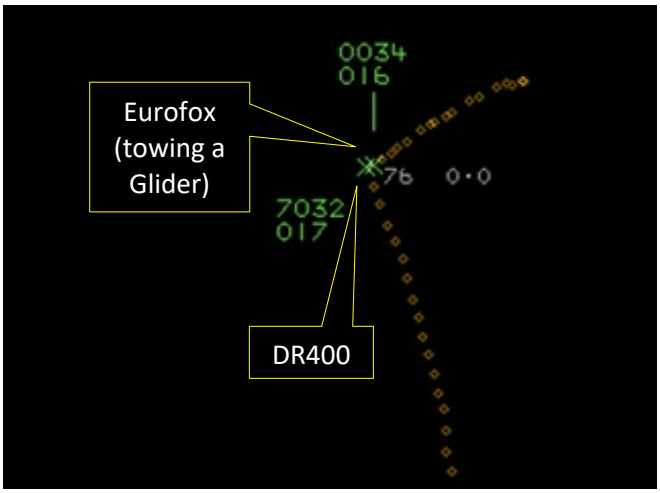


Figure 3 - 1048:32 CPA

At 1048:50 the DR400 pilot reported "*safely past the glider that was below us*" which was acknowledged by the Teesside controller.

ATSI had access to reports from both pilots and the Teesside Radar controller. The recorded RTF and area radar replay were also reviewed. The figures used in this report have been taken from the area radar replay and do not represent the picture available to the Teesside controller at the time. Teesside ATC also provided an investigation summary.

ATSI contacted the Teesside unit for further information regarding the notification of glider activity at Sutton Bank and visibility of the Eurofox on the Teesside radar display.

Teesside MATS Pt 2 (General – Chapter 10) states:

> *3.1 Gliding may take place at weekends at RAF Topcliffe. Information on motor gliding activity at Topcliffe will be provided on the morning of the activity by the instructor and a note of it should be made on the Aerodrome and Radar Information Boards. Traffic information should be passed to any aircraft flying in the vicinity of Topcliffe which may affect their operations.*

However, there is no advice or instruction to controllers to notify pilots of aircraft flying or likely to fly within the vicinity of Sutton Bank gliding site as to the activity or likelihood of activity there.

> *3.2 Sutton Bank is active seven days a week.*

One of the Teesside ATC investigators confirmed "*we usually inform pilots of the information we have presented on radar or if it's been busy that day and still daylight, warn them.*" This appears to suggest that warnings are only issued if activity is, or has been, observed on the radar display. Based on the reports received from the unit, it appears that in the moments running up to the Airprox there was no indication to the Teesside controller of activity at the gliding site.

The investigator reaffirmed the original investigation summary that only a primary contact was observed and only at the moment of convergence with the DR400 on the radar display. They reported that the 0034 squawk did not become visible until after the DR400 pilot had reported clear of the gliders.

The DR400 pilot's report stated that as they passed Easingwold, which is still in the Vale of York, south of the higher ground of the North York Moors, they were concerned about the cloud base in their area and felt that a direct track across the moors (therefore likely avoiding the gliding site) would not be possible. Their report also suggests that the pilot was aware of the existence of Sutton Bank gliding site as they had "*a false expectation that cloud would limit gliding activity*".

The DR400 pilot reported that it had been their plan to pass through the Topcliffe MATZ (see Figure 4). However, having failed to establish communications with Topcliffe or Leeming, the pilot appears to have then tried to avoid the MATZ. The UK AIP ENR 2.2 advises that compliance with MATZ procedures are not compulsory for civil pilots, however they are "strongly advised" to obtain a MATZ crossing approval. A track further to the west through the Topcliffe MATZ would have been possible, potentially keeping the aircraft away from the Sutton Bank 'climb-out'.

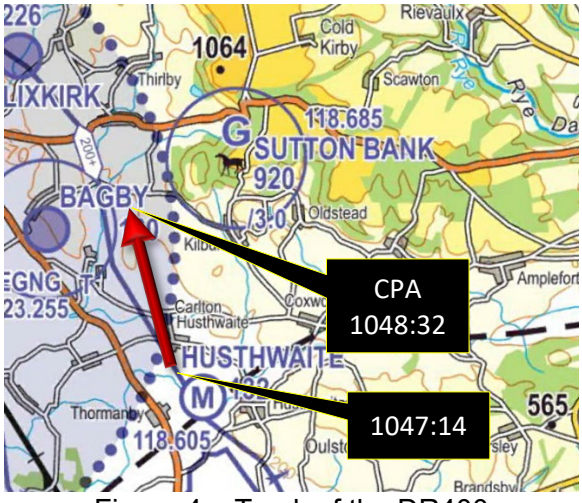


Figure 4 – Track of the DR400

The pilot of the DR400 reported that it was their passenger who first saw the tug-glider combination.

The Eurofox pilot stated that the "*DR400 was sighted as it appeared from behind the Eurofox high wing". The DR400 passed 50m in front and less than 50ft above the glider tug. The glider pilot (50m) behind the tug reported that the DR400 jinked left just prior to closest conflict.*"

The pilot of the DR400 flew into confliction with the Eurofox. ATSI did not consider the investigation report from Teesside ATC to be sufficient in detail, with no inclusion of any screenshots taken from their radar replay.

Teesside ATC is reminded of its obligations under Regulation (EU) 2017/373 of 1 March 2017 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 ATM/ANS.OR.A.065 paragraphs (a) through (e), with regards to the initial submission of a mandatory occurrence report and any follow up reports within the specified timescales as defined within Regulations (EU) 996/2010 and 376/2014.

UKAB Secretariat

Analysis of the NATS radar replay was undertaken and the Eurofox and the DR400 could be positively identified from Mode S information. The CPA was assessed and the diagram was constructed from the radar data.

The Eurofox and DR400 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 DR400 pilot was required to give way to the Eurofox.[2] When two aircraft are converging at approximately the same level, power-driven aircraft shall give way to aircraft which are seen to be towing other aircraft or objects.[3]

Comments

AOPA

This event shows the importance of a full briefing to passengers and the use of an 'extra set of eyes' for an effective lookout. It also demonstrates the importance of an effective lookout when towing. The Skyway Code[4] provides good advice on MATZ crossings, as does milFLIP.[5] Frequencies for military airfields are also available in the UK AIP[6], online for all airspace users.

BGA

The DR400 pilot is to be commended for their comprehensive report and post-incident analysis, and also for contacting the gliding club afterwards to discuss the circumstances around this incident. As notified in UK AIP ENR 5.5, aircraft operating from Sutton Bank airfield use VHF channel 118.685MHz (one of two 'Common Glider Field Frequencies') as a Common Traffic Advisory Frequency when operating within 10NM radius and 3000ft AAL, and the correct phraseology for an Unattended Aerodrome (see CAP413). UK glider launch sites are listed in UK AIP ENR 5.5 and labelled on the CAA 1:500,000 and 1:250,000 charts with a 'G' symbol, as can be seen in the diagram at the top of this Airprox report. A greater density of gliders (and aircraft towing gliders) may be expected nearby at any time during daylight hours, and at any altitude up to cloudbase.

This particular day saw good thermal-soaring conditions, where gliders could be expected to climb all the way to cloudbase, including operating in IMC close to cloud above 3000ft AMSL in Class G airspace. It is concerning that the moving map software used by the DR400 pilot does not give a visual warning of UK glider sites when in 'flying' mode.

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3210 Right-of-way (c)(2) Converging.
[3] (UK) SERA.3210 Right-of-way (c)(2)(iv) Converging.
[4] The Skyway Code https://www.caa.co.uk/general-aviation/safety-publications-and-information/the-skyway-code/
[5] Military Flight Information Publications https://www.aidu.mod.uk/Milflip/
[6] The Aeronautical Information Publication https://nats-uk.ead-it.com/cms-nats/opencms/en/Publications/AIP/

Summary

An Airprox was reported when a Eurofox towing a glider and a DR400 flew into proximity 1.7NM west-southwest of Sutton Bank at 1049Z on Monday 1st August 2022. Both pilots were operating under VFR in VMC, the Eurofox pilot was not in receipt of an ATS and the DR400 pilot was in receipt of a Basic Service from Teesside Radar.

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.

The Board first considered the actions of the pilot of the Eurofox. A member with particular knowledge of gliding operations explained that it is most likely that a pilot of a tug aircraft would be on a common frequency with their glider-in-tow and their launch-control on the ground. Whilst it would normally be the case that a tug pilot would remain on that frequency until the top of their initial climb, it would not be unusual for them to remain on frequency for the duration of their flight back to the airfield. Whilst it could not be determined whether this had been the case in this instance, it was noted by members that the Eurofox pilot had not been in receipt of an ATS and had not had any situational awareness of the DR400 (**CF4**). It was further explained to the Board that it is a Standard Operating Procedure at Sutton Bank to telephone ATC at RAF Leeming every morning to advise of gliding activity. It was presumed, therefore, that the Leeming controller would have been aware of gliding in the vicinity of Sutton Bank on the day in question.

Turning their attention to the pilot of the glider being towed, it was further explained to members that, whilst they would have been in radio contact with the pilot of the tug, they would not have been expected to have contributed to lookout. The glider pilot would have been concentrating on the tow-cable and their position relative to the tug aircraft, and the responsibility for lookout would have lain with the commander of the tug aircraft for the tug-and-glider combination.

In consideration of the actions of the pilot of the DR400, members were heartened by the honest and reflective nature of their report. The Board agreed that there appeared to have been appreciable forethought given to the planning of the flight but that the execution and limited adaptation of the plan had been a significant contributory factor to this incident (**CF3**). Members turned their attention to the aspect of MATZ penetrations and concurred that, anecdotally, there appears to be a misunderstanding amongst General Aviation pilots that there is a requirement to be in receipt of a clearance to enter a MATZ. Whilst it is strongly recommended to relay an intention to enter a MATZ, and that it would be considered good airmanship to do so, there is no requirement for such. In this instance, whilst it was noted that the pilot of the DR400 had intended to remain outside the Topcliffe/Leeming CMATZ, the Airprox had actually occurred within it. Members questioned why there would have been no answer to the DR400 pilot's calls on the Topcliffe Approach and Leeming Zone frequencies on the morning in question (**CF2**). A member with particular knowledge of those agencies believed that the Topcliffe Approach may not have been manned during weekdays. The reason for the pilot of the DR400 to have received no response from the Leeming controller could not be determined. In conclusion, it was agreed that the most prudent and expeditious course of action would have been for the pilot of the DR400 to have first called on the CMATZ frequency as shown on the CAA 1:250,000 and 1:500,000 charts and the accompanying frequency card.

Addressing the use of the flight planning software that the pilot of the DR400 had mentioned in their narrative report, it was noted by members that the 'flight' mode of some systems highlighted Sutton Bank with a red ring only when the actual track being flown is within 1NM of the airfield. It was agreed that this may not have provided sufficient awareness to the pilot of the DR400 of the risk of flying in the vicinity of Sutton Bank and, indeed, the pilot of the DR400 had not had any situational awareness of the Eurofox (**CF4**).

Members next turned their attention to the actions of the Teesside controller and noted that they had not been required to monitor the flight under the terms of a Basic Service (**CF1**). The controller had not had any knowledge of the Eurofox and it was assessed that they may have had only moments from the commencement of the Basic Service until having seen primary-only radar returns in the vicinity of the DR400 and the pilot of the DR400 having reported that they had been clear of the conflict.

In consideration of the electronic conspicuity of each aircraft, members noted that the EC device fitted to the Eurofox would not have been expected to have detected the presence of the DR400, and the transponder fitted to the DR400 would not have been expected to have detected the presence of the Eurofox (**CF5**). Members wished to emphasize that additional EC equipment may have provided some useful information to aid visual acquisition and to highlight to pilots that additional funding has been made available for electronic conspicuity devices through the CAA's Electronic Conspicuity Rebate Scheme, which has been extended until 31st March 2023.[7] It was for pilots to decide on their own requirements for additional equipment according to their needs.

When determining the risk, the Board acknowledged that the pilot of the DR400 had taken emergency avoiding action but that neither pilot had seen the other aircraft in time to materially affect the separation (**CF6**). It was therefore concluded that providence had played a major part in events and that there had been a serious risk of collision (**CF7**). As such, the Board assigned a Risk Category A to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022153			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
	Flight Elements			
	• Tactical Planning and Execution			
2	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider
3	Human Factors	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
	• Situational Awareness of the Conflicting Aircraft and Action			
4	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
	• Electronic Warning System Operation and Compliance			
5	Technical	• ACAS/TCAS System Failure	An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations	Incompatible CWS equipment
	• See and Avoid			
6	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots
	• Outcome Events			
7	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

[7] https://www.caa.co.uk/general-aviation/aircraft-ownership-and-maintenance/electronic-conspicuity-devices/

Degree of Risk: A

Safety Barrier Assessment[8]

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 Teesside Radar controller was not required to monitor the flight under the terms of a Basic Service.

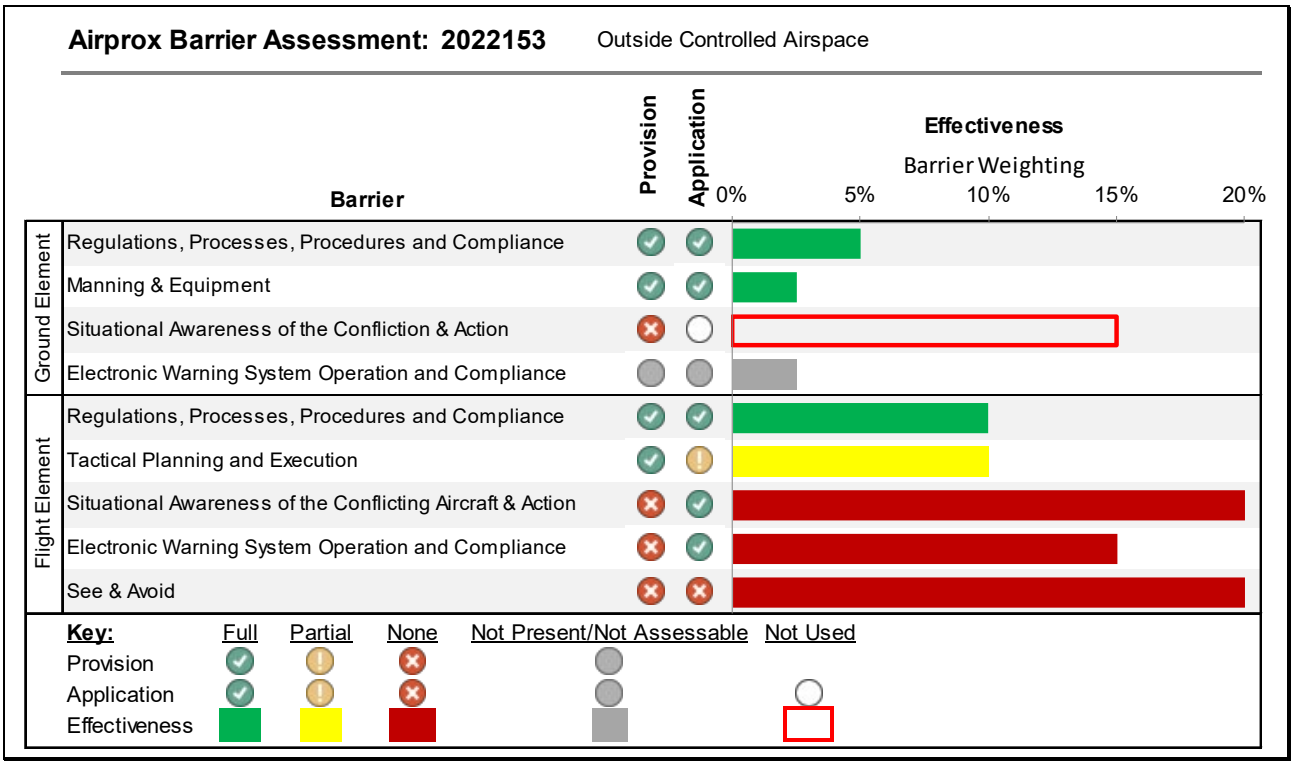
Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the DR400 pilot was not able to contact the Topcliffe Approach or Leeming Zone controllers and had not made adequate provision for adjustment to their plan accordingly.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the Eurofox pilot had no situational awareness of the DR400. The DR400 pilot had inaccurate situational awareness in respect of the gliding operations at Sutton Bank.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC device fitted to the Eurofox would not have been expected to have detected the presence of the DR400.

See and Avoid were assessed as **ineffective** because neither pilot saw the other in time to take effective action to materially increase separation.



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