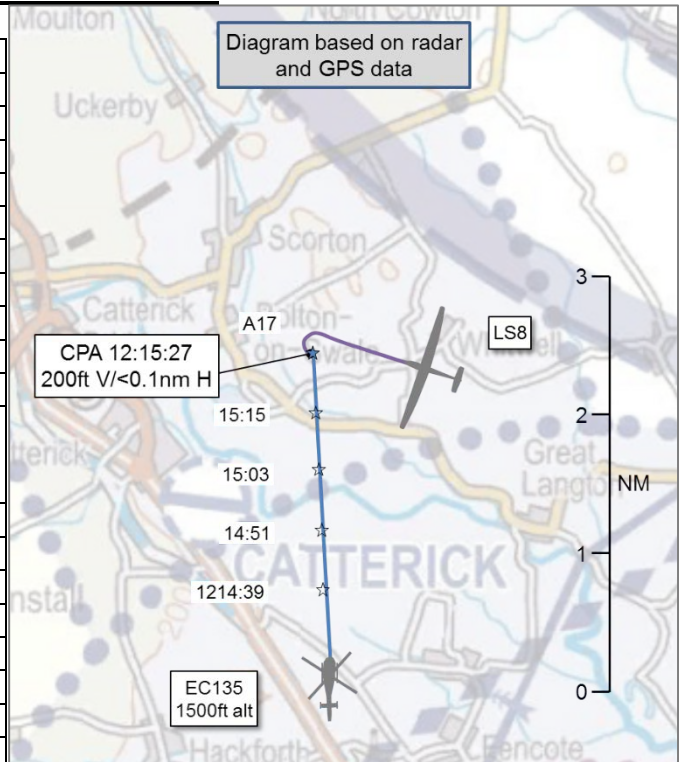


**AIRPROX REPORT No 2018249**

Date: 06 Sep 2018 Time: 1215Z Position: 5423N 00135W Location: 1.5nm NE Catterick airfield

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	EC135	LS8-18
Operator	NPAS	Civ Gld
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Listening Out
Provider	Durham	Leeming
Transponder	A,C,S	No SSR
<b>Reported</b>		
Colours	Dark blue/yellow	White
Lighting	Nose landing, nav, 3 white strobes	Not fitted
Conditions	VMC	VMC
Visibility	>10km	50km
Altitude/FL	1350ft	1560ft
Altimeter	QNH (1014hPa)	QNH
Heading	355°	225°
Speed	125kt	50kt
ACAS/TAS	TCAS I	FLARM
Alert	None	None
<b>Separation</b>		
Reported	150ft V/100m H	500ft V/500m H
Recorded	200ft V/<0.1nm H	



**THE EUROCOPTER EC135 PILOT** reports that he was on a transit flight from Wakefield to a task in Newcastle. After transiting the Leeming zone he transferred to Durham Tees Valley. During the initial call, he was passed a QNH of 1014hPa and looked in to adjust the altimeter sub-scale; this gave him an altitude 1450ft. As he looked out again he saw a white glider about 300m in front, head-on to him, in a slight climbing attitude and starting a left bank. He shouted a warning to the crew seated in the aircraft cabin and commenced a sharp turn to the left away from the glider, which passed above and to the left at no more than 150ft. The TFO seated in the rear-starboard seat saw the glider during this manoeuvre and added a marker of their current location onto the mission recording system (Figure 1). He then resumed straight and level flight and looked back for the glider, but it could not be seen. Durham ATC and NPAS Ops were informed and the sortie continued.

He assessed the risk of collision as 'High'.

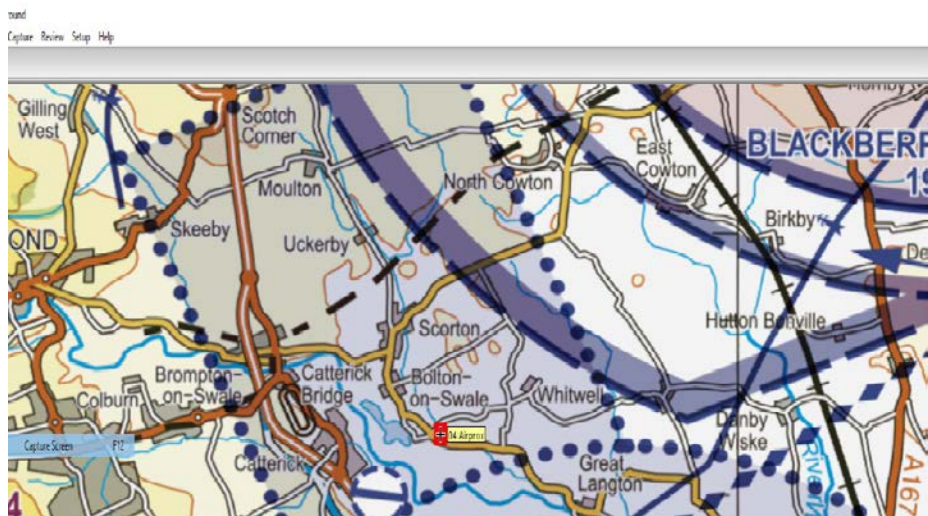


Figure 1. Airprox location.

**THE LS8 GLIDER PILOT** reports that he had taken off from Sutton Bank to fly a cross-country with a first turn-point at Richmond. He contacted Leeming ATC shortly after take-off to advise them of his intentions, location and altitude. He undertook to route around the north of Leeming's MATZ as they were operating a NOTAM'd parachuting exercise. Shortly after contacting them and staying on their frequency, he heard them informing another pilot that the last of the parachutists had landed. He declined the offer of a Basic Service in order to minimise his cockpit workload. As he was routing around the north of Leeming's MATZ, he heard a call from a helicopter pilot who was flying north and would route to the west of Leeming's MATZ. He subsequently assumed that this was the helicopter he later saw. As he proceeded towards Richmond he could see that his second turn point, Garforth, was under rain and that the leg from Richmond to Garforth was under an 8/8s layer of Stratocumulus, but well above him. He therefore decided to continue to Richmond and then reassess his options. Approaching Catterick airfield he was down to below 2000ft asl and was concentrating on finding a thermal by observing the clouds en-route, cloud cover being close to 8/8s at the time. At around 1500ft asl he found a thermal and commenced a left-hand turn, seeing as he did so a yellow helicopter approaching from the south below him, 0.5nm away. As it was obvious to him that the helicopter would pass below, he did not take any avoiding action and did not see the helicopter take any avoiding action either. As he continued with his circle he observed the helicopter flying away from him to the north. He subsequently climbed to around 5000ft asl near Richmond before returning to Sutton Bank.

He assessed the risk of collision as 'None'.

**THE LEEMING ZONE CONTROLLER** reports that he was working the EC135 pilot on a Basic Service. The pilot was on a task routeing south-to-north through the Leeming MATZ, approximately 1nm west of the Leeming overhead at 1000ft. After clearing the ATZ he requested to switch to Durham Radar to continue transit en-route to Newcastle. However, he was asked to remain with Leeming Zone until at least 5nm clear because he was flying through their climb-out lane. Once he was happy that no Leeming traffic was going to affect, he sent him en-route. He subsequently found out the following day that an Airprox had been filed. The pilot of the EC135 gave the registration of the conflicting glider. He recollected that the glider pilot did call him earlier when he was 4nm northeast of Northallerton, giving an information call as to his height, which was 3500ft. The contact was intermittent and he lost radar contact with it shortly afterwards. The glider pilot did call up approximately 45mins later, 6nm northwest of Leeming, saying that he was returning to Sutton Bank at 3000ft. The glider pilot was giving information only as to his location and was not in receipt of a Basic Service.

**THE LEEMING SUPERVISOR** reports that although the controller saw a radar return in the vicinity of the glider's reported position when he first called, it was never positively identified. As the return subsequently disappeared from radar it would not have been possible to maintain track ident. He was confident that this would have been called to the EC135 pilot should it have been showing as a radar conflict, prior to transfer to Durham Radar.

**THE DURHAM APPROACH RADAR CONTROLLER** reports that the EC135 pilot had been transferred from Leeming LARS routeing northbound. Shortly after the pilot was cleared to cross controlled airspace (at 12:15) he reported a 'near miss' with a glider. There was nothing that the controller could have done to prevent the incident because primary radar at Durham was unserviceable and the only contact seen was the EC135 squawking 0052. Leeming were aware that Durham was operating on SSR only.

### **Factual Background**

The weather at Durham Tees Valley was recorded as follows:

METAR EGNV 061150Z VRB06KT 999 FEW048 17/04 Q1014

## Analysis and Investigation

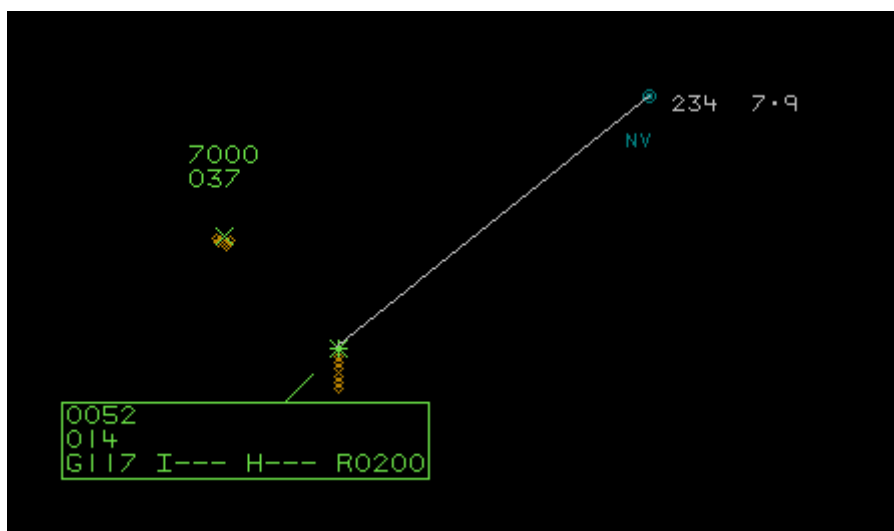
### CAA ATSI

At 1214:50, the EC135 pilot made contact with the Durham Tees Valley Radar controller and advised that they were leaving the Leeming MATZ at 1500ft and requested to transit the northwest corner of the Durham Tees Valley Zone. A clearance to transit the Zone was issued and a Basic Service was agreed.

At 1216:42, the EC135 pilot advised the controller that they had just had a 'near miss' with a white G-registered glider. The pilot confirmed that the helicopter was at 1350ft and that the glider appeared to be about 150ft above.

The glider did not display on the area radar replay and the Durham Tees Valley Primary Radar was out of service at the time of the Airprox.

Below is a screenshot of the position of the EC135 when the Airprox was reported, 7.9nm southwest of Durham Tees Valley Airport.



1216:42.

The glider was not known traffic to the Durham Tees Valley controller. The controller discharged their responsibilities in the provision of a Basic Service. The pilots were ultimately responsible for their own collision avoidance.

### Military ATM

An Airprox occurred 6nm north of RAF Leeming between an EC135 and a LS8 glider.

The EC135 had departed Wakefield and was en-route to a task in Newcastle. Having established a Basic Service with Leeming Zone, the EC135 pilot routed north of Leeming and through the climb-out lane for RW34. Once clear, the EC135 pilot was handed over to Durham Radar. Some 3 mins later, Durham informed Leeming that the EC135 had been involved in an Airprox with a glider.

The LS8 departed Sutton Bank and was transiting to a turning point at Richmond. Following departure, and approximately 4nm east of Northallerton, the LS8 pilot contacted Leeming Zone and passed details of the intended transit. The offer of a Basic Service was declined, and the Leeming Zone Controller noted that the primary radar return, believed to be the LS8, faded from radar shortly afterward. Analysis of NATS radars did not at any point show the LS8 on the EC135's track.

This airprox occurred some 3mins after Leeming Zone had transferred control of the EC135 to Durham Radar. Although the LS8 pilot was listening out on the Leeming Zone frequency and therefore had some situational awareness of the EC135, the glider was not showing on radar, meaning that no Traffic Information could be passed prior to the handover.

### **UKAB Secretariat**

The EC135 and LS8 pilots shared equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>1</sup>. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right<sup>2</sup>. If the incident geometry is considered as converging then the EC135 pilot was required to give way to the LS8 glider<sup>3</sup>.

### **Comments**

#### **BGA**

The glider pilot is to be commended for contacting Leeming and subsequently listening out to enhance his SA, although when operating in close vicinity to busy aerodromes it might be helpful to increase the frequency of position reports for the benefit of ATC and other traffic.

#### **NPAS**

Both pilots should be commended for their engagement in the reporting process and I echo the BGA comment on the value of giving ATC and other airspace users SA through position reports even if a formal service is not required. I acknowledge the Secretariat's comment on geometry but, with the EC135 pilot's observation of the glider commencing a left-hand turn, their actions opened the CPA rather than increasing the risk.

### **Summary**

An Airprox was reported when an EC135 and a LS8-18 glider flew into proximity at 1215 on Thursday 6<sup>th</sup> September 2018. Both pilots were operating under VFR in VMC, the EC135 pilot in receipt of a Basic Service from Durham Radar and the LS8-18 pilot was listening out on the Leeming Zone frequency.

### **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from both pilots, the controllers involved and from the appropriate ATC and operating authorities.

The Board first looked at the actions of the EC135 pilot and noted that he was in receipt of a Basic Service from Leeming followed by the same service from Durham. Although acknowledging that, in this instance, the LS8 was not painting on the Leeming radar, and that Durham's primary radar was not available, the civil helicopter members opined that, in general, it would probably have been prudent to have requested an improved service such as a Traffic Service given that this was a routine transit in busy airspace (the EC135 pilot later commented that the majority of his recent requests for a Traffic Service had not been successful, consequently he had stopped asking for the service). Some members wondered whether the reported cloudbase at Durham of 'Few at 4800ft' meant that it would have been possible for the EC135 pilot to have maintained a higher altitude during his transit, thereby likely avoiding the bulk of glider and light-aircraft traffic. The EC135 pilot also later explained that the weather immediately to the west of his track had been poor since passing abeam Leeds and he could not see the tops of the hills to the west of Catterick; it was not until they were further north that they were able to comfortably climb.

<sup>1</sup> SERA.3205 Proximity.

<sup>2</sup> SERA.3210 Right-of-way (c)(1) Approaching head-on.

<sup>3</sup> SERA.3210 Right-of-way (c)(2) Converging.

Turning to the actions of the LS8 pilot, the Board commended him for contacting Leeming to pass his details and then listening out on the frequency, which enabled him to hear the EC135's route whilst passing Leeming. However, whilst recognising that in the prevailing weather conditions he was working hard to ensure that he remained airborne, glider members opined that it would have been useful to have made additional calls to update his position if possible. The Board noted that on seeing the EC135 and not believing there to be any risk of a collision the glider pilot had reported that he had continued his turn, glider members commented that this was the best option for the him anyway, because a turn presents more of the glider surface to other pilots and therefore assists in visual acquisition.

The Board then noted that the glider was equipped with FLARM, but that this was not compatible with the TCAS equipment carried by the EC135. Some members wondered whether the Board should recommend that NPAS consider equipping their helicopters with FLARM in recognition of the nature of their often flying at lower levels where there was always the possibility of gliders in their vicinity. Although considered a valuable addition for electronic conspicuity in such circumstances, in the end the Board stopped short of making a formal recommendation due to uncertainty regarding the cost and complexity of installation (although noting that Supplemental Type Certificates had been issued by EASA for the fitment of FLARM to at least some EC135 variants, and that German EC135s were widely equipped with FLARM). Notwithstanding the decision not to formally recommend fitment, NPAS may therefore wish to explore options for FLARM installation.

For their part, members noted that with respect to ATC aspects the glider only showed momentarily on the Leeming controller's display and not at all on the Durham's. Consequently, neither controller was able to advise the EC135 pilot of the position of the glider.

In determining the cause of the Airprox the Board quickly agreed that the incident was probably best described as a conflict in Class G, resolved by the EC135 pilot, rather than a late sighting. This was because the glider pilot had seen the EC135 at a range of 0.5nm, and the EC135 pilot had seen the head-on glider probably as soon as was reasonably practical given its likely small visual cross-section as he returned his attention outside having changed his altimeter setting. In discussing the risk, it was apparent to the Board that each pilot had a different perception of the risk of a collision, which had influenced their actions subsequent to sighting the other aircraft. Overlaying the glider pilot's GPS track data on the EC135's radar recordings showed that CPA was less than 0.1nm horizontally and about 200ft vertically, which was in accordance with that reported by the EC135 pilot. Noting that glider pilots in general are used to flying in close proximity to other gliders, the Board acknowledged that a separation of 200ft vertically might be considered acceptable to the LS8 pilot. However, members cautioned that the LS8 pilot could not know whether the EC135 pilot had seen him, nor what the EC135 pilot might do next. Accepting that there might be a degree of startlement in the EC135 pilot's perception of 'high risk', the Board nonetheless acknowledged that he had made an emergency turn away from the glider which they agreed had been in response to a situation where there had been a collision risk and where safety had been much reduced below the norm; accordingly, they assessed the risk as Category B.

### **PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: A conflict in Class G resolved by the EC135 pilot.

Degree of Risk: B.

#### Safety Barrier Assessment<sup>4</sup>

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

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<sup>4</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

**ANSP:**

**Manning and Equipment** were assessed as **partially available** because the Durham Primary Radar was not serviceable. That being said, it was not known whether the glider would have shown on the Durham Radar display if it had been serviceable.

**Situational Awareness and Action** were assessed as **ineffective** because the glider was not showing on the Durham radar display. Consequently, Traffic Information could not be passed to the EC135 pilot.

**Flight Crew:**

**Situational Awareness and Action** were assessed as **partially effective** because although the glider pilot had overheard the EC135's generic routing when listening in on the Leeming frequency, the EC135 pilot was not aware of the presence of the glider.

**Warning System Operation and Compliance** were assessed **ineffective** because, although both aircraft were equipped with an electronic warning systems, they were not compatible.

**See and Avoid** were assessed as **partially effective** because, although the glider pilot first saw the EC135 at 0.5nm, the pilot of the helicopter did not see the glider until later than ideal.

