

## **AIRPROX REPORT No 2013024**

Date/Time: 9 Apr 2013 1415Z

Position: 5548N 00434W  
(6.5nm SW Glasgow - elev 26ft)

Airspace: CTR (Class: D)

Reporting Ac Reported Ac

Type: A320 C206

Operator: CAT Civ Comm

Alt/FL: 2000ft↓ 2600ft  
QNH QNH (1004hPa)

Weather: IMC NR VMC NR

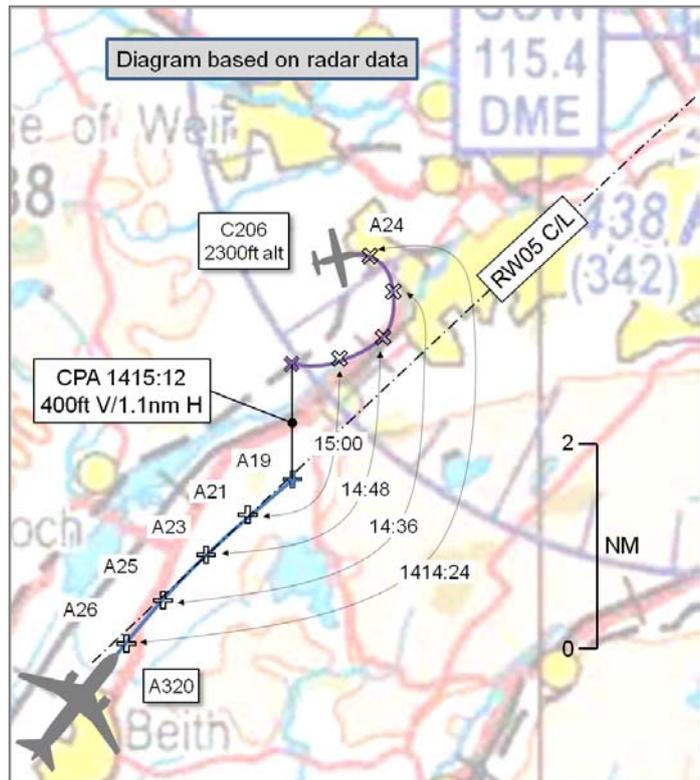
Visibility: 3000m >10km

Reported Separation:

1-2nm H 300ft V/1nm H

Recorded Separation:

400ft V/1.1nm H  
0ft V/2.4nm H



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

**THE A320 PILOT** reports inbound to Glasgow, IFR and in communication with Glasgow TWR, squawking with Modes S and C. Descending at 185kt on the ILS RW05 in IMC whilst 7nm final he became increasingly concerned about a TCAS contact from a survey ac, previously notified, which threatened to become uncomfortably close. Closure rate was significant and he was aware from the dialogue between ATC and the other flight that its compliance with instructions may have been less than optimal and not as ATC had originally intended. Although cognisant that TCAS azimuth resolution was always suspect, this ac had been accurate and the combination of range rate, range, azimuth and the ATC concerned transmissions led him to believe that the increasingly adjacent track was a potential problem. He thought a TCAS TA was imminent as the other ac was showing co-alt or just below so he took pre-emptive avoiding action. Although his options were limited and a potential RA would have been problematical, a go-around at this stage would have increased adjacency so he disengaged the AP and manoeuvred his ac to the S of the C/L. Passing through 2000ft, at the cloudbase, he observed a Cessna pass down their LH side by about 1-2nm; the visibility at the cloudbase was <3km. They subsequently re-established on the ILS and configured to land. He assessed the risk as Medium.

**THE C206 PILOT** reports flying an aerial survey flight at altitude 2600ft [QNH 1004hPa] at 125kt within Glasgow CAS and in receipt of a radar service, he thought, squawking an assigned code with Modes S and C. The visibility was >10km in VMC and the ac was coloured white/blue/yellow; ac lighting was not reported. During one of his RH turns from the end of a run track 136° to intercept a line track of 216°, which had been previously approved by ATC, he saw an A319, he thought, on final approach for RW05 and reported to ATC that he was visual with traffic. The A319 [sic] was about 300ft below and descending on the RW C/L and he believed it was not in conflict. The Tower controller then asked him to continue his R turn which he acknowledged and carried out without descending. During this turn he did not cross the RW extended C/L and he maintained visual contact with the A319 [sic] at all times. He assessed the risk as None.

**THE GLASGOW AIR CONTROLLER** reports the C206 commenced a L turn away from the approach but then turned R towards an inbound A320 before continuing to turn NW bound. TI was

passed to both flights; the C206 pilot reported visual with the A320 and did not feel there was a problem. However the A320 crew did not see the C206, he thought, and although the crew did not receive a TCAS RA they felt they had to take avoiding action by turning R slightly before continuing the approach. The A320 Captain felt that this was an Airprox and stated he would file a report.

**ATSI** reports an Airprox occurred when an Airbus A320 (A320) came into proximity with a Cessna 206H (C206) in Class D airspace, on final approach to RW05 at Glasgow A/D.

## Background

The A320 pilot was operating under IFR on a flight from London to Glasgow and was in receipt of an ACS from Glasgow TWR [118.800MHz]. The C206 pilot was operating under VFR on a survey flight out of Cumbernauld A/D and was also in receipt of an ACS from Glasgow TWR. The C206 was squawking 2602.

Training was in progress on the Glasgow AIR position.

[UKAB Note(1): The Glasgow TWR function is divided into 2: AIR, which controls arrivals and departures, and GND, which controls ground movements]

CAA ATSI had access to written reports from the A320 and C206 pilots and the Glasgow AIR controller, area and local radar recordings, RTF recordings and transcripts of the Glasgow AIR and RAD frequencies together with the unit investigation report from Glasgow ATC. CAA ATSI also interviewed the Glasgow RAD and AIR controllers.

The Glasgow weather was recorded as follows:

EGPF 091350Z 07016KT 040V100 9999 SCT044 08/M03 Q1004

EGPF 091420Z 08015KT 9999 FEW044 08/M03 Q1004

## Factual History

Watch changeover took place at 1300. The RAD recalled taking over the position and being informed by the previous watch that the C206 pilot was operating on a survey detail and was remaining on the AIR frequency as it had a bigger operational impact on the AIR's traffic. The AIR was informed during handover that the C206 was operating a survey detail.

At 1406:55, the A320 crew contacted Glasgow RAD and was informed that they would be given vectors for the ILS approach to RW05. At 1412:12, after the A320 pilot was established on a radar heading of 300° and had been given descent to 3000ft, the Glasgow RAD passed TI on the C206, *"...doing a survey abeam a five mile final for zero five operating up to two thousand five hundred feet or west of the five mile final and remaining clear of the zero five approach"*. This was acknowledged by the pilot. At 1413:00, the A320 pilot was given a heading of 020° to establish on the localiser.

At 1413:18, the C206 was approximately 2.5nm N of the RW05 extended C/L and the AIR asked the C206 pilot how much further towards the approach he was intending to go. The AIR had seen the A320 positioning towards final on the ATM and had recognised the potential for conflict with the C206. The C206 pilot replied that he was requesting 'a 180' *"now"*. This was approved by the AIR. The AIR stated that he was reluctant to dictate a direction of turn to the C206 pilot as he was aware that he would prefer to turn according to his operational requirements and at that point the controller was happy to monitor the situation. The C206 travelled on its existing track for a further 0.7nm before the pilot turned to the L, away from the A320, at 1413:35 (see Figure 1). The AIR observed the L turn and believed that the C206 pilot would continue in a 180° turn to the L, away from the A320. The AIR's focus changed to a departure that was potentially conflicting with a helicopter operating close to the climb-out for RW05.

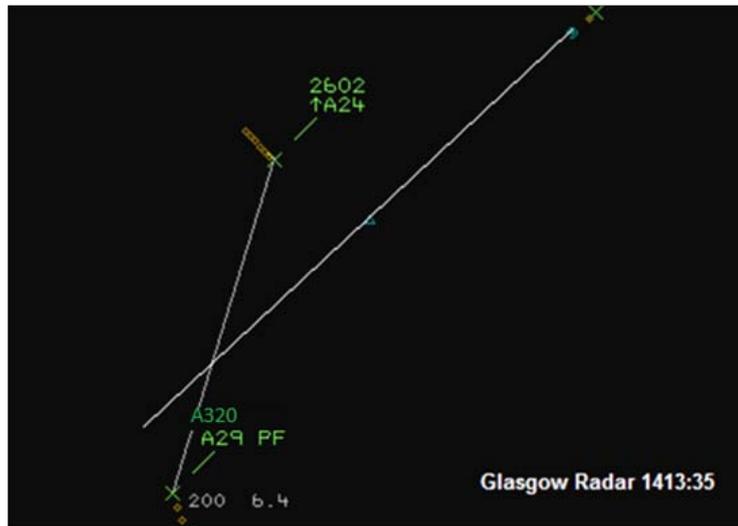


Figure 1

At 1413:40, the RAD cleared the A320 pilot for the ILS approach with a descent to altitude 2000ft. This was read-back and the A320 pilot was informed that the previously mentioned traffic was turning away from the approach. At 1414:20, the A320 pilot was transferred to Glasgow TWR.

At 1414:23, the radar replay showed that the C206 track had changed and the ac could be seen to have started a RH turn (see Figure 2).

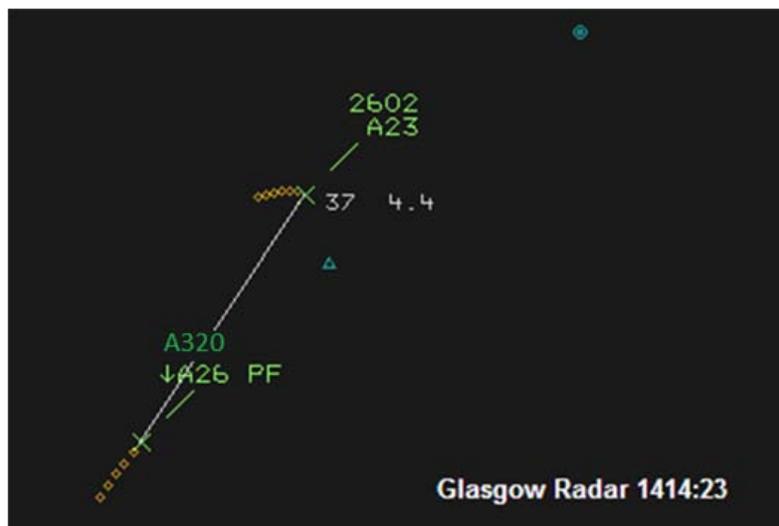


Figure 2

At 1414:30, the Glasgow RAD telephoned TWR to advise that the A320 pilot had been told about the C206 but that the C206 seemed to be turning back. As the AIR acknowledged the information the A320 pilot contacted the Tower. The AIR instructed the A320 pilot to continue the approach and informed the crew of, "...traffic er just ahead of you turning right er to the north". The two ac were 3.4nm apart (see Figure 3).

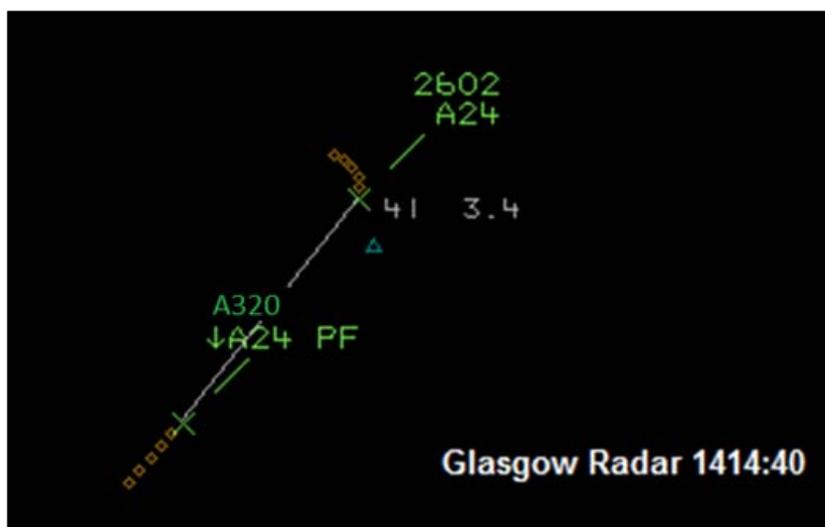


Figure 3

The AIR then asked the C206 pilot, “*can you make that right turn now there’s traffic er on a fi- six and a half mile final for runway zero five*”. The C206 pilot replied that he had the traffic in sight and was turning NW. At 1415:13, the A320 pilot reported that he was, “*...just avoiding traffic*” (see Figure 4). This was acknowledged by the AIR.



Figure 4

The lateral distance between the two aircraft had reduced 2sec later to 1.1nm with the A320 at altitude 1800ft and the C206 at altitude 2300ft (CPA). The A320 conducted a R turn before turning L again to re-establish on the C/L.

At 1415:23, the Mentor controller interjected and asked the A320 pilot if he wanted to climb or maintain altitude at which point he replied that he had re-established on the ILS. The A320 pilot was subsequently cleared to land.

The A320 pilot reported that the crew became increasingly concerned about a TCAS contact from a survey ac previously notified and which ‘threatened an uncomfortable adjacency’. The crew did not receive a TA but took pre-emptive avoiding action, manoeuvred the A320 to the S of the C/L and observed the C206 pass down the LH side at a range of 1-2nm.

The C206 pilot reported that during one of his R turns he saw an Airbus on final to RW05 and that he informed the TWR that he was visual with the traffic. From the point of view of the C206 pilot, the A320 was about 300ft below, descending on the RWY C/L and ‘absolutely not conflicted’. The C206

pilot kept the Airbus in sight throughout the turn. Following the incident it transpired that, due to equipment carried underneath the C206, the ac was limited to a 20° angle of bank. The Glasgow AIR was unaware of this prior to the incident.

As part of the survey detail the C206 pilot was required to conduct a procedure type turn to establish back on the survey line. The radar recordings indicate that during previous turns the pilot briefly carried out a manoeuvre in the opposite direction before turning on to his required track. The AIR had not noticed the track taken by the C206 as it carried out previous turns and was not aware of this requirement prior to the incident. The C206 pilot did not cross the RW05 C/L during his manoeuvring.

#### Analysis

Both aircraft were operating in Class D airspace. CAP493, The Manual of Air Traffic Services, Part 1, Section 3, Chapter 4, Paragraph 3, Control of VFR flights states:

'...Separation standards are not prescribed for application by ATC between VFR flights or between VFR and IFR flights in Class D airspace. However, ATC has a responsibility to prevent collisions between known flights and to maintain a safe, orderly and expeditious flow of traffic. This objective is met by passing sufficient traffic information and instructions to assist pilots to 'see and avoid' each other...'

The A320 pilot was passed TI on the C206 by the APP, which was updated before transfer to the TWR; however, the information regarding the C206 pilot's track was based on the belief that he was turning to the L and was unintentionally inaccurate. The C206 pilot was not initially passed TI on the A320 as the AIR did not consider that it was relevant, due to the belief that the C206 pilot was turning L. When the A320 pilot contacted the TWR, and it had become apparent that the C206 pilot was turning R, the AIR passed TI to the A320 pilot. The AIR also asked the C206 pilot to turn R, passing TI on the A320.

When the C206 pilot had been operating prior to the Airprox, the AIR had been content to allow him to conduct his flight according to his operational requirements and had not needed to closely monitor the ac's flight pattern. The AIR had not previously noticed the C206 conduct a slight turn in the opposite direction before turning onto his intended track and it is likely that this was because the turns conducted by the C206 pilot had no effect on operations prior to the Airprox.

The AIR was unaware that the C206's angle of bank was restricted by the equipment it was carrying and was therefore limited in its manoeuvrability if required to turn to avoid traffic.

#### Conclusions

An Airprox was reported between an A320 and a C206 when the A320 pilot, established on the ILS approach to RW05 at Glasgow, became concerned about the relative proximity of a C206 carrying-out survey work close to the RW05 extended C/L. The following are considered to be causal factors: When the AIR and the APP observed the C206 pilot turning L they made the mistaken assumption that he would continue to turn L, away from the A320. Glasgow ATSU was unaware of the operational requirements of the C206 that dictated the type of turn and the maximum angle of bank.

Following the Airprox, Glasgow ATSU issued a comprehensive briefing that provided further guidance for the integration of VFR and IFR traffic in Class D airspace and information regarding the potential requirements and limitations of non-standard flights.

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

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board first considered the actions of the A320 pilot. It was clear he understood that TCAS traffic indications were not accurate in azimuth and by including information from RT he had built his SA to reinforce his accurate perception of the C206's position. Members opined that an effective course of action at that stage would have been to request avoiding action or to allow the TCAS to operate normally, whilst maintaining the ILS C/L. In either case, an intentional deviation from the C/L whilst in IMC was considered potentially hazardous.

The Board then considered the planning and actions of Glasgow ATSU personnel. ATC Members opined that a major contributing factor to the Airprox was the planning and integration of the C206 survey task within the bounds of the Glasgow CTR. The C206 pilot had arrived on task some 1hr 30min before the Airprox occurred and it was not clear to the Board what coordination agreement had been made with the pilot and passed on to the Glasgow AIR, who had started his duty some 15min before the Airprox. It was considered likely that the agreement reached was framed in general terms, e.g. for the C206 pilot to remain N of the RW05 C/L. Members opined that this was not always sufficiently precise to allow the safe, efficient and expeditious flow of traffic and that coordination should be agreed to exact limits, e.g. remain not less than 2nm clear of the RW05 C/L to the N and request clearance if a closer pass is required. Members noted it was unfortunate the controller did not see the C206 pilot's previous 'dumbell' turns and that had he observed them he would have been in a position to control effectively, rather than having to respond to a developing situation. It was also noted that, in a situation such as this, it would be necessary to have the 2 ac on the same frequency sufficiently early, such that timely control could be exercised if required. In this case an early transfer of the A320 to AIR or, with the C206 on RAD, a late transfer of the A320 to AIR.

Board Members were satisfied that timely and effective actions had been taken to prevent the ac colliding but considered that the controller had allowed the C206 pilot to fly close enough to the C/L to cause the A320 pilot concern. As the C206 pilot was visual with the A320 at about 3nm range and there was every reason to assume TCAS would have been effective if the situation deteriorated, the Board was satisfied that there was no risk of a collision. However, when taken as a whole the effectiveness of the barriers was limited, in that the controller was not able to pre-empt the C206 pilot's turn direction and subsequently was forced into a reactive response.

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

Cause: The AIR controller allowed the C206 pilot to fly close enough to the RW05 C/L to cause the A320 pilot concern.

Degree of Risk: C.

ERC Score: 102.