

## AIRPROX REPORT No 2011113

Date/Time: 31 Aug 2011 1334Z

Position: 5230N 00013E (14nm  
NW of Mildenhall)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: KC-135R Grob G109B

Operator: Foreign Mil Civ Pte

Alt/FL: 3000ft↓ 2300ft  
QNH (1016mb) QNH (1015mb)

Weather: IMC In cloud VMC CLBC

Visibility: 9km 10km

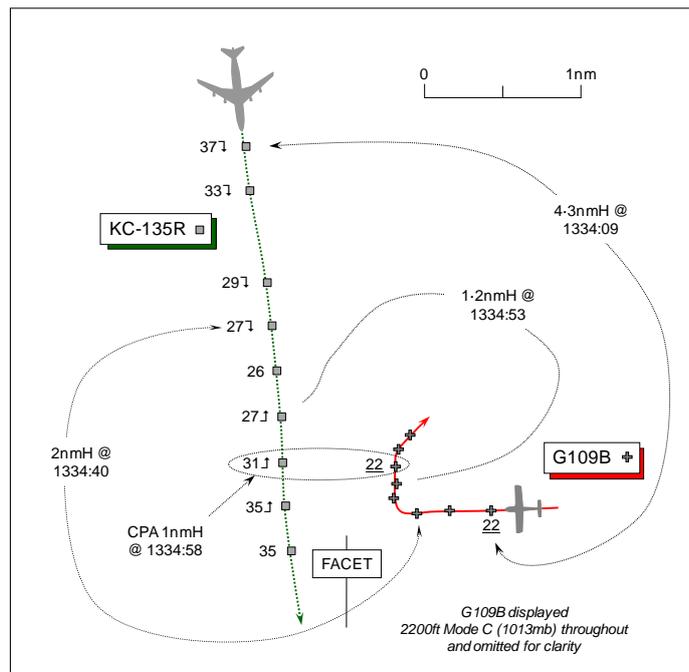
Reported Separation:

NK 1500ft V/1nm H

Recorded Separation:

1nm Min H

400ft Min V @ 1.5nm H



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE BOEING KC-135R PILOT (KC-135)** reports he was inbound to Mildenhall and in receipt of a TS from Lakenheath APPROACH (APP) on 309.2MHz. The assigned squawk was selected with Mode C; TCAS and Mode S are fitted. Landing lights and HISLs were on.

Descending IMC in cloud from FL60-3000ft, APP cleared them to descend from FL40 to 2600ft QNH (1016mb) and fly direct FACET [the IAF for an RNAV GPS approach to RW11 – 308R Mildenhall 12.5nm]. Breaking out below the cloud base at 3000ft descending at 1000ft/min, heading 195° at 240kt, the crew queried the local altimeter setting. When APP replied with confirmation of the QNH, TCAS enunciated a TA and so the crew attempted to acquire the conflicting traffic visually. TCAS then enunciated a CLIMB RA so they immediately discontinued their descent, applied maximum power, and began a rapid climb as demanded by TCAS of 4000ft/min+ on the Vertical Velocity Indicator (VVI), whilst maintaining their previously cleared flight path. After a few moments, the RA demanded they adjust their vertical speed indicating a level-off. Just as they began to level-off, the RA terminated with a CLEAR OF CONFLICT enunciation. By this time their KC-135 was O/H FACET and they continued the approach. They informed Lakenheath APP they had manoeuvred in response to a TCAS RA. Shortly after initiating the climb in response to the RA, he identified the conflicting traffic – a white low-wing aeroplane - in their 7-8 o'clock position in a R banked turn away from and behind their flight path. The conflicting ac's previous heading prior to conflict is estimated to have been about 290°. He assessed the Risk as 'medium'.

**THE GROB 109B PILOT (G109B)** reports he was in transit VFR from Old Buckenham to Peterborough/Conington at 85kt. He was not in contact with any ATSU and a squawk of A7000 was selected with Modes C and S; TCAS is not fitted.

About 13nm NW of Mildenhall heading 263°, flying straight and level at 2300ft QNH (1015mb) in VMC, some 1500ft clear below cloud with an in-flight visibility of 10km, a grey 4-engine ac – the KC-135 - was seen about 4-5nm away in his 2 o'clock in level flight well above, but possibly descending. He could see the ac would pass safely above him but in order to avoid its wake turbulence he decided to take up a holding position, orbiting to the R until the KC135 had safely passed. No rapid avoiding action was required, just a cautionary delay along his intended flight path. The minimum

separation was estimated to be 1500ft above his aeroplane as the KC-135 passed 1nm away. The Risk was assessed as 'none'. His aeroplane is coloured white with red/blue stripes; the HISLs and landing light were on.

**LAKENHEATH ATC FACILITY** reports with RT transcript that Lakenheath APP was controlling the KC-135 inbound to Mildenhall from the N under a TS. The flight was instructed to descend to FL40 and then cleared to cross FACET at or above 2600ft for the RNAV GPS approach to Mildenhall's RW11. This clearance put the KC-135 in direct conflict with a civilian VFR flight. The KC-135 pilot filed an FAA Hazardous Air Traffic Report (HATR) and Airprox after landing.

The civilian VFR ac - the G109B - was about 12nm W of Lakenheath squawking A7000 indicating an altitude of 2300ft QNH, westbound on a converging course with the KC-135. Traffic information was issued to the KC-135 crew when the ac were 4nm apart; however, no control instructions were issued to separate the ac and no safety alert was issued. The controller responsible did almost nothing to prevent this situation from occurring.

Subsequent to this Airprox, action considered appropriate by the Unit was taken.

UKAB Note (1): A review of the Lakenheath APP RT transcript reveals that at 1333:33, APP instructed the KC-135 crew to, "...cross FACET at or above 2 thousand 6 hundred feet cleared G-P-S runway 1-1....", which was read-back. At 1333:54, APP notified the KC-135 crew of, "...traffic [the G109B] 11 o'clock 4 miles northwest bound type unknown indicating 2 thousand 3 hundred". Moments later at 1334:00, the KC-135 crew reported, "..we are uh breaking outta the weather traffic below us". The LAC radar recording at 1334:09, shows the KC-135 descending through 3700ft (1013mb), with the G109B 4.3nm SE some 1500ft below maintaining 2200ft (1013mb) – about 2290ft QNH (1016mb). APP transmitted updated TI on the G109B at 1334:27, "11 o'clock in 3 miles now 2 thousand 3 hundred". The separation reduced below 2nm and 500ft after 1334:40, whereupon the G109B turns R onto a northerly reciprocal course to the KC-135. Confirmation of the local altimeter setting – 30.00 inches Hg – (1016mb) was requested by the KC-135 crew whereupon at 1334:48, APP updated the TI on the G109B for the third time, "Traffic is 11 o'clock for 1 mile 2 thousand 3 hundred appears turning northbound to avoid", which was acknowledged by the KC-135 crew. Meanwhile, the KC-135 levelled at 2600ft (1013mb) – about 2690ft QNH (1016mb) – before commencing a climb in response to the reported RA at 1334:53. Five seconds later, at 1334:58, when the ac are shown on the radar recording at the CPA, passing 1nm port-to-port abeam one another and the G109B is 900ft below the KC-135, the latter's crew reported, "[KC-135 C/S] has traffic in sight we got a R-A and uh climbing to 3 thousand 5 hundred to avoid traffic", which was acknowledged by APP with, "[KC-135 C/S] roger". There are no further transmissions relating to this incident on the RT transcript. The G109B then turns further R into the reported orbit maintaining 2200ft Mode C as the KC-135 continues on course for FACET.

**HQ 3AF** comments that superficially this is a straightforward Airprox where the controller fulfilled the requirements of a TS, albeit within 4nm, and the KC-135R pilot reacted to a TCAS RA. However, Lakenheath RAPCON, who provide radar services to Mildenhall traffic, carried out their own investigation immediately after the Airprox and reached a slightly different conclusion. USAF ATSU's based outside of the USA apply host nation procedures together with their own FAA procedures and where differences occur, the most stringent regulation predominates. In this case, it was found that the controller should have applied the FAA prescribed separation in the traffic pattern which, in turn, should have pre-empted the TCAS RA.

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

Information available included reports from the pilots of both ac, a transcript of the relevant Lakenheath RT frequency, radar video recordings, a report from the ATC Facility involved and comment from the appropriate Command.

It was clear to the Board that the G109B pilot, in transit VFR at 2300ft ALT, but without the benefit of an ATS, had spotted the KC-135 about 4-5nm away and although content the other ac would pass safely had elected to take up an orbit thereby remaining clear of any wake turbulence generated by the larger ac. The radar recording shows that the G109B pilot turned R into the delaying orbit as the separation reduced below 2nm, just as the KC-135 was levelling at its assigned altitude of 2600ft, some 400ft clear above the indicated level of the G109B. For his part the G109B pilot was unconcerned about the occurrence. Whilst his action certainly forestalled a closer encounter, the G109B's proximity prompted a TCAS CLIMB RA in the KC-135 and shortly afterwards the effect can be seen on the recording, the steady climb achieving 900ft of vertical separation as the ac passed 1nm apart at the closest point.

The KC-135 crew had accepted the TS provided, even though they were flying under IFR in IMC and the MAA Advisor questioned whether they were able to effectively discharge their responsibilities, to see and avoid other traffic in Class G airspace, before they broke out beneath the cloud base. It seemed that a DS would have been more appropriate here. Good practice dictates that when flying IMC in cloud the principle of asking for the best service available holds sway and a DS should be sought, taking stock again if the proffered avoiding action advice proves incompatible with the flying task. If applied here, it could have prevented this Airprox and would have been in-line with the ATS the KC-135 crew perhaps expected from a USAFE RAPCON facility.

Under the TS provided by APP, three transmissions of TI were given, advising and updating the KC-135 crew of the relative position and altitude of the G109B, whilst they complied with the Lakenheath controller's instruction to route direct FACET and descend to 2600ft ALT. Following normal UK ATSOCAS procedures, under a TS TI will be passed that will be updated if the traffic continues to constitute a hazard; however, the controller is not required to achieve deconfliction minima, no avoiding action will be given and the avoidance of other traffic is ultimately the pilot's responsibility. Some Members were surprised that the KC-135 pilots continued to descend towards the G109B displayed on their TCAS; a reduction in the ac's ROD might have afforded more vertical separation and forestalled the RA whilst also allowing compliance with APP's instructions. However, the KC-135 did not have far to run to the IAF and the crew would have been keen to descend below cloud, nonetheless, controller Members questioned whether the KC-135 crew should have been placed in this situation. APP had instructed the KC-135 crew to fly to FACET and towards the G109B's projected track, which coupled with the descent was effectively a vector in close proximity to the G109B. Controller Members opined this was contrary to the UK rules for a TS mandated under CAP774. Whereas there was no compunction on APP to achieve defined deconfliction minima, Members were aware that when vectoring traffic in an instrument pattern controllers should take into account traffic in the immediate vicinity, so that a risk of collision is not knowingly introduced when following their instructions. Consequently, it was suggested that the Cause was that APP had vectored the KC-135 into conflict with the G109B. However, a civil controller Member contended that as the KC-135 had been stopped off above the observed G109B, APP would have been aware that an element of vertical separation would have been maintained, thereby averting a close conflict. Nevertheless, it was plain from the Command's comments that FAA doctrine held sway. The HQ3AF Advisor stated that the RAPCON's normal practice was to provide control instructions to ensure that separation was maintained against unknown traffic in such circumstances, which had not been accomplished by the controller here as expected. Whilst this factor could not be ignored, the Board had to base their assessment on expected norms in the application of standard UK ATSS in line with what was actually provided. Moreover, the G109B pilot's delaying action was also instrumental here and had effectively forestalled the conflict with the KC-135 before the climb in response to the TCAS RA is evident the recorded radar data revealed. Following a wide ranging debate, the Board concluded that this Airprox had been the result of a conflict in Class G airspace resolved by the Grob G109B pilot.

Turning to the inherent Risk, the radar recording revealed that the G109B pilot had turned onto a parallel course thereby preserving horizontal separation of 1nm at the closest point, whilst retaining visual contact until the ac had passed. As this occurred the KC-135 crew followed their CLIMB RA, which ensured that effective avoiding action was taken in the vertical plane, whilst also identifying the

conflicting G109B visually. The Board agreed unanimously that these factors, when taken together, had effectively removed any Risk of a collision in the circumstances conscientiously reported here.

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

Cause: A conflict in Class G airspace resolved by the Grob G109B pilot.

Degree of Risk: C.