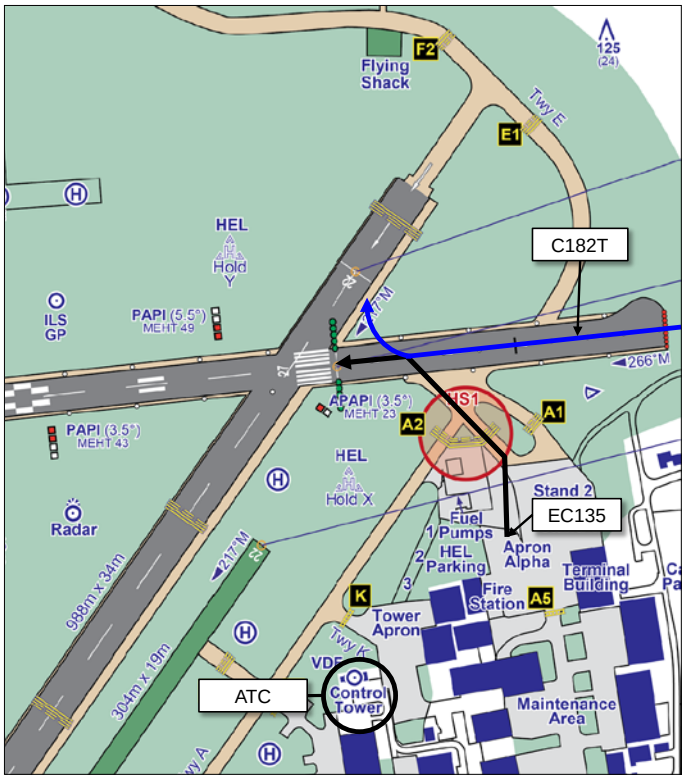
AIRPROX REPORT No 2013026

Date/Time: 29 Apr 2013 1303Z

Position: 5154N 00210W (Final RW27 Gloucester Airport - elev 101ft)

Airspace: ATZ (*Class:G*)

	Reporting Ac	*Reported Ac*
Type:	C182T	EC135
Operator:	Civ Trg	Civ Comm
Alt/FL:	100ft ↓ (1017hPa)	NR
Weather:	VMC CAVOK	VMC CAVOK
Visibility:	>10km	>10km
Reported Separation:	10ft V/15-20ftH	NR
Recorded Separation:	NK	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE C182 PILOT reports flying a blue and white ac with taxi, landing and strobe lights all switched on, squawking Mode 3/A 7000 and Mode S selected. He was heading 266° at 75kts on short final to land on RW27 and had received a clearance to land from a glide approach. He heard a helicopter being cleared to remain S of RW27 but as he approached 100ft he saw the EC135 appear from under his L wing and enter the runway in front of his ac. He applied full power and executed a 'hard right turn' and estimated that he achieved separation of 10ft V; he assessed the risk of collision as 'High'.

THE EC135 PILOT reports starting his yellow helicopter, on the 'H' near to the refuelling area preparing for a W'ly departure. The ac's HISLs and transponder were on with Mode 3/A 0036 and modes S and C selected. On reporting ready for departure the pilot was 'given take-off clearance for RW27 on track to the west' he thought. He does not recall hearing any instruction to remain S of RW 27 and so did not readback any such instruction. He taxied to RW27 and on reaching the threshold commenced a normal take-off profile. He does not recall any other transmissions up to this point but, shortly after commencing his climb, the pilot recalls hearing another pilot transmitting that he was going around and he thought it was from an IF training ac going around from its instrument approach. The EC135 pilot climbed the ac to 500ft and continued to the W, switching to the Gloucester Approach (Gloster APP) frequency as he cleared the ATZ.

Once he had been informed of this Airprox, the EC135 pilot opined that the occurrence had been caused by his insufficient lookout before entering the RW and because ATC had not noticed his incorrect read-back of his clearance. He further noted that it is likely that he did not hear any other transmissions from the C182 pilot because he was busy preparing for his afternoon sortie.

THE Gloucestershire ADC (Gloster Tower) reports that the C182 was on final to RW27 and had been issued with a clearance to land when the EC135 requested departure from Apron A. He instructed the EC135 pilot to remain S of RW27 and issued him a clearance to take off. The ADC reports that the EC135 appeared to enter RW27 at the threshold whilst the C182 was on short final but, due to the helicopter's height and his viewpoint, it was not clear how far the EC135 had infringed the RW. The ADC saw the C182 execute a 90° R turn to avoid the EC135.

[UKAB Note 1: The Gloucester Weather at 1250Z was:
METAR EGBJ 291250Z 28013KT 9999 SCT048 13/00 Q1018]

ATSI reports that:

Background:

The Gloucester ATZ comprises a circle radius 2nm, centred on the midpoint of RW09/27 and extending to a height of 2000ft above aerodrome level (elevation 101ft).

The C182 was operating VFR in the visual RH cct for RW27 and was approaching short final on a glide approach for a full stop landing. The C182 was in receipt of an Aerodrome Control Service (BS) from Gloster Tower on frequency 122.9MHz. The EC135 was departing from the Apron, S of the refuelling area and just out of sight of the VCR (Figure 1) for a VFR W'ly departure to the Forest of Dean and was in receipt of an Aerodrome Control Service (BS) from Gloster Tower on frequency 122.9MHz.

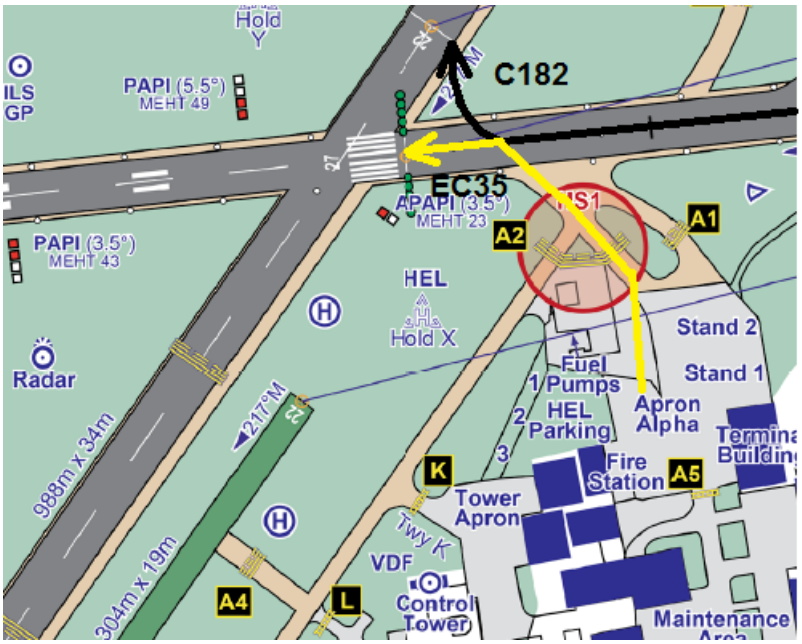


Figure 1

Gloucester ATSU, were providing a split Aerodrome and Approach Control Service from the VCR without the aid of surveillance equipment. The ADC was an experienced controller and fully rated OJTI and UCE. In recent months the controller has been involved extensively in Approach OJT instruction but records indicate that the he had completed the required non-OJT (25%) period of duty. The controller indicated that he considered traffic levels and workload as light with no distractions.

The AIP Page AD 2-EGBJ-1-7, states:

> 'Paragraph 5(a): Three grass Helicopter training areas; Heli Northeast, Northwest and Southwest are established. An additional aiming point is provided at Heli South, adjacent to Taxiway J. Refer to aerodrome chart. Helicopter Holding points 'Y' and 'X' established north and south of RW 27 threshold.
>
> Paragraph 5(b)…

Paragraph 5(c)…

In order to reduce RT loading and avoid conflict between rotary and fixed wing circuits, standardised phraseology and procedures are established for helicopter operations. The standardised phrases are assigned the following meanings:

Standard Helicopter Departure: Departure into wind or as required, remaining clear of the fixed-wing runway in use, turning to depart circuit at right angles to runway in use (i.e. beneath downwind leg), not above 750 ft QFE, before departing ATZ on required track.

Standard Helicopter Arrival...

Standard Helicopter Circuits…'

CAA ATSI had access to Gloucester RTF and radar recording, area radar recording, written reports from the ADC, the two pilots concerned, together with a report from the ATSU and the helicopter operator. CAA ATSI interviewed the controller.

Factual History:

The C182 was in the RH cct for RW27 and the EC135 was situated on the Apron adjacent to the refuelling point and was just out of the line of sight from the Tower (Figure 2).

Figure 2. View from the VCR

At 1259:55, the EC135 was cleared for start with temperature +13 and QNH 1018.

At 1300:25, the C182 called downwind to land and Gloster Tower instructed the C182 pilot to report on final.

At 1302:33 the ADC observed the C182 on final and transmitted, "(C182)c/s *clear touch and go two niner zero degrees one three.*" The C182 pilot replied, "(C182)c/*s that's final to land glide approach.*" The ADC responded, "(C182)c/s *clear to land*," which was acknowledged correctly.

At 1303:00, the EC135 called ready for departure. Gloster Tower replied, "(EC135)c/s *remain south of runway two seven clear for take-off on track wind two niner zero degrees one four*." The EC135 pilot read-back, "(EC135)c/s *er clear take off er two seven on track*."

When questioned, the ADC indicated that the EC135 appeared from behind the hangar and viewed from the VCR, due to parallax, it was difficult to determine if the EC135 was routeing towards X-ray or the runway. The controller's expectation was that it was routeing S of the Rwy. However, when the controller recognised that the EC135 had entered RW27 at the threshold whilst the C182 was on short final, it was too late to react. The C182 was observed to take avoiding action by executing a 90° R turn. The controller indicated that the C182 was observed to be approximately 100ft above the EC135.

At 1303:51, Gloster Tower started to transmit, "(C182)c/s *s..*" and at the same time the C182 pilot reported, "(C182)c/*s is going around*." This was acknowledged by the ADC.

The written report from the EC135 indicated that after receiving take off clearance he lifted and air taxied to enter RW27 and then commenced a normal take off profile accelerating and climbing away. As the EC135 climbed, the pilot heard an aircraft report, "*going around*" and the EC135 pilot stopped the climb at 500ft and continued W to clear the ATZ.

The C182 pilot's written report indicated that as the C182 approached approximately 100ft from touchdown, he observed the helicopter under the port wing climbing from below. The C182 pilot reported going around and the pilot applied full power and turned R to avoid the helicopter.

At 1304:23, the EC135 was transferred to Gloster APP on frequency 128.550MHz.

At 1305:30, the ADC instructed the C182 to report final number 1 and advised the pilot that he would discuss the occurrence later on the phone.

When interviewed the controller reported that he had not detected the incorrect readback from the EC135 and had the expectation that the helicopter would remain S of the RW routeing via Hold X-ray. The controller explained that there is a line marked on the grass area parallel to the RW, running through hold X-ray which helicopters normally keep S of. When questioned, the controller confirmed that this arrangement is one familiar to locally based helicopters. The controller considered that initial taxi clearance to a holding point followed by standard take off clearance might have helped to prevent the occurrence.

The EC135 operating company's written report considered it unusual that the helicopter was given take off clearance from the helipad. The ATSU report commented that departing a helicopter from the apron with a restriction to remain S is 'uncommon but not unusual'.

In discussion the ATSU advised that they are reviewing helicopter procedures with a view to having circular flow from the Heli-north and south positions. As a result of this incident the ANSP identified the following:

> Guidance to be offered to all ATCOs regarding the use of designated holding point, heli hold or other location for helicopter departures when simultaneous fixed wing and rotary movement are taking place.
>
> The forthcoming procedure review associated with ILS operations will include a review of helicopter circuit/departure procedures.
>
> The ADC involved in this occurrence should ensure that his period of duty includes sufficient Tower sessions.

Analysis:

The ADC, whilst experienced, had in recent months spent a greater percentage of time in the approach function.

The EC135 was out of the controller's line of sight and it was regarded as uncommon for the take off clearance to be given from the apron area. The AIP promulgates standard RTF phraseology and procedures for helicopter operations at Gloucester. The Manual of Air Traffic Services (MATS) Part 1, Appendix E. page 15, paragraph 10.3.3, states:

> 'At aerodromes provided with ATC, when helicopters land or take-off at locations not on the manoeuvring area (e.g. aprons, maintenance areas, sites adjacent to the aerodrome), at locations not in sight of the VCR, or at unlit locations at night, the phrase "land at your discretion" or "take-off at your discretion", as appropriate, shall be used to authorise the manoeuvres. Relevant traffic information on other aircraft (airborne or on the ground) shall also be passed.'

The EC135 pilot was not based at Gloucester and may not have been familiar with non-standard procedures or arrangements used by local operators. The Tower gave the EC135 take off clearance from the Apron when the EC135 was not visual to the ADC and the recommended phraseology was not used and no TI was passed regarding the status or position of cct traffic.

The controller gave an instruction, "*remain south of runway two seven clear for take-off on track*". It was not clear if the EC135 pilot heard the full clearance but his read-back was incorrect, "*clear take off er two seven on track*." This incorrect read-back was not detected by the ADC and this resulted in the EC135 making a normal departure from RW 27.

The AIP and MATS Part1 give guidance regarding phraseology and procedures for helicopter departures. The ADC's plan to give the EC135 take off clearance from the Apron remaining S of the Rwy was probably considered to be expeditious. However, the EC135 was not a locally based helicopter and without appropriate TI, the EC135 pilot was probably not aware of the position of cct traffic. MATS Part 1, Section 2, Chapter 1, Page 1, Paragraph 2.1, states:

> 'Aerodrome Control is responsible for issuing information and instructions to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic and to assist pilots in preventing collisions between:
>
> a) aircraft flying in, and in the vicinity of, the ATZ;
>
> b) aircraft taking-off and landing..'

The ADC was unable to explain why he had not detected the incorrect read-back. The ATSU reported that this was uncharacteristic of the controller's normal performance.

Conclusions:

The Airprox occurred when, as a result of an incorrect read-back which was not detected by the ADC, the EC135 entered RW27 for departure at the point when the C182 was approaching the threshold. The C182 pilot sighted the helicopter and took avoiding action by making a 90 degree right turn.

The expeditious departure from the Apron, which was out of the ADC's line of sight, together with the lack of TI regarding the position of cct traffic and inappropriate phraseology for Apron departures were considered to be contributory factors.

Recommendations:

1. CAA ATSI is content with the actions already taken by the ATSU.

2. It is recommended that the ATSU review procedures for helicopter operations to ensure that helicopters are routed from the Apron to an intermediate holding point, helicopter hold or helicopter training areas as appropriate, prior to being issued with take-off clearance.

3. It is recommended that the ATSU issue an instruction reminding controllers of the content of MATS Part 1, Appendix E, Page 15, Paragraph 10.3, for circumstances when helicopters land or take off from an area which is not on the manoeuvring area (i.e. Apron) or which is not in sight of the VCR.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available to the Board consisted of reports from the pilots and the ADC, as well as radar recordings and the RT transcript.

Discussion focussed initially on the ADC's actions. The Board agreed that giving the EC 135 pilot clearance to take off at all when the C182 was on short final was unwise and, even if the ac had not flown in to confliction, there was a risk of rotor-wash affecting the C182 unnecessarily. It was apparent that the ADC's clearance to '*remain south of runway two seven'* had been misinterpreted by the EC135 pilot to mean a clearance to take off on RW27, and his incorrect readback supported this interpretation. The pilot did not read back all of the safety significant elements of the clearance, as he is required to do, and the Controller did not detect the incorrect readback. Members thought that the term '*on-track*' could be interpreted in several ways and could have reinforced a freedom to proceed in the EC135 pilot's mind. It was also noted that the ADC did not pass any TI about the C182 to the EC135 pilot, which may have improved his situational awareness. The CAA ATC Advisor explained that the correct use of ATC phraseology should have reinforced safety barriers but, in this case, the poor choice of words weakened other opportunities to break the 'incident chain'.

The discussion turned to the EC135 pilot's actions. It was clear from his readback that the EC135 pilot thought, erroneously, that he had been cleared to enter the RW; a helicopter pilot Member agreed with the EC135 pilot's own assessment that he should have visually scanned the approach to the RW before entering it. The Member also explained that as it is not routine for helicopters to depart from the RW, it is important that pilots and controllers take extra care to ensure they understand the clearances given and received when they involve either specific use or avoidance of the active RW.

The Board discussed the actions of the C182 pilot and it was agreed that he did not contribute to the confliction and that his avoiding action was the best that could reasonably be achieved in the circumstances.

Some Board Members felt that the cause of the Airprox was that the EC135 pilot had flown in to confliction with the C182, but others Members felt that the misunderstanding from the take-off clearance and missed readback were causal. It was agreed that the cause was that the controller had not detected the EC135 pilot's incorrect read-back and allowed him to depart into conflict with the C182 on final. The Board decided contributory factors were that the EC135 had not visually 'cleared' the approach to the RW before entering it and the lack of TI from the ADC about the C182's position. The Board agreed that there was a definite risk of collision and it was likely that only the C182 pilot's very late sighting and action had avoided it; the Risk was assessed as A.

The Board agreed that the safety barriers pertinent to this Airprox were ATC and aircrew rules and procedures, visual sighting, controller and aircrew action and situational awareness gained from RT.

It was agreed that overall these barriers had not been effective and the Airprox was allocated a score of 100 on the Event Risk Classification Matrix.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The controller did not detect the EC135 pilot's incorrect read-back and allowed him to depart into conflict with the C182 on final.

Contributory factors:

1. Lack of TI.
2. The EC135 pilot did not 'clear' the approach before entering the runway.

Degree of Risk: A.

ERC Score: 100.