

AIRPROX REPORT No 2013039

Date/Time: 22 May 2013 1505Z

Position: 5154N 00210W
(2.5nm WNW Gloucester/Staverton)

Airspace: Lon FIR (Class: G)

Reporting Ac Reporting Ac

Type: AS365 PA38

Operator: HQ JHC Civ Pte

Alt/FL: 3000ft 3000ft
QNH(1018hPa) QNH (1020hPa)

Weather: VMC CLBC VMC CLNC

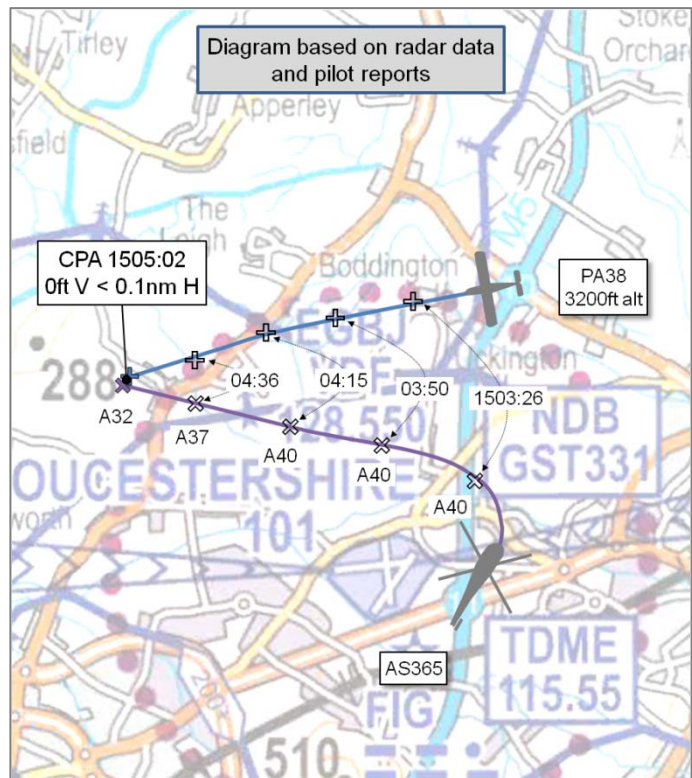
Visibility: 30km >10km

Reported Separation:

200ft V/200m H 0ft V/200ft H

Recorded Separation:

0ft V/<0.1nm H



BOTH PILOTS FILED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE AS365 PILOT reports conducting an instrument flight test, 'in the hold' at altitude 4000ft [QNH 1018hPa] for the RW27 NDB/DME approach at Gloucester/Staverton A/D. He was operating under VFR in VMC in receipt of a PS from Gloster APP. The dark blue and white ac had navigation, landing and strobe lights selected on, as was the SSR transponder with Modes A and C. The ac was not fitted with an ACAS. The PF requested descent to altitude 2800ft (the minimum for the hold) in preparation to track outbound from the beacon for the approach. The APP approved this and the PF commenced the descent on the 'downwind' leg with the intention of turning back towards the beacon to commence the procedure. As they passed altitude 3000ft, heading 292° at 120kt and about to turn L in the hold, he saw a low-wing light ac about 200ft below in the R 4-5 o'clock position closing rapidly on a converging course. He immediately stopped the descent and maintained heading as the intended turn would have put them in direct conflict. The light ac appeared to their L maintaining the same course and apparent altitude, by now diverging away to the SW. The Airprox was reported to APP.

He assessed the risk of collision as 'High'.

THE PA38 PILOT reports transiting from Turweston to Swansea in a level cruise at 3000ft [QNH 1020hPa]. He was operating under VFR in VMC in receipt of a BS from Gloster APP [128.550MHz]. The white and red ac had the SSR transponder selected on with Mode C selected off, he thought. The ac was not fitted with an ACAS and the ac lighting was not reported. He contacted Gloster APP when 3nm N of Upper Heyford and reported his altitude as 3000ft on QNH 1020hPa. The APP confirmed he had the correct QNH but did not read back the QNH or his altitude. When 3nm NW of the A/D, heading 255° at 90kt, he saw a black helicopter, at a range of 1nm, co-altitude in his L 10 o'clock on a converging heading. He considered climbing but saw the helicopter do so and he reduced height in a gentle dive, maintaining visual with the helicopter until it passed behind and reappeared in his 4 o'clock position. He reported the Airprox to the controller and noted that the controller informed him he had recorded his altitude as 2000ft. He noted that although a read back of QNH is not required, had the APP done so it would have prevented the Airprox.

He assessed the risk of collision as 'Medium'.

THE GLOSTER APP reports that the AS365 was at altitude 4000ft [QNH 1020hPa] in the GST hold under a PS and was cleared for the NDB/DME Approach to RW27. The PA38 was routing N-abeam the A/D, SW bound, under VFR in receipt of a BS and believed to be at altitude 2000ft [QNH 1020hPa]. The AS365 pilot reported sighting the PA38 NW of the A/D at a similar level as he turned inbound to the GST in a descent to 2800 ft. When questioned, the PA38 pilot reported his altitude as 3000ft. The METAR was recorded as EGBJ 1450Z 33010KTS 9999 SCT042 16/04 Q1020.

[UKAB Note(1): The Gloster APP RTF transcription is reproduced below:

From	To	Transcribed Speech	Time
AS365	APP	[AS365 C/S] I'm just on the southern side of Ledbury now and am er currently going to level at three thousand and looking to join the golf sierra tango	1452:00
APP	AS365	[AS365 C/S] roger er climb to altitude four thousand feet report reaching	
AS365	APP	climb four thousand wilco [AS365 C/S]	
APP	AS365	[AS365 C/S] clear to the golf sierra tango at altitude four thousand feet no delay expected N D B D M E approach runway two seven	1453:00
AS365	APP	[AS365 C/S] clear to join at er four thousand feet and I'll probably go twice round the hold sir	
APP	AS365	[AS365 C/S] roger report your estimate for the golf sierra tango	
AS365	APP	er estimate at minute five seven	
APP	AS365	[AS365 C/S] roger report entering the hold procedural service	
AS365	APP	[AS365 C/S] wilco	
Other ac	APP	and Gloster [Other ac C/S]'s now well clear of Ledbury er visual similar type and changing en route ops frequency	1453:30
APP	Other ac	[Other ac C/S] good day	
Other ac	APP	good day	
PA38	APP	good afternoon Gloster approach this is [PA38 C/S]	
APP	PA38	[PA38 C/S] Gloster approach standby	1454:00
APP	PA38	[PA38 C/S] Gloster approach pass your message	
PA38	APP	[PA38 C/S] P A thirty eight one P O B out of Turweston en route er Swansea er just north of Upper Heyford (<i>three/two</i>)* thousand feet on one zero two zero requesting basic service	

*[UKAB Note(2): The PA38 pilot's RT response is discussed in the ATSI Report section]

APP	PA38	[PA38 C/S] basic service Gloster Q N H correct report passing north abeam	1455:00
PA38	APP	report passing north abeam your zone er [PA38 C/S]	
APP	AS365	[AS365 C/S] request your intentions after the approach	
AS365	APP	er I'd like to climb runway heading er three thousand and then left turn direct track with a handover to Brize for pre	1455:30

From	To	Transcribed Speech	Time
		booked I L S	
APP	AS365	[AS365 C/S] roger	
AS365	APP	[AS365 C/S] entering the hold four thousand feet one zero two zero	1457:30
APP	AS365	[AS365 C/S] report ready for the approach	
AS365	APP	Wilco [AS365 C/S]	
PA38	APP	[PA38 C/S] reporting north abeam	1503:00
APP	PA38	[PA38 C/S] report leaving the frequency	
PA38	APP	-port leaving frequency [PA38 C/S]	
AS365	APP	Gloster [AS365 C/S] next time over the beacon I'd like to ???? ???? procedure outbound and requesting a descent	1503:30
APP	AS365	[AS365 C/S] cleared N D B D M E approach runway two seven report beacon outbound	
AS365	APP	wilco er and am I clear down to two thousand eight hundred	
APP	AS365	[AS365 C/S] affirm descend with the procedure	
AS365	APP	[AS365 C/S]	
AS365	APP	approach [AS365 C/S] just at the far end of the hold er were you aware of er an aircraft come through at three thousand feet there	1505:30
APP	AS365	[AS365 C/S] er standby	
APP	PA38	[PA38 C/S] report your position	
PA38	APP	just er just north er west of your field now I just er saw that aircraft go over the top over the top of me ???? ?	1506:00
APP	PA38	[PA38 C/S] roger [PA38 C/S] report er your level now you last reported two thousand feet	
		Non-relevant RT from another ac	
APP	PA38	[PA38 C/S] report your level now	
PA38	APP	???? ???? four miles er northwest of your field	1506:30
APP	PA38	[PA38 C/S] roger report your level	
PA38	APP	er two thousand eight hundred feet on one zero two zero	
APP	PA38	[PA38 C/S] roger report any change in that level please	
PA38	APP	report change in level [PA38 C/S]	
APP	AS365	[AS365 C/S] that traffic working me er last reported two thousand feet	
AS365	APP	er [AS365 C/S] understood sir that er the one that conflicted with us which was an Airprox er was at two thousand eight hundred so at the bottom of the er hold height we were cleared down to	1507:00
APP	AS365	[PA38 C/S] roger	
PA38	APP	[PA38 C/S] I er reported my position as er height as er three thousand feet when I joined your service	
APP	PA38	[PA38 C/S] roger I heard that as er two thousand feet report	

From	To	Transcribed Speech	Time
		er leaving the frequency	
PA38	APP	report leaving frequency [PA38 C/S]	
APP	AS365	[AS365 C/S] er will you be filing	
AS365	APP	[AS365 C/S] affirm er we're quite relaxed it was good v m c but er yeah	1507:30
APP	AS365	???? [AS365 C/S] roger]

ATSI reports that the Airprox occurred at 1505:08, 2.5nm to the NW of Gloucestershire A/D (Gloster), within Class G airspace, between a Eurocopter AS-365 N3 Dauphin 2 (AS365) and a Piper PA-38-112 (PA38).

Background

The AS365 pilot was holding at the Gloster GST-NDB and was descending to altitude 2800ft prior to commencing the NDB-DME approach RW27. He was in receipt of a PS from Gloster APP [128.550MHz].

The PA38 pilot was flying VFR from Turweston to Swansea, routeing to the N of Gloster and was in receipt of a BS from Gloster APP. A representation of the tracks of the two ac is shown in Figure 1 below.

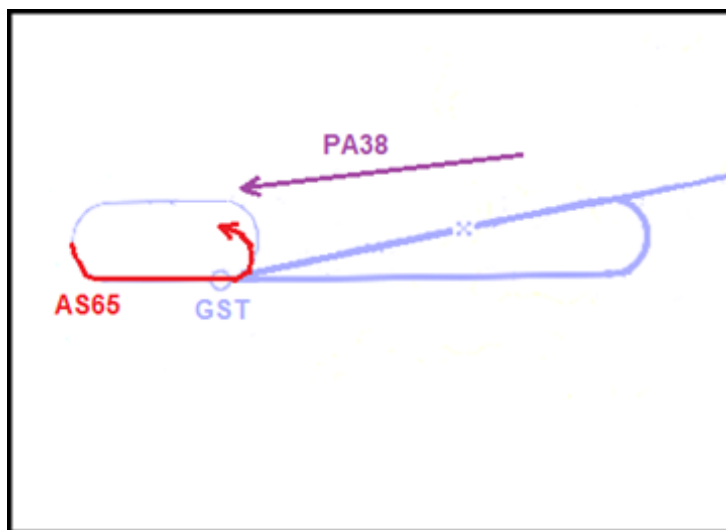


Figure 1: Representation of ac tracks in relation to the GST Holding pattern

Gloster ATSU were providing a split A/D and APP Service from the VCR without the aid of surveillance equipment. Gloster is equipped with a Primary Radar System, without SSR surveillance capability and limited coverage due to the narrow beam width, tilt mechanism and radar overhead limitations. The AIP entry for Gloster A/D, page AD 2.EGBJ-7 (dated 3 Mar 2013) paragraph EGBJ AD2.18 states:

‘Radar services (Primary only) within 25NM below FL80, availability subject to manning. Use of ‘Radar’ suffix denotes availability only. Provision of a specific radar service is not implied.’

CAA ATSI had access to RTF recordings for Gloster APP, together with area radar recording, written reports from the APP and the two pilots concerned.

Factual History

At 1434:38, the AS365 pilot established two way communications with Gloster APP and reported operating between 2000ft and 4000ft in the Ledbury area, requesting a BS, prior to setting course for Gloucester. The controller agreed a BS and passed the Gloucester QNH 1020hPa.

At 1451:57, the AS365 pilot reported at 3000ft and requested to join the GST hold. The APP responded, “[AS365 C/S] *er climb to four thousand feet report reaching*”, followed by, “[AS365 C/S] *clear to the Golf Sierra Tango at altitude four thousand feet no delay expected NDB DME approach runway two seven*”. The AS365 pilot replied, “[AS365 C/S] *clear to join at er four thousand feet and I’ll probably go twice around the hold...*”. The AS365 pilot’s estimate for the GST was 1457 and the controller replied, “[AS365 C/S] *roger report entering the hold Procedural Service*”.

At 1454:41, the PA38 pilot established two way communication with Gloster APP and reported, “[PA38 C/S] *P A thirty eight one person on board out of Turweston en-route er Swansea er just north of Upper Heyford ?-thousand feet on one zero two zero zero requesting Basic Service*”. The APP marked 2000ft on the PA38’s FPS and replied “[PA38 C/S] *Basic Service Gloster Q N H correct report passing north abeam*”. The pilot acknowledged, “*Report passing north abeam your zone er [PA38 C/S]*”.

It was difficult to distinguish the pilot’s transmission. He indicated a transmission of 3000ft in his Airprox report and the controller reported hearing 2000ft. After an analysis of the recording CAA ATSI gave a 60% weighting to the probability that the transmission was 3000ft.

At 1457:32, the AS365 pilot reported entering the GST hold at altitude 4000ft [QNH 1020hPa] and the APP instructed him to report ready for the approach. At 1503:01, the PA38 pilot reported N abeam [the A/D] and the APP instructed him to report when leaving the frequency.

At 1503:32, the AS365 pilot reported, “[AS365 C/S] *next time over the beacon I’d like to ????? ???? procedure outbound and requesting a descent*”. The APP replied “[AS365 C/S] *cleared N D B D M E approach runway 27 report beacon outbound*”. The AS365 pilot acknowledged, “*Wilco er and am I clear down to 2800ft*”. The controller responded, “[AS365 C/S] *affirm descend with the procedure*”. The APP did not have the benefit of surveillance radar equipment. A radar analysis showed that once the AS365 was established outbound in the hold, the tracks of the two ac converged. At 1504:40, the AS365 is shown passing FL035 (3700ft) and the PA38 at FL030 (3200ft). The range between the two aircraft was 0.5nm (see Figure 2 below).

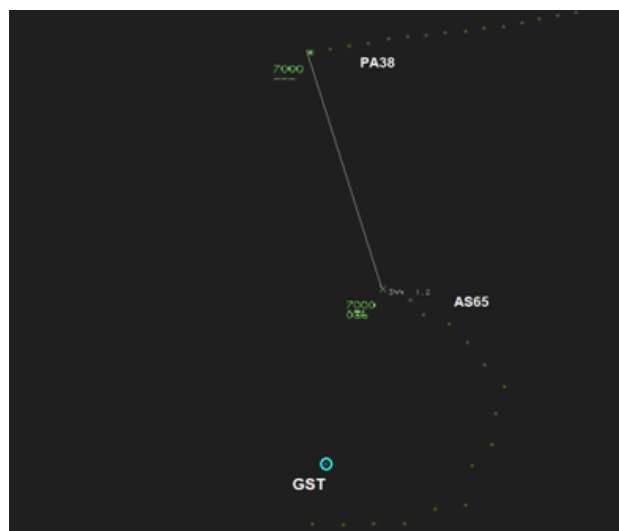


Figure 2: MRT at 1503:44

The AS365 pilot continued to descend whilst outbound and at 1505:03 he crossed 0.1nm ahead of the PA38 and 100ft above. At 1505:08, both ac were shown at FL030 (3200ft) at a range of 0.1nm.

The pilots' written reports indicate that the PA38 pilot sighted the AS365 in his 10 o'clock and the AS365 pilot sighted the PA38 in his 4-5 o'clock. At 1505:38, the AS365 pilot reported, "Approach [AS365 C/S] just at the far end of the hold er were you aware of er an aircraft come through at 3000ft there". The APP asked the AS365 pilot to, "Standby" and then asked the PA38 pilot for his position. At 1505:54, the PA38 pilot reported, "Just er north er west of your field now I just er saw that aircraft go over the top of me ?????". The APP responded, "[PA38 C/S] roger, [PA38 C/S] report er your level now you last reported at 2000ft". The PA38 pilot confirmed his position as 4nm NW of Gloster and then confirmed his level, "er two thousand eight hundred feet on one zero two zero". The APP asked the PA38 pilot to report any change in level.

After the Airprox occurrence, the AS365 pilot commenced the L base turn and the two ac began to converge. Radar showed that, at 1506:34, the two ac came into proximity for a second time. The AS365 was at FL025 (2700ft) and was shown to have turned L to pass 0.1nm behind and below the PA38 which was indicating FL028 (3000ft) (see Figure 3 below).

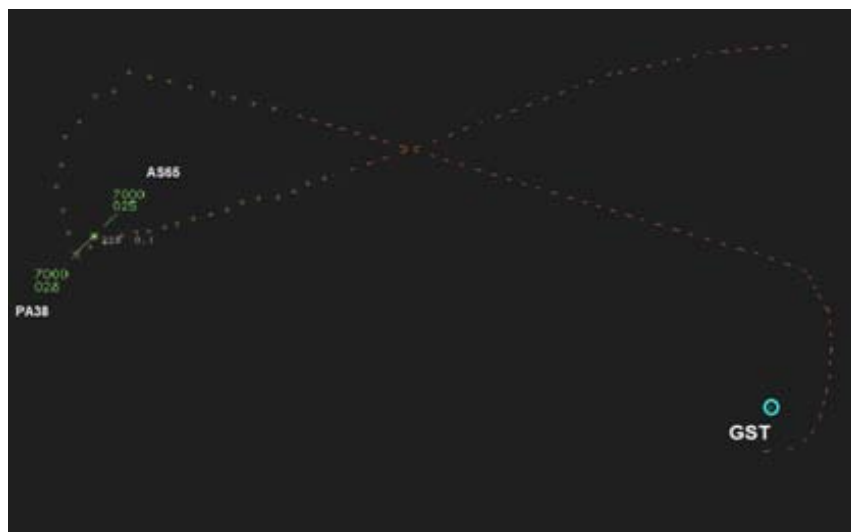


Figure 3: MRT at 1506:34

At 1506:45, the APP advised the AS365 pilot, "[AS365 C/S] that traffic working me er last reported 2000ft" and the AS365 pilot replied, "er [AS365 C/S] understood sir tha-er the one that conflicted with us which was an Airprox er was at 2800 so at the bottom of the er hold height we were cleared down to". This was acknowledged by the APP. At 1507:18, the PA38 pilot transmitted, "[PA38 C/S] I er reported my position as er height as er 3000ft when I joined your service". The APP replied, "[PA38 C/S] roger I heard that as er two thousand feet report leaving the frequency". The APP asked the AS365 pilot if he would be filing a report and the pilot replied, "[AS365 C/S] affirm we're quite relaxed it was good VMC but er yeah". This was acknowledged by the APP.

The AS365 pilot continued with the NDB DME procedure without further incident and at 1517:07 the PA38 pilot transferred frequency to Cardiff APP. After listening to the tape recording the Gloster ATSU reported that they believed the PA38 pilot had reported at 2000ft.

Analysis

CAA ATSI, in analysing the RTF recording, was not able to establish conclusively whether the transmission from the PA38 pilot was '2000ft' or '3000ft' but gave a 60% weighting to the probability that the transmission was '3000ft'.

The AS365 pilot was in receipt of a PS. CAP774 UK Flight Information Services, Chapter 5, Page 2, paragraph 5, states:

'The controller shall provide traffic information, if it is considered that a confliction may exist, on aircraft being provided with a Basic Service and those where traffic information has been passed

by another ATS unit; however, there is no requirement for deconfliction advice to be passed, and the pilot is wholly responsible for collision avoidance...'

The APP did not consider that there was a conflict and therefore did not pass TI to either ac. The APP had the expectation that the AS365 pilot would maintain 2800ft until going beacon outbound, E of the GST, whilst the PA38 pilot, who had already reported N abeam, would be W of the GST at 2000ft. Notwithstanding that both pilots were listening out on the same frequency, the PA38 pilot was flying VFR in the vicinity of the holding area and may not have known about the intentions of the AS365. CAP774 states:

'Pilots flying in the vicinity of aerodromes, ATS routes, or navigational aids where it is known that a Procedural Service is provided, are strongly encouraged to attempt to establish RTF contact with the notified ATS provider.'

The PA38 pilot had not been asked to report any change in level and there was no pilot/controller agreement to provide an assurance that the PA38 pilot would transit at, or not above, a specified level. TI would have provided SA to the pilots of both ac and may have prompted the PA38 pilot to have corrected any level inaccuracy reported by the APP when passing TI to the AS365 pilot. CAP774, Chapter 1, Page1, Paragraph 2, states:

'Within Class F and G airspace, regardless of the service being provided, pilots are ultimately responsible for collision avoidance and terrain clearance, and they should consider service provision to be constrained by the unpredictable nature of this environment.'

Conclusions

The Airprox occurred when the AS365 and PA38 pilots flew into close proximity within the vicinity of the GST instrument holding pattern. The APP heard the PA38 pilot's reported level as 2000ft and believed that the PA38, operating VFR, would not be in conflict with the AS365, descending to 2800ft prior to going outbound for the NDB/DME procedure for RW27. A contributory factor was the readability of the PA38 pilot's transmission of altitude which, after analysis, proved difficult to differentiate. ATSI considered it likely that the pilot reported at 3000ft, however it was not unreasonable for the controller to have accepted 2000ft as being correct. It is considered that the provision of TI would have been appropriate to aid the situational awareness of both pilots and may have prompted the PA38 pilot to correct any level inaccuracy reported by the APP in the passing of such TI.

HQ JHC comments that this Airprox appears to have arisen because the AS365 pilot was cleared into conflict with the PA38. In this instance the AS365 was operated by a dual crew which enhanced the lookout and visual acquisition of the PA38. The ac is cleared to carry out single pilot operations and JHC HQ will consider recommending that, where able, a second pilot or competent observer is to fly as crew for maintenance of adequate lookout. Additionally it is clear that the fitting of a collision avoidance system, which is being actively pursued by this HQ, could have significantly helped to prevent this incident..

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequency, radar video recordings, a report from the air traffic controller involved and a report from the appropriate ATC authorities.

Members first considered the pilots' actions. Both pilots were operating under VFR in class G airspace and had equal responsibility for collision avoidance; the PA38 pilot had right of way. The PA38 pilot saw the AS365 at a reported range of 1nm and he descended 'gently' as he perceived the helicopter climb. The Board opined that the AS365 pilot saw the PA38 at much closer range but with sufficient time to take avoiding action by levelling off. As such, both pilots discharged their collision

avoidance responsibilities, albeit the AS365 pilot only saw the PA38 in time to give way by a reduced margin.

Members then considered the controller's actions. He perceived the PA38 pilot's altitude from RT as '2000ft'. The PA38 pilot was adamant that he had transmitted '3000ft'. The undetected error led to the subsequent conflict when the controller then cleared the AS365 to descend into conflict with the PA38. ATC Members stated that the controller was not required to read back the pilot's reported altitude but opined that even if the PA38 pilot had been at altitude 2000ft, he would have been sufficiently close to the hold minimum altitude of 2800ft that TI should reasonably have been passed to the AS365 pilot. Additionally, TI on the PA38 to the AS365 pilot may have been sufficient to prompt the PA38 pilot to restate his true altitude. Members also opined that the controller could have considered requesting the PA38 pilot to route N abeam the A/D, giving a range sufficient to avoid the hold, to route S of the A/D, avoiding the hold pattern entirely, or to route through the A/D O/H at an altitude sufficient to provide appropriate separation in the vertical. It was noted that once the PA38 pilot had reported N abeam the A/D the Gloster APP requested him to report changing frequency. Members opined that since the hold was to the NW of the A/D the APP would have been better advised to ask the PA38 pilot to report changing frequency once he was clear of the hold pattern.

Given the difficulty of looking out to the RHS of the AS365, past the handling pilot, and that the hold pattern was entirely within class G airspace where there was no radar-based ATS to assist with risk mitigation, Pilot Members highlighted the option of carrying additional 'competent observers' to maintain an adequate lookout when practising instrument profiles (RoA Rule 23). The requirements of CAP413 (Radiotelephony Manual), Chapter 2 (Radiotelephony), Section 1 (General Procedures), Part 1.5 (Transmission of Numbers) were also emphasised, particularly the requirement to enunciate the numeral '3' as 'TREE'.

Members were satisfied that effective and timely actions were taken to prevent ac colliding but the misunderstood altitude and lack of TI meant that the overall effectiveness of the available safety barriers had been limited.

PART C: ASSESSMENT OF CAUSE AND RISK

<u>Cause:</u>	The controller misunderstood the PA38 pilot's reported altitude and cleared the AS365 to descend into conflict with the PA38.
<u>Degree of Risk:</u>	C.
<u>ERC Score:</u>	4.
<u>Contributory Factors:</u>	Absence of TI.