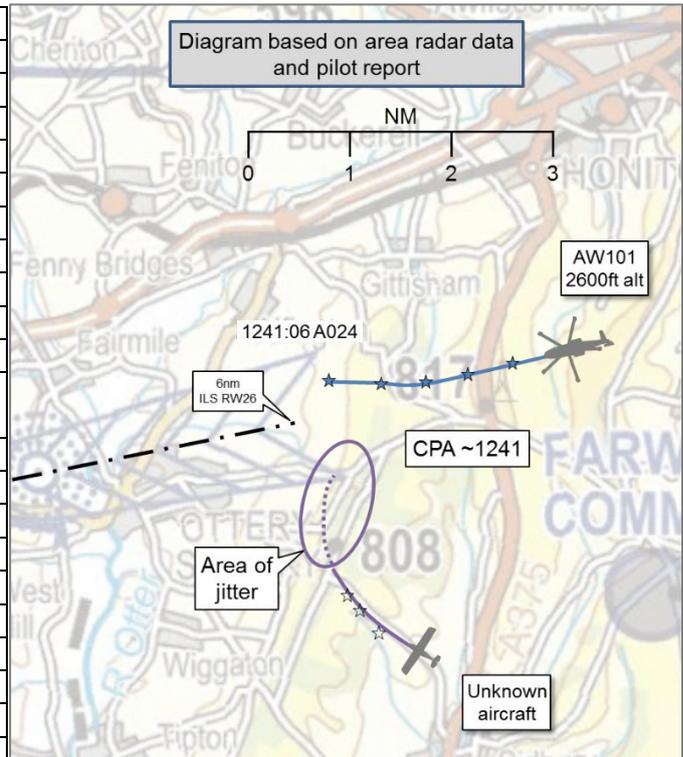


**AIRPROX REPORT No 2018024**

Date: 16 Feb 2018 Time: 1241Z Position: 5045N 00315W Location: 6nm E Exeter airport

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	AW101	Unknown aircraft
Operator	Civ Comm	Unknown
Airspace	London FIR	London FIR
Class	G	G
Rules	IFR	
Service	Traffic	
Provider	Exeter	
Altitude/FL	2200ft	
Transponder	A,C,S	Not transponding
<b>Reported</b>		Not reported
Colours	Bright white, DayGlo orange	
Lighting	Nav, anti-coll	
Conditions	VMC	
Visibility	NK	
Altitude/FL	2400ft	
Altimeter	QNH	
Heading	260°	
Speed	120kt	
ACAS/TAS	Fitted-type NK	
Alert	None	
<b>Separation</b>		
Reported	~Nil V/1nm H	NK
Recorded	NK	



**THE AW101 HELICOPTER PILOT** reports that at approximately 6 DME on the RW26 ILS at Exeter, a light-aircraft came within 1nm of the helicopter. The light-aircraft had been reported by Exeter radar (in 10-11 o'clock position) approximately 2 minutes before and was visually identified as slightly above; the Flight Test Engineer in the cabin maintained visual contact throughout. Initially, the light-aircraft was maintaining a track parallel or just closing and was being overtaken by their aircraft. After they had fully established on the ILS at approximately 6nm, the light-aircraft was seen to turn right and descend towards the helicopter. As the nose of the aircraft pointed at the helicopter, its bank-angle was seen to increase to manoeuvre behind. No avoiding action was required, and the ILS was continued. Weather was CAVOK. The light-aircraft was a small high-wing; believed to be C172 sized and red in colour. An R/T call was made to Exeter Tower to inform them of an aircraft in the approach.

He assessed the risk of collision as 'Low'.

**THE UNKNOWN PILOT** could not be traced. The aircraft was tracked on radar towards Dunkeswell but it has not been possible to determine the aircraft involved.

**THE EXETER RADAR CONTROLLER** reports that he was acting as mentor to a trainee controller who was monitoring an AW101 helicopter executing an ILS approach to RW26; its pilot was in receipt of a Traffic Service. At approximately 8nm final, Traffic Information on unknown traffic was passed to the AW101 pilot as 10 o'clock range 3nm, no height information. Shortly afterwards, at around 1.6nm distance, the AW101 pilot reported the traffic in sight 300ft above. The AW101 pilot continued his approach and was instructed to contact Exeter Tower.

## Factual Background

The weather at Exeter was recorded as follows:

EGTE 161250Z 19010KT 9999 FEW032 09/03 Q1024

## Analysis and Investigation

### CAA ATSI

Note: Although the AW101 pilot had been receiving a Traffic Service from Exeter Radar, at the time of the Airprox he had already been transferred to Exeter Tower.

The AW101 pilot contacted Exeter Radar at 1230:00, 25nm east-northeast of Exeter Airport, and a Traffic Service was agreed. The trainee controller, under the supervision of an On the Job Training Instructor (OJTI), was also providing Air Traffic Services to a number of other pilots, including two who were carrying out procedural approaches from the hold at Exeter. At 1233:18, (Figure 1), the controller locked the AW101 pilot on their heading and cleared them to descend, (when ready), to an altitude of 2600ft in preparation for an ILS approach at Exeter.

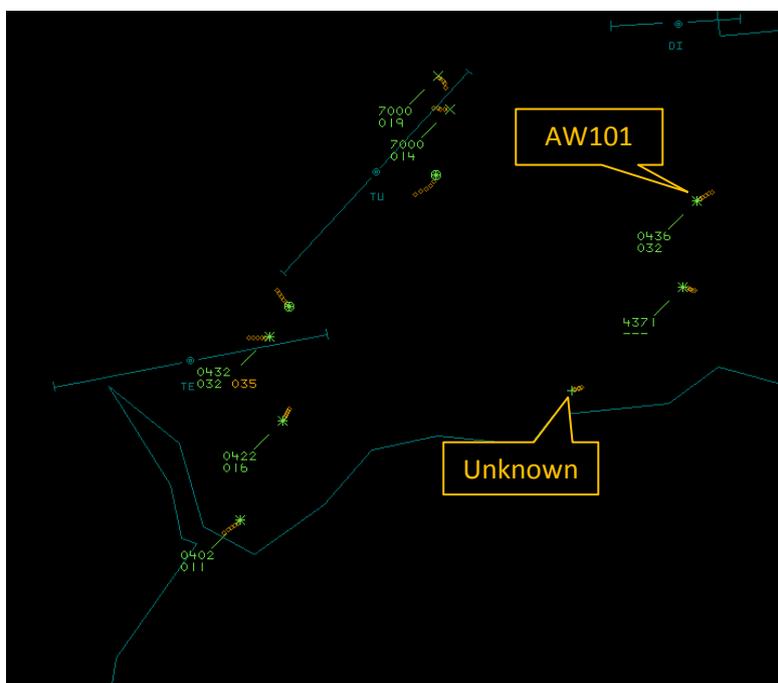


Figure 1 – 1233:18.

At 1233:50 the controller passed Traffic Information on traffic converging, (code 4371 on Figure 1), from the south which the pilot of the AW101 acknowledged and then subsequently reported visual-with at 1234:20.

At 1237:40 the controller passed Traffic Information to the AW101 pilot on traffic descending in the hold above them. The controller then became involved with a pilot who had free-called them, as well as another aircraft leaving the frequency to go en-route. The situation at 1239:20 is shown in Figure 2.



Figure 2 – 1239:20.

At 1239:32, the intentions of the AW101 pilot after the approach were discussed and agreed.

At 1240:05, the controller passed Traffic Information to the AW101 pilot on the unknown aircraft, advising incorrectly that it was crossing from the AW101's right to left (Figure 3).

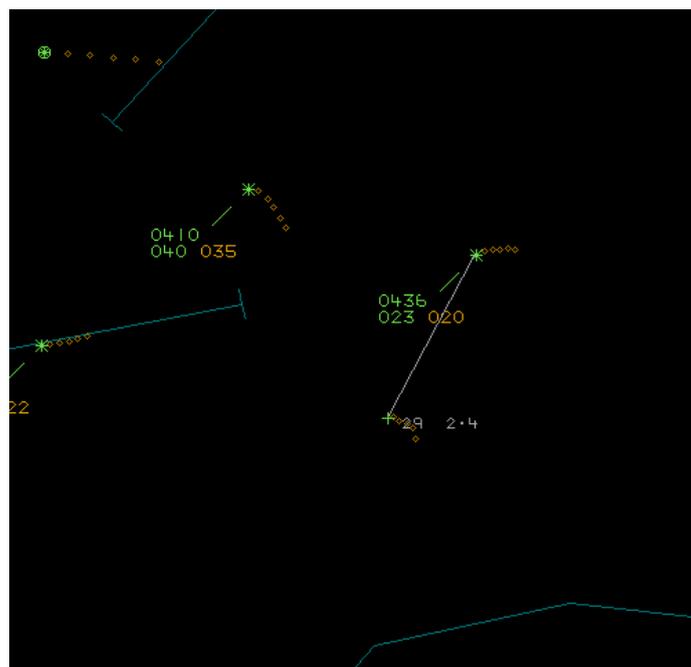


Figure 3 – 1240:05.

At 1240:18 although not updating the actual position of the unknown aircraft in relation to the AW101, the controller corrected themselves by advising the AW101 pilot that the unknown traffic was crossing from left to right, (Figure 4).

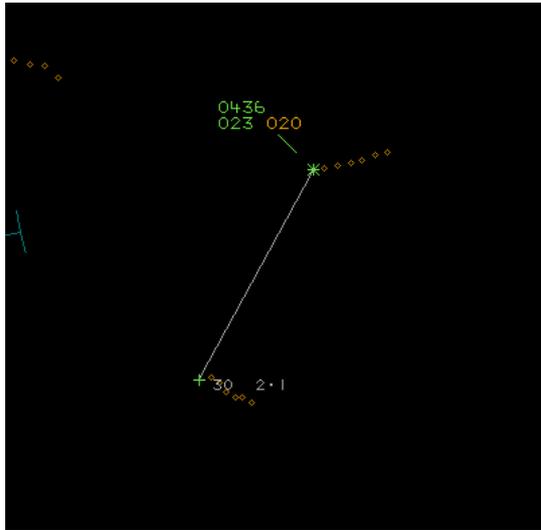


Figure 4 – 1240:18.



Figure 5 – 1240:30.

At 1240:30 the pilot of the AW101 reported visual with the traffic (Figure 5).

At 1240:38 the pilot of the AW101 reported the traffic to be 300ft above them (Figure 6).

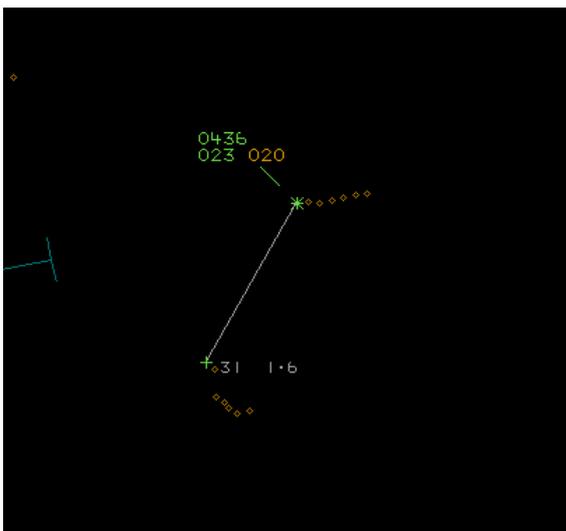


Figure 6 – 1240:38.



Figure 7 – 1240:50.

At 1240:50 the radar controller instructed the AW101 pilot to contact Exeter Tower.

Due to limited coverage in this area of the area radar used by ATSI, at this point the radar return of the unknown aircraft had become intermittent. However, comparing it with the Exeter radar recording, Figure 7 appears to show the last observed position of the unknown aircraft.

The AW101 pilot established contact with Exeter Tower at 1241:08, and was instructed to continue approach as they were number two to another helicopter. At 1241:28 the pilot of the AW101 reported that the unknown aircraft was at the same level as them, and seen to be taking avoiding action to pass behind. They confirmed with the Aerodrome controller that they had previously been passed Traffic Information on the aircraft by the Radar controller. The unknown aircraft did not reappear on the area radar recording until 1242:22. Figures 8-10 show the Exeter Radar recordings during this period (unknown aircraft ringed), but do not give a true representation of the display available to the controller, as some shots are close-ups of the event.

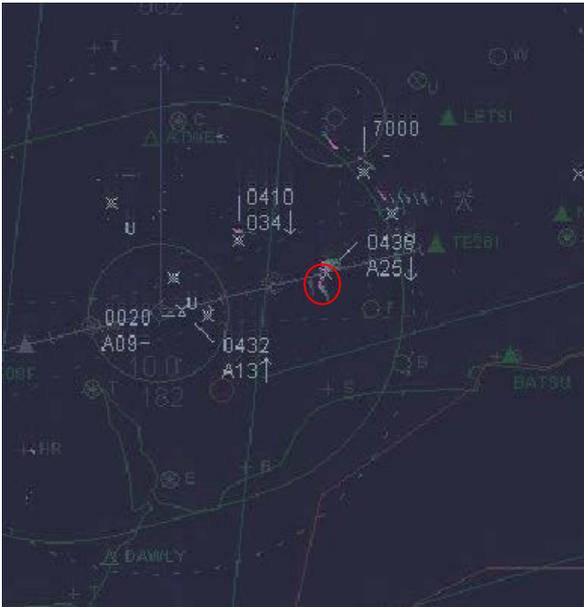


Figure 8 – 1241:08



Figure 9 – 1241:24.



Figure 10 - 1241:43.

Appropriate Traffic Information was passed by the Radar controller, and the pilot of the AW101 appeared to maintain visual contact with the unknown aircraft from 1240:30 onwards. The pilot also reported that they did not feel it necessary to take their own avoiding action.

Although not a contributing factor in the incident, ATSI noted that Traffic Information which had been passed to the AW101 pilot on another aircraft earlier, and subsequently on the unknown aircraft, could be considered to be late when comparing with the requirements of CAP774, The UK Flight Information Services<sup>1</sup>, which states:

*'The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information.'*

<sup>1</sup> Paragraph 3.5.

*Traffic is normally considered to be relevant when, in the judgement of the controller, the conflicting aircraft's observed flight profile indicates that it will pass within 3 NM and, where level information is available, 3,000 ft of the aircraft in receipt of the Traffic Service or its level-band if manoeuvring within a level block. However, controllers may also use their judgment to decide on occasions when such traffic is not relevant, e.g. passing behind or within the parameters but diverging. Controllers shall aim to pass information on relevant traffic before the conflicting aircraft is within 5 NM, in order to give the pilot sufficient time to meet his collision avoidance responsibilities and to allow for an update in traffic information if considered necessary.*

Further, and not commented-on within the unit investigation report, although Traffic Information had been passed, and the pilot of the AW101 had reported visual, ATSI would consider it to have been best practice to have retained the pilot on the radar frequency until clear of conflict with the unknown aircraft.

### **UKAB Secretariat**

The AW101 pilot and the pilot of the unknown aircraft shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard. Because the incident geometry is considered as converging then the pilot of the unknown aircraft was required to give way to the AW101<sup>2</sup>, which he appeared to do, although he was closer to the AW101 than would be desired.

### **Summary**

An Airprox was reported when an AW101 and an unknown aircraft flew into proximity near Exeter Airport at 1245hrs on Friday 16<sup>th</sup> February 2018. The AW101 pilot was operating under IFR in VMC, initially in receipt of a Traffic Service from Exeter radar until he was transferred to the Tower frequency shortly before CPA.

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

Information available included reports from the pilot of the AW101, the controller concerned, radar recordings and reports from the appropriate ATC and operating authorities.

The Board was disappointed that the unknown aircraft could not be traced because this meant that they could not allow for the pilot's perception of what had occurred when coming to their conclusions. Notwithstanding, members felt that there was sufficient information available from the other reports with which to come to a conclusion. In view of their routing close to Exeter and through the Instrument approach, the Board considered that it would have been appropriate for the unknown aircraft's pilot to have contacted Exeter ATC; apart from being provided with information about Exeter's traffic, this would also have allowed the aircraft to be identified and integrated more effectively with other Exeter traffic.

The Board noted that the AW101 pilot, operating under IFR, was being vectored for an ILS approach to RW26 by the Exeter Radar controller. The radar position was being operated by a mentor and trainee, who were providing the AW101 pilot with a Traffic Service at that time. When on final approach at 8nm Traffic Information was issued about unknown traffic in his 10 o'clock position at 3nm, crossing from right to left. No level information was available as the unknown aircraft, for whatever reason, was not transponding. (UKAB note: SERA.13001 states that when an aircraft carries a serviceable SSR transponder, the pilot shall operate the transponder at all times during flight, unless the aircraft does not sufficient electrical power.) The unknown aircraft was actually crossing from left to right, and the Traffic Information was soon corrected. Shortly afterwards the AW101 pilot reported visual with the traffic, reporting that it was 300ft above them. The radar recording shows that the two aircraft were now 1.9nm apart.

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

As a result of the AW101 pilot reporting visual with the unknown traffic, the controller decided to instruct him to transfer to the Tower frequency. A Civil Controller member considered that this was appropriate action because the Radar controller had fulfilled his duties of a Traffic Service, and transferring the aircraft would allow the Aerodrome controller to issue any appropriate action or information concerning the circuit or a landing clearance.

Some members wondered whether the AW101 pilot should have broken off his approach earlier, but it was apparent from the radar recordings that, initially, the helicopter was overtaking the unknown aircraft on a virtually parallel track. It was only when the aircraft turned towards them and descended that the AW101 pilot became concerned. At that point, the unknown aircraft’s bank-angle was seen to increase to manoeuvre behind their helicopter, thus reducing the collision risk, in his opinion, to low. Noting that he had reported that there had been no need to take any avoiding action, members agreed that the AW101 pilot’s actions had been appropriate for the circumstances with which he had been presented.

The Board then turned its attention to the cause and risk of the Airprox. It was quickly decided that the incident was probably best described as the AW101 pilot being concerned by the proximity of the unknown light aircraft. In terms of risk, members noted that the AW101 pilot had not considered it necessary to take any avoiding action, and it appeared from the increase in bank-angle of the unknown aircraft that its pilot had seen the AW101 as he had turned towards it and had taken timely and effective avoiding action. Although it was not possible to determine from the radar recording the horizontal distance between the two aircraft at CPA because of track jitter, members noted that the AW101 pilot reported that the minimum horizontal separation was 1nm. Even though some members thought that this might have been an over-estimation of the separation, in view of his perceived separation and assessment of ‘low risk of a collision’, it was considered that normal safety standards had pertained in what was Class G airspace where see-and-avoid was the main barrier to collisions. Consequently, the incident was assessed as risk Category E.

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

Cause: The AW101 pilot was concerned by the proximity of the unknown light aircraft.

Degree of Risk: E.

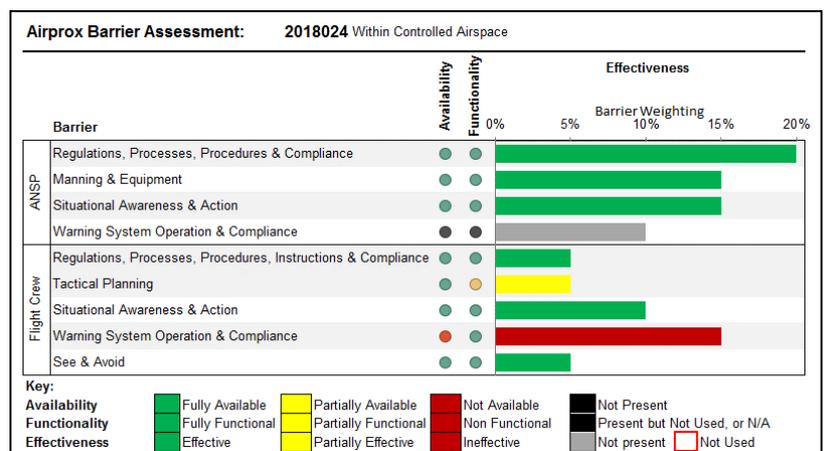
Safety Barrier Assessment<sup>3</sup>

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

**Flight Crew:**

**Tactical Planning** was assessed as **partially effective** because the pilot of the light aircraft routed through an instrument approach at a similar level to an aircraft that would be established on the approach.

**Warning System Operation and Compliance** were assessed as **ineffective** because the AW101’s warning system was not able to activate because the other aircraft was not transponding.



<sup>3</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](http://www.ukab.co.uk).