

## AIRPROX REPORT No 2012036

Date/Time: 15 Mar 2012 1656Z

Position: 5148N 00104W (8nm final RW19 at Benson - elev 203ft)

Airspace: Benson MATZ (Class: G)

Reporting Ac Reported Ac

Type: Grob Tutor Agusta A109S

Operator: HQ Air (Trg) Civ Exec

Alt/FL: 1900ft 2500ft  
QFE (1015hPa) QNH (1021hPa)

Weather: IMC Cloud/Haze VMC CLAC

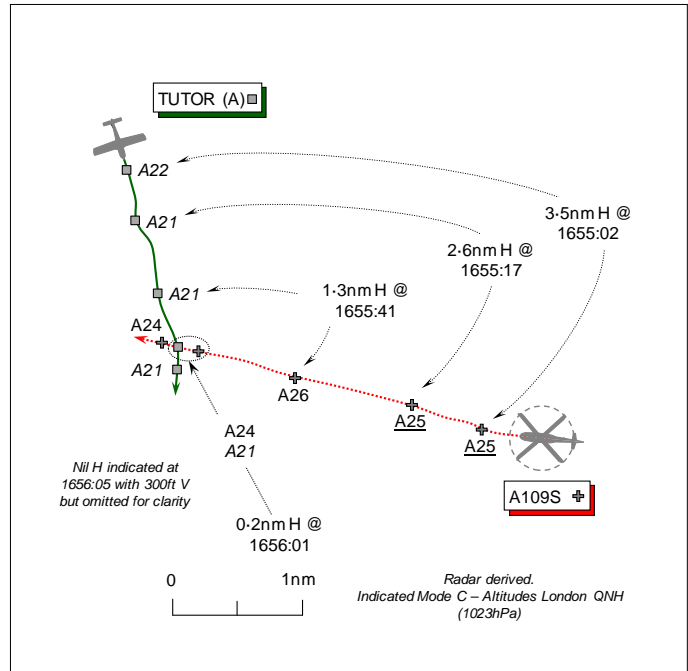
Visibility: 4km 5km

Reported Separation:

300ft V/½nm H Not seen

Recorded Separation:

Contacts merged @ 300ft V



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE PILOT OF GROB TUTOR (A)**, a QFI, reports he was flying an instructional IFR recovery to Benson with a student and in receipt of a TS from Benson APP on 376-65MHz; a squawk of A3611 was selected with Modes C and S on. APP cleared him to descend to 1900ft QFE (1015hPa) and turn R onto a heading of 190° for final prior to the PAR procedure. Flying at 100kt, level at 1900ft QFE, he was flying just above the haze layer with some SCT cloud extending above; visibility was variable as the cloud tops were not clearly defined as his aeroplane transitioned intermittently in and out of the cloud/haze. At about 10nm final approach, whilst awaiting handover to TALKDOWN, conflicting traffic was called approaching from his L and slightly above. He was content to maintain a TS as the reduced visibility was intermittent. Following the first call from APP advising the traffic was about 5nm away, the conflicting ac was not sighted and thereafter on entering reduced visibility he informed APP that he was IMC. Shortly afterwards his aeroplane's Traffic Advisory System (TAS – a TCAS I) notified him of an ac in his 10 o'clock position about 1nm away, indicating +300ft above his aeroplane with an accompanying audible warning. Immediately, he requested a DS and was instructed by APP to maintain his heading of 190°; he spotted an ac over his L shoulder between the cloud tops and haze which then became clearly visible as it passed about ½nm behind from L – R (E to W) about 300ft above his aeroplane. The other ac was identified as an Agusta A109 helicopter, apparently white in colour, with a green longitudinal stripe. ATC was informed that the traffic had passed behind and he was then handed over to TALKDOWN to complete the PAR procedure. He noted that the ATC frequency was 'busy' and he assessed the Risk as 'Medium'. His aeroplane is coloured white with a blue longitudinal stripe; the HISLs and landing light were all functioning.

Whilst taxiing back to the dispersal he requested further information about the traffic. Shortly afterwards ATC were contacted by landline and following the discussion, he elected to submit an Airprox report.

**THE AGUSTA A109S HELICOPTER PILOT** reports he was in transit to Gloucestershire Airport and flying on track from BNN VOR to the Oxford overhead at 155kt. He had been in communication with Farnborough LARS, but the controller had asked him to contact Benson ZONE as they had traffic. He duly contacted Benson ZONE on 120.900MHz and was placed under a BS. From memory, he was flying VFR in VMC, on top, at 2000ft QNH when he was asked by ZONE to climb an additional 500ft to provide separation against fixed-wing traffic they were controlling on an instrument approach.

He happily climbed to 2500ft QNH and transited without incident. He never saw a fixed wing ac, but a passenger in the other front seat saw the aeroplane and didn't consider it very close. His helicopter is fitted with TCAS I and the aeroplane was displayed but no alert was provided. In his opinion there was 'zero' Risk and no safety issues. ZONE took action well in advance to keep his helicopter and the aeroplane apart and at no time did he feel the need to query ZONE or request avoiding action.

His helicopter is coloured beige and green. Anti-collision beacons above and below were on, together with HISLs on both sides of the tail boom. The assigned squawk was selected with Modes C and S on.

UKAB Note (1): The 1650Z Benson METAR: 26005KT 3000 HZ FEW015 11/08 Q1022 YLO1 NOSIG=

**THE BENSON COMBINED APPROACH CONTROLLER/DIRECTOR (APP)** reports he had 4 ac on frequency, all for radar approaches and all were being provided with a TS. The ZONE controller had seen that the Radar Training Circuit (RTC) was starting to become very busy and called another controller into the approach room, which he elected to use as a second TALKDOWN. The pilot of Tutor (A) was given TI on conflicting traffic when he had approximately 15nm to run. The traffic was SE at a range of 5 miles tracking W 100ft above, which he believed would pass down Tutor (A)'s LH side. The conflicting ac was now squawking A3601 and tracking more westerly and he had heard ZONE call Tutor (A) to the transit traffic – the A109, which ZONE said was VMC, under a BS and climbing to 2500ft QNH to pass between the subject Tutor (A) at 1900ft and Tutor (B) at 4000ft QFE. Whilst continuing to control other RTC traffic the pilot of Tutor (A) requested a DS and this was provided with the instruction 'previously reported traffic left 11 o'clock half a mile crossing L – R 400ft above, maintain heading'. As the primary contacts had now merged, he decided that any turn or change in height would increase the risk of a collision. ZONE then advised that the A109 pilot was now visual with Tutor (A), he thought; almost immediately Tutor (A)'s pilot reported visual with the A109 which was 'passing behind'. The pilot of Tutor (A) then requested a TS before being handed to TALKDOWN.

UKAB Note (2): There is no indication on the Benson ZONE VHF transcript that the A109 pilot reported visual with Tutor (A).

**THE BENSON ZONE CONTROLLER (ZONE)** did not submit a report.

**THE BENSON ATC SUPERVISOR** reports that APP and DIR was band-boxed, with 2 ac in the RTC under TS and 2 ac conducting GH also under a TS. The controller was busy, controlling calmly and competently. Normal recovery procedures for Tutor ac are visual joins; however, the weather had deteriorated and instead pilots were requesting instrument approaches to land. He had been in and out of the ACR seeing to other tasks, but when he returned to the ACR, ZONE informed him that the APP was busy and requested an additional controller to man DIR; this was because both Tutor pilots had called for recovery at the same time in addition to the 2 other ac in the RTC. He immediately went to find a DIR. However there was a few minutes delay as he had assumed the controller was in the back of the building when in fact he was in the crew room. On finding the controller he immediately came to the ACR, but APP requested a second TALKDOWN instead of a DIR, which was a wise decision as both Tutor ac had called up in close proximity in an area with little room for manoeuvre. When sitting back at the SUP's console, ZONE informed him of a free-call from a A109 pilot, at a position about 040° Benson 11nm, tracking NW. ZONE had issued the A109 a squawk of A3601, identified the ac, verified the Mode C and applied a BS as requested by the pilot. ZONE said that the pilot had reported at 2300ft QNH (1021hPa) and asked for guidance; he was aware of Tutor (A) on base leg for the PAR at 1900ft QFE (1015hPa), so he told ZONE to climb the A109 to 2500ft QNH to provide some extra separation above Tutor (A). The two ac were about 5nm away from each other and were called by both the APP controller and ZONE controller respectively. He had been monitoring a number of frequencies sporadically as he was also liaising with TALKDOWN regarding the order of recovery and passed TI to APP regarding the A109 climbing to 2500ft QNH. Instructing both controllers to update TI, when he next monitored he saw that the A109 had turned W

and was heading toward Tutor (A). The pilot of Tutor (A) then asked for a DS; the ac was heading 170° through the 12 o'clock of the A109. Unfortunately, he misheard the RT and thought that Tutor (B) had requested the DS and he called Brize Norton to co-ordinate. To hear the Brize Norton controller he had to switch off all frequencies, but he remained watching the radar, to see the Mode C of the A109 indicating 023 and climbing and Tutor (A) indicating 019.

**BM SAFETY MANAGEMENT** reports that this Airprox occurred between the subject Tutor - Tutor (A) - operating IFR in IMC in receipt of a TS and, latterly, a DS from Benson APP and the A109 operating VFR in VMC in receipt of a BS from Benson ZONE.

APP was bandboxed with DIR throughout the incident sequence; this is typical for Benson operations and is based on an accepted assumption that, unless pre-noted, Benson-based Tutors will operate VFR. DIR is planned to be manned for helicopter recoveries when their intention to conduct IF training on recovery is pre-notified to ATC. APP reported that their workload was high to medium.

The pilot of Tutor (A) provided a good description of the weather conditions, stating that at 1900ft Benson QFE, visibility was 4000m just above a layer of haze with SCT cloud at 1400ft occasionally extending above the haze layer. Throughout the recovery phase, the aeroplane 'transitioned in and out of the cloud/haze' and as such 'reduced visibility was intermittent.' Consequently, the PIC of Tutor (A) was 'content to maintain a traffic service.'

The incident sequence commenced at 1649:08 as the pilot of Tutor (A) called APP for an instrument recovery. Up to this point, APP had been providing a TS to 2 ac in the RTC and 2 Tutors - Tutor (A) and Tutor (B) – both conducting GH NW of Benson. At 1649:08, Tutor (A) was 7.3nm NW Benson, tracking N'ly, indicating an altitude of 3600ft ALT London QNH (1023hPa); the A109 was 18.6nm NE Benson, tracking WNW'ly, indicating 2400ft ALT London QNH (1023hPa). At 1649:36, the pilot of Tutor (B) called APP for an instrument recovery. Tutor (A) and Tutor (B) were placed 3<sup>rd</sup> and 4<sup>th</sup> respectively in the order of recovery.

At 1652:11 Tutor (A) was turned R onto a heading of 090° then, at 1652:52, was descended to 1900ft QFE, this being the lowest Terrain Safe Height in that area. At this latter point, the A109 was 11.8nm ESE of Tutor (A), tracking WNW'ly, indicating 2400ft ALT. At 1653:08, the A109 pilot free-called Benson ZONE requesting a BS en-route to Gloucestershire/Staverton; a squawk was issued and the flight placed under a BS.

The SUP re-entered the ACR between 1653:08 and 1654:08; cognisant of Tutor (A) on base leg at 1900ft QFE [1015hPa) – equating to 2080ft QNH (1021hPa)], SUP instructed ZONE to request the A109 pilot to climb to 2500ft QNH. The A109s initial altitude of 2300ft QNH (1021hPa) would have provided 220ft separation against the Tutor; the climb to 2500ft QNH (1021hPa) requested by ZONE provided 420ft separation.

At 1654:07, APP turned Tutor (A), indicating 2100ft ALT, onto a heading of 170°. The A109 was 6.7nm ESE of the Tutor indicating 2400ft ALT. Almost simultaneously at 1654:08, ZONE asked the A109 pilot, *"..can you accept flight at altitude 2 thousand 5 hundred feet for separation?"* The A109 replied, *"affirm"* and ZONE thanked them saying, *"thanks, we've just got a couple of aircraft struggling to get visual inbound to Benson."* The A109 pilot replied, *"no problem, I'll climb now altitude 2 thousand 5 hundred feet on 1-0-2-1."*

Although Tutor (A) indicated level at 2100ft ALT on the radar replay at 1653:51, the pilot reported this at 1654:25. At 1654:35, APP passed accurate TI to the pilot of Tutor (A) on the A109 as, *"traffic south-east, 5 miles, tracking west, 1 hundred feet above."* At 1655:02, the A109's SSR Mode C indicated 2500ft ALT, 3.5nm SE of Tutor (A), continuing to track WNW'ly.

At 1655:18, ZONE passed accurate TI to the A109 pilot as, *"traffic right, 1 o'clock, 1 and a 1/2 miles, crossing right-left, 4 hundred feet below, Tutor."* The A109 pilot replied, *"..V-M-C on top and level 2 thousand 5 hundred feet, 1-0-2-1."* Based upon reports by APP and the SUP, it is likely that it was around this point when either ZONE or the SUP (their recollections differ) informed APP that the

A109 was 'VMC, under a Basic Service and climbing to 2500ft QNH to pass between [the two] Tutors.'

At 1655:42, the pilot of Tutor (A) reported, "*India Mike Charlie, not visual with that traffic, request Deconfliction Service.*" It is likely that this transmission was prompted by the reported 'audible warning' from the Tutor's TAS of traffic 'in the 10 o'clock position, approximately 1nm and +300ft.' At that point, the A109 was 1.5nm SE of Tutor (A) indicating 2500ft ALT, with Tutor (A) indicating 2100ft ALT. APP acknowledged Tutor (A) pilot's transmission stating, "*..roger, Deconfliction Service, previously reported traffic left 11 o'clock [radar shows 10 o'clock], half a mile, crossing left-right, 4 hundred feet above, maintain heading.*" The pilot of Tutor (A) acknowledged this instruction and then immediately reported at 1656:02, that he was, "*visual, it's passing behind*". APP reported that at the point where they applied a DS, the radar contacts for Tutor (A) and the A109 had merged and 'any turn or change in height would increase the risk of a collision.' At this point the A109 was 0.3nm E of the Tutor, continuing to track WNW'ly, indicating 2400ft ALT; Tutor (A) was indicating 2100ft ALT. The A109 pilot reports that he did not sight Tutor (A) but that his passenger did and 'did not consider it very close.' Moreover, the A109 pilot reports that whilst his ac is fitted with TCAS and the Tutor was displayed on it, 'no TCAS alert was provided.'

The CPA occurred at 1656:07 as the A109 passed 0.1nm N of the Tutor, indicating 300ft above. Notwithstanding the request by the pilot of Tutor (A) to upgrade the ATS to a DS, the timing of the request was such that APP could do little to affect the outcome of the occurrence from that point. Appreciating the potential conflict between the A109 and Tutor, the SUP/ZONE, prevented a more serious incident by initiating the request to the A109 pilot to climb. Whilst this was not to an altitude that would achieve deconfliction minima, there was no requirement at that stage of the incident sequence to do this. The intention was solely to provide increased separation that was achieved. The sole remaining ATM issue that warrants examination is that the TI for Tutor (A) on the A109 was not updated until the request for DS at 1655:42.

Although there are 3 gaps in the RT exchanges between APP and those ac in receipt of an ATS between 1654:35 and 1655:42, they are relatively short, each of around 10 secs duration. It must also be borne in mind that these gaps will typically be spent by APP dividing their attention between all those ac in receipt of an ATS – 4 at the time of the Airprox - including the helicopter traffic ahead of Tutor (A) on a PAR – and keeping their logging up to date on their flight strips. Given their traffic loading, BM SM contends that APP could not have updated the TI and that any such argument would be based on hindsight bias. This might suggest that the bandboxing of APP/DIR was a contributory factor; however, in this instance, BM SM does not believe that this was the case. The workload at the time of the Airprox was almost wholly traffic within the RTC and all of APP's transmissions between 1654:35 and 1655:42 related to RTC traffic. Consequently, if the RTC traffic had been controlled by a dedicated DIR, it would have been unlikely that updated TI would have been passed to Tutor (A) before 1655:42.

It is concluded that the pilot of Tutor (A) sighted the A109 very late, arguably too late to have taken effective avoiding action if it had been required; the pilot of the A109 did not sight Tutor (A). The conflict was resolved by ATC at 1654:08, by initiating the request that the A109 pilot climb to a higher altitude to increase separation between the 2 ac.

**HQ AIR (TRG)** comments that Benson ATC provided a good level of service and resolved the conflict by requesting the A109 pilot to climb. It is also noted that the deconfliction advice was provided to the A109 pilot on a BS but that ATSOCAS presumes against such advice being provided to the Tutor pilot under a TS. This incident is a good example of controllers fulfilling their objective, stated in Regulatory Article 3001, to prevent collisions between aircraft. Considering the lack of an update on the TI, the Tutor pilot was poorly placed to assess the likely proximity of the traffic as there was limited detail in the initial call and it was at considerable range. An earlier request for a DS would have enabled a more effective intervention, although this was less imperative given the earlier co-ordination with the A109. Equally, a more routine use of DS by those on IFR recoveries would ensure controllers were able to provide earlier and more effective assistance to pilots, who hold the ultimate collision avoidance responsibility.

## **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 video recordings, reports from 2 of the 3 air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board agreed that Benson ATC had been helpful to the pilot of Tutor (A) although he might not have realised it at the time because at no stage was he informed that the A109 pilot was talking to ZONE or that co-ordination had been agreed. When the pilot of Tutor (A) was passed TI about the A109 as “..south-east, 5 miles, tracking west, 1 hundred feet above”, the apparent conflict would undoubtedly have been of concern to the pilot, especially when he encountered IMC. Therefore Members understood his request for an upgrade to a DS. Meanwhile, ATC had elected to engineer increased separation by requesting the A109 pilot to climb to 2500ft ALT. The A109 pilot acceded to this request without hesitation and quickly climbed his helicopter to the altitude requested. The Board commended the A109 pilot for his airmanship and co-operation as this was a good example of the collaborative way that the ATC ‘system’ should work to the benefit of all concerned. Here the Benson SUP showed sound appreciation of the developing situation through his instruction to ZONE, which was aimed at preventing further difficulty in the instrument pattern. The BM SM report makes it clear that a climb to 2500ft QNH (1021hPa) only provided 420ft separation against Tutor (A) flying level at 1900ft QFE (1015hPa); this was perhaps somewhat less than the minimum 500ft vertical separation the Tutor pilot might expect later under a DS, and not helped by the A109 pilot’s fluctuating Mode C level. Nevertheless, the Board understood the controllers’ rationale as APP was not required to effect planned ‘deconfliction minima’, merely TI at that stage as the Tutor pilot had only requested a TS. Members agreed with the Command perspective that an earlier request for a DS from the pilot of Tutor (A) would have given ATC more scope to achieve the specified deconfliction minima for this form of ATS. However, the pilot had only made this request when the A109 was 1.3nm away and some 23 sec before the contacts merged at 1656:05. APP could not descend Tutor (A) any further at that point because the ac was already level at the lowest terrain safe height for that vicinity, but a further climb for the A109 was still an option, which it seems the pilot would have been unlikely to refuse.

HQ Air (Trg) commented that the ATSOCAS doctrine presumes against deconfliction advice being provided under a TS, although it was provided to the A109 pilot here under a BS. However, the CAA Policy and Standards Advisor disagreed that this was so. The provisions of the TS and DS are in addition to those of a BS. Therefore ATC’s request to the A109 pilot to climb was proffered here to facilitate the ‘safe use of the airspace’ and to that end nothing prevents a controller from co-ordinating a flight under a TS against another similar flight, or a TS versus a DS, if it is appropriate and the pilot is willing to comply. In effect, ATC had resolved the conflict before they were required to do so and although they might not have achieved the ideal minima for a DS, in the Members view, ATC made a reasonable attempt in the circumstances and the time available. Although one Member demurred and perceived there was no conflict at all, this occurrence certainly met the criteria for an Airprox report. The Board concluded, therefore, that this Airprox had been the result of a conflict resolved by ATC.

Although the contacts had merged with 300ft of vertical separation evident, the Tutor pilot was not aware at that stage that the helicopter pilot had confirmed he was in level flight at an altitude clear above Tutor (A). All the Members agreed that there was no Risk that the ac would collide but they debated the classification of the event. One Member considered that because the separation was less than DS minima, the event should be classified as Risk Category C. However, the majority considered that the ATC system had worked as intended and that normal safety parameters had been maintained.

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

Cause: A conflict resolved by ATC.

Degree of Risk: E