

AIRPROX REPORT No 2013155

Date/Time: 7 Nov 2013 1227Z

Position: 5248N 00039E
(10nm NNE RAF Marham)

Airspace: Lon FIR (Class: G)

Aircraft 1 **Aircraft 2**

Type: MC130 Tornado

Operator: Foreign Mil HQ Air (Ops)

Alt/FL: 13000ft FL120
QNH (1004hPa¹)

Conditions: VMC VMC

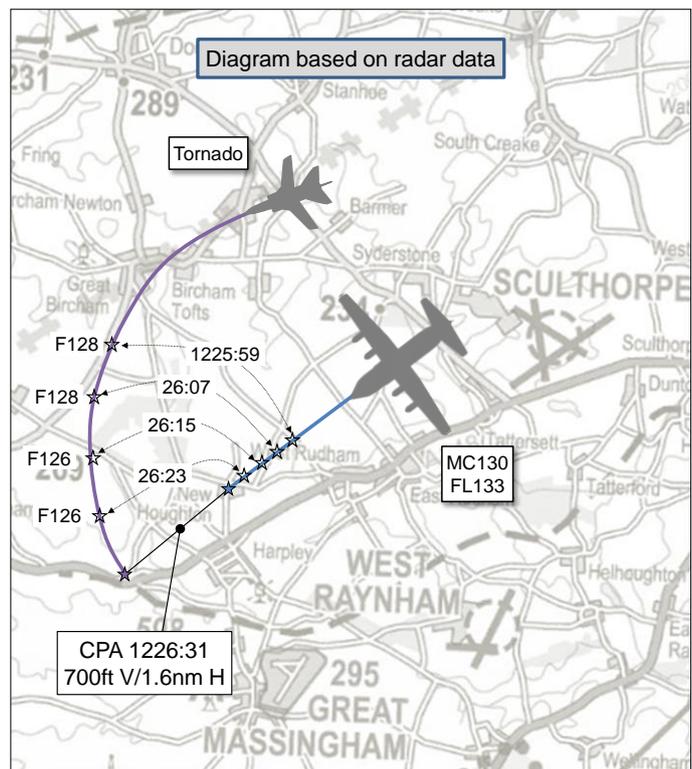
Visibility: 10nm 40km

Reported Separation:

300ft V/1.8nm H '3-5nm'

Recorded Separation:

700ft V/1.6nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE MC130 PILOT reports conducting airdrop operations at Sculthorpe. The grey camouflaged aircraft had navigation lights and strobes selected on, as was the SSR transponder with Modes A, C and S. The aircraft was fitted with E-TCAS. The pilot was operating under VFR in VMC and reported being in receipt of a Traffic Service from 'London Mil' on UHF and 'Marham Approach' on VHF. He reported encountering several 'fighter-type aircraft in the vicinity'. The first contact crossed co-altitude from left to right, approximately 3nm in front, then circled behind, close enough for the loadmasters to identify the type as a [Tornado] GR4 from the back of the aircraft. The second contact was nose-to-nose at 5nm while they were heading 277° at 140kt, dropping personnel from 13,000ft. The aircraft turned to the east at a range of 1.8nm and approximately 300ft below. Calls to Marham Approach and on UHF Guard frequency were acknowledged by both the aircraft and the controller. The controller informed them that the NOTAM did not restrict the use of the airspace and the pilot of the GR4 said that he "had every right to be here". The MC130 pilot stated that this was well understood but the Tornados were close enough to raise concern over the safety of the parachutists.

He assessed the risk of collision as minimal to the MC130 but 'High' to the parachutists in the air.

THE TORNADO PILOT reports conducting medium-level air-to-ground training as number 2 of a pair. The grey camouflaged aircraft had navigation and strobe lights selected on, as was the SSR transponder with Modes A, C and S. The aircraft was not fitted with a TAS or ACAS. The pilot was operating under VFR in VMC in receipt of a Traffic Service from Marham DIR. Whilst in the vicinity of Sculthorpe, heading north at 300kt, ATC advised the crew about a Hercules conducting 'para dropping' at Sculthorpe. The crew initially gained radar contact and then visual with Hercules. They continued medium-level training, whilst remaining visual and 3-5nm clear of Hercules. The pilot was informed on landing that the Hercules pilot had filed an Airprox.

He perceived the severity of the incident as 'Low'.

THE MARHAM CONTROLLER reports responding to the reported Airprox 5 days after the event occurred. The [MC130 C/S] pilot was in receipt of a Basic Service, in the block SFC-FL130, in The controller passed traffic information to [MC130 C/S] on the Tornado GR4 traffic and also on 2 other

¹ Reported as 29.63 inHg

tracks (one of which appeared to be non-squawking on the Marham Radar display) operating in the vicinity of Sculthorpe and updated as appropriate. The controller was conscious of the nature of the para-dropping task at Sculthorpe and recalled the [MC130] pilot asking for updates; the controller passed further Traffic Information as appropriate. He liaised with the Marham Radar controller, who was working [Tornado formation C/S] to advise them of the para-dropping activity. He believed that this was relayed to the Tornado formation. He subsequently heard the pilot of [MC130 C/S] challenge the traffic the controller knew to be [Tornado formation C/S] on guard about their presence and nature of activity at Sculthorpe. At some point through the scenario the Radar controller received a landline call from Mildenhall Ops regarding the activity at Sculthorpe. Mildenhall were briefed that the NOTAM for Sculthorpe activity was not an MTA² and that [Tornado formation C/S] were visual with the MC130 and the activity at Sculthorpe. He advised the pilot of [MC130 C/S] the same message regarding the status of the NOTAM and was unaware of any additional airspace restrictions at Sculthorpe outwith the advisory NOTAM. The controller did not consider this event to be reportable at the time due to the relative positions of the aircraft, not encroaching within approximately 1.5nm of each other with all aircraft visual with each other.

He perceived the severity of the incident as 'Negligible'.

THE MARHAM SUPERVISOR reports that due to manpower constraints and illness on the day, he was particularly constrained for manning and felt it necessary to alleviate the Radar controllers' burden by operating the Marham LARS VHF task and reverted to an ATCO I/C Watch over the lunch-time period.

Factual Background

The MC130 parachuting activity was subject to a NOTAM from the MC130 operating authority; the details of the NOTAM are reproduced below:

(H5810/13 NOTAMN
 Q)EGTT/QWPLW/IV/M /W /000/133/5253N00051E008
 A) EGTT B) 1311071100 C) 1311071600
 E) PJE AND AIR DROPS WI AREA BOUNDED BY 525430N 0010300E - 524636N 0004430E - 525130N 0003918E - 525930N 0005700E - 525430N 0010300E (SCULTHORPE, NORFOLK). 13-11-0413/AS3
 F) SFC G) 13300FT AMSL)

Analysis and Investigation

Military ATM

This incident occurred at 1227 on 7 Nov 13 at Sculthorpe between a pair of Tornados and an MC130. The Tornados were conducting general handling prior to returning to RAF Marham and the MC130 was parachute dropping at the Sculthorpe DZ. The Tornados were each in receipt of a Traffic Service from Marham Approach controller (APR) and the MC130 was under a Basic Service with Marham Zone (Zone).

All heights/altitudes quoted are based upon SSR Mode C from the radar replay unless otherwise stated.

The ATC workload and task difficulty was described as 'medium to low'. The pair of Tornados were provided the manoeuvring block of 5 to 15,000ft under a Traffic Service to conduct general handling with APR. At 1217:20, APR transmitted, '*Marham all stations paradropping activity at Sculthorpe er aircraft five miles north east Blakeney Point inbound Flight Level one three zero.*' Following the Tornados splitting from formation, the number 2 aircraft was provided a discrete squawk and a Traffic Service. At 1219:30, APR called Traffic Information (see Figure 1), '*[Tornado callsign 2] identified traffic service reduced. Traffic south east three miles manoeuvring*

² Mandatory Temporary Avoid

para dropping aircraft similar level. The TI was updated and further TI was provided to the Tornado pilots on transiting fast jets. The MC130 was squawking 0033 for parachuting activities and Tornado callsign 2 was squawking 3647.

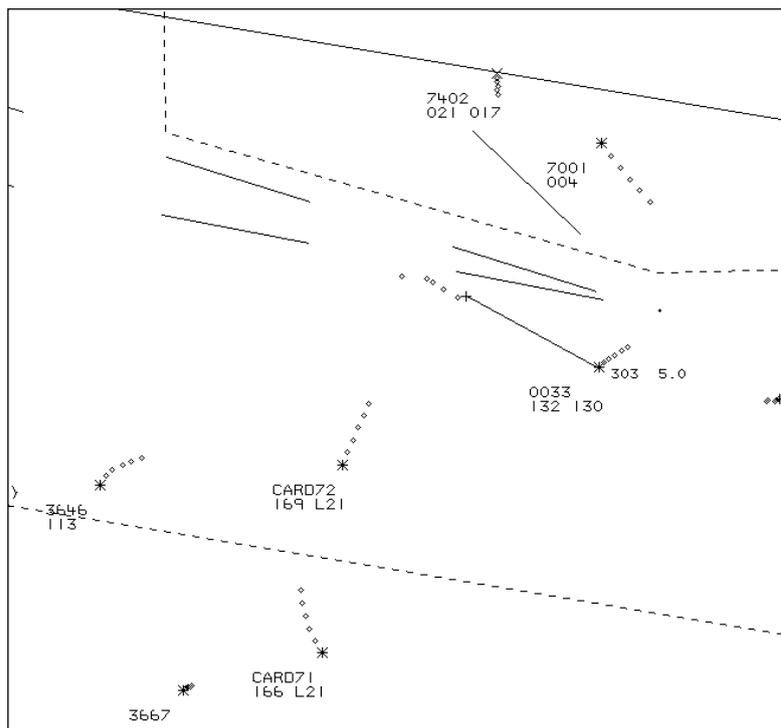


Figure 1: Aircraft geometry at 1219:30

At 1219:53, Zone passed TI to the MC130 pilot (see Figure 2), *'[MC130 C/S] traffic north four miles tracking east, tornado similar level.'* The MC130 pilot reported the Tornado in sight. At 1221:25, Zone updated the MC130 pilot, *'[MC130 C/S] Er traffic south three miles tracking west no height information believed to be number two of a pair operating not below Flight Level one six zero'*. The MC130 pilot once again indicated that he was visual.

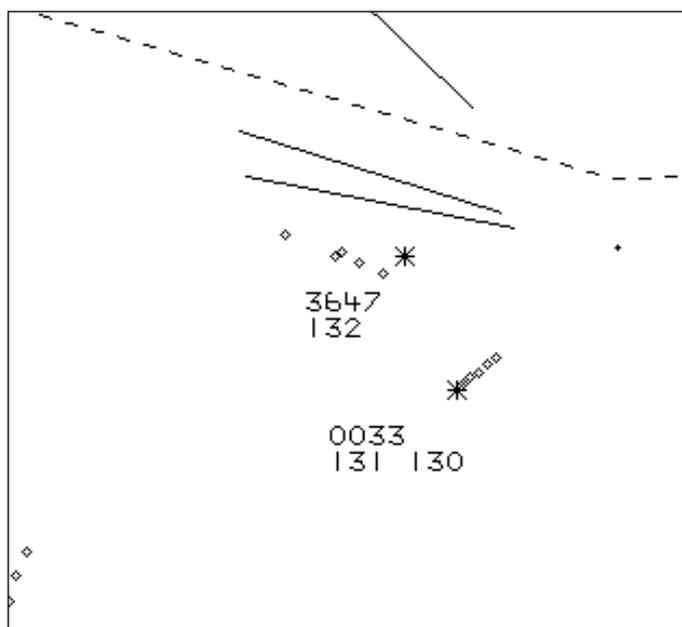


Figure 2: TI passed at 1219:53

APR requested whether the Tornado callsign 2 was still visual with the MC130 at 1224:41 and the Tornado pilot confirmed visual. At 1227:08, the MC130 pilot felt the need to transmit on guard, *'Any traffic any traffic [MC130 C/S] on guard two four three point zero operating over the vicinity of*

Sculthorpe barracks air based incursion operations dropping personnel. Please keep clear of the area we have an ?? [NOTAM] out.' The recording was not clear; the word NOTAM was believed to have been used. At 1228.13, the MC130 pilot asked APR if they had contact with the Tornados circling in the vicinity of Sculthorpe. APR reported that they were on another frequency but they had been told about the MC130's presence. The MC130 pilot replied at 1228:33, *'Er sir please relay they are crossing abeam our nose they've done it twice and er we have actual live parachute operations going on here in Sculthorpe and they are impossible to us.'* Zone replied at 1228:46, *'[MC130 C/S] I'll ask if they can manoeuvre but I believe they are operating in accordance with the NOTAM.'*

When questioned on RT, both Tornado pilots reported clear of Sculthorpe and Zone reminded them that the MC130 pilot had asked for a wide berth.

A number of fast-jet callsigns were operating in the vicinity and Figures 3, 4 and 5 show the repeated proximity to the MC130 (squawking 0033). The radar replay shows CPAs of 1.7nm at 1221:24, 1.7nm at 1224:50 and 1.6nm at 1226:35.

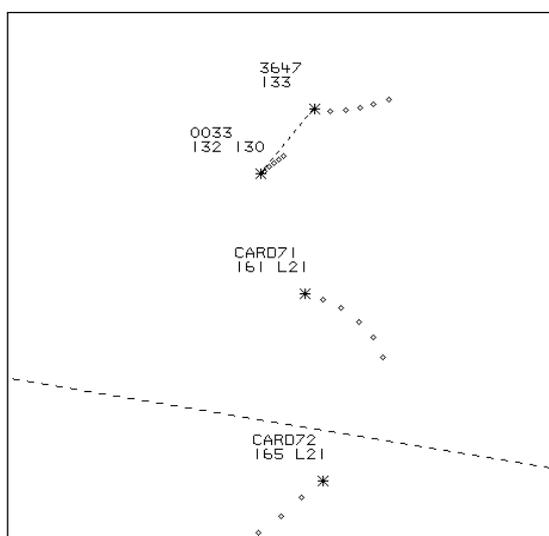


Figure 3: Aircraft geometry at 1221:24 with a separation of 1.7nm

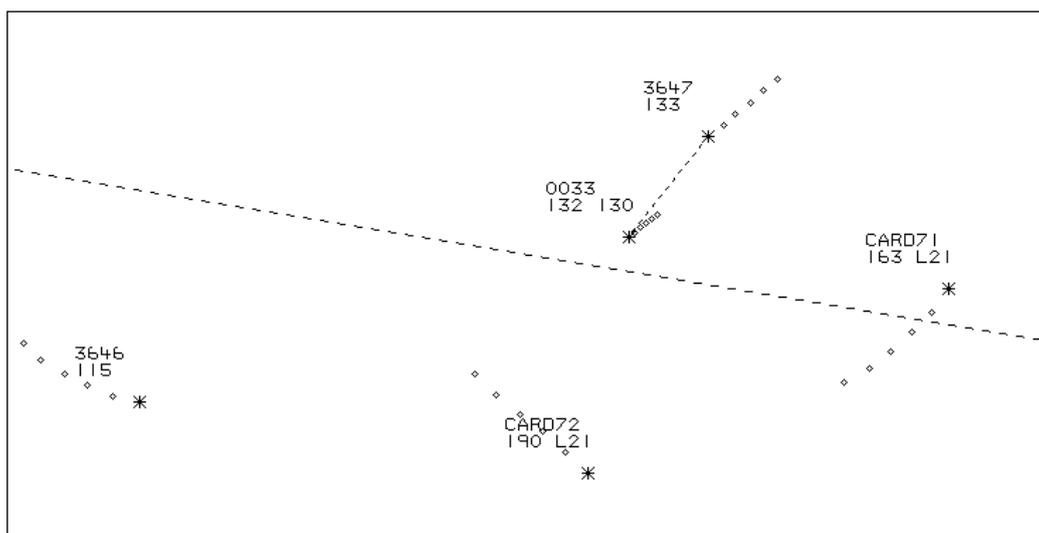


Figure 4: Aircraft geometry at 1224:42 with a separation of 1.7nm

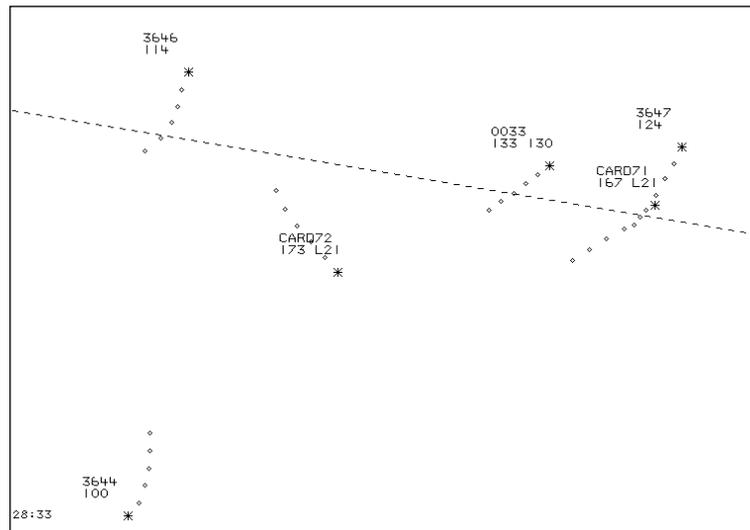


Figure 5: Aircraft geometry at 1228:33 when the MC130 commented on the Tornado positioning

The transcript and radar replay show that 4 separate fast-jet callsigns were in the area and the Tornados were seeking airspace in which to GH. Tornado callsign 2 was manoeuvring in the area most affecting the MC130. All callsigns were being controlled by Marham and following TI from APR and Zone, all pilots were visual with each other. The Tornados were given the block 5,000 to 15,000 feet on Chatham 1002 Hpa and the MC130 was dropping from 13,000 feet on 29.63inHg (1004hPa). The Tornado crews stated that the incident had 'negligible' severity; however, the MC130 pilot was clearly frustrated by the continued presence of the Tornados and initiated the Airprox. The MC130 pilot identified the aircraft as Tornado GR4s and stated that they were flown below his aircraft whilst personnel were being dropped. Whilst the Tornados were flying in accordance with the NOTAM rules, the MC130 pilot still had concern for the safety of the parachutists. Airprox 2013115 in July 2013 was also between an MC130 para-dropping low level at Sculthorpe and a Tornado in the Marham RTC. The associated UKAB assessment produced the recommendation that: Marham and Mildenhall review the coordination and SOPs for operations at Sculthorpe.

ATM personnel provided accurate and persistent TI and provided a conduit for information, where possible. The Marham Supervisor reports that Mildenhall Ops spoke to Marham regarding the Sculthorpe activity and were informed that the advisory NOTAM was not an MTA and that the Tornados were visual with the activity at Sculthorpe. The Tornado crews maintained that they were always visual and clear of the paradropping. SATCO Marham is working on an LOA for Sculthorpe Ops and through the East Anglia Airspace Users Working Group, controllers can discuss airspace issues. Marham ATM offer briefs to aircrew at Lakenheath and Mildenhall, specifically aimed at briefing unfamiliar crews on what they can realistically expect from UK ATC and local area procedures.

The issues at Sculthorpe are now well documented through Airprox reports and recommendations and BM SPA are content that this issue can be improved upon if all users are engaged.

UKAB Secretariat

Both pilots were equally responsible for collision avoidance³. If the geometry is considered 'converging', the MC130 pilot was required to give way to the Tornado⁴. If the geometry is considered 'overtaking', the MC130 pilot had right of way and the Tornado pilot was required to 'keep out of the way' by altering course to the right or to 'keep out of the way' until the MC130 had been passed and was clear⁵.

³ Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions)

⁴ *ibid.*, Rule 9 (Converging)

⁵ *ibid.*, Rule 11 (Overtaking)

Comments

HQ Air Command

This incident occurred within 4 months of a similar situation between a para-dropping aircraft and a Tornado in the Marham radar pattern. The C-130 had submitted a NOTAM warning of the para-dropping activity and it would be reasonable to assume that the Tornado crews were fully aware of the provisions of the NOTAM (which did not afford any protection to the para-dropping aircraft in the form of segregated airspace). However, the Tornados were operating close enough to the Hercules to cause concern for the safety of the parachutists. For their part, all Tornado crews were visual with the Hercules and maintained adequate separation at all times, including to the rear of and below the aircraft. Previously, the UKAB recommended that Marham and Mildenhall review the coordination and SOPs for operations at Sculthorpe – this work is currently ongoing and this incident will serve as evidence to that review; one of the outputs of the review will need to be an agreed separation distance between para-dropping aircraft and fast jets. It is worthy of note that the controllers at Marham did everything they could to pass timely and accurate TI to all aircraft involved, and at no stage did the C-130 feel it necessary to manoeuvre away from the Tornados.

USAFE

The pilot of the MC-130 was aware that the NOTAM did not give him exclusive use of the airspace but considered that the GR4 was closer than he thought wise with regard to the safety of his parachutists. We are at a loss to understand why the GR4s chose to carry out GH in the block 5 to 15000ft in an area where they knew that paradropping was being carried out from 13000ft. Lastly, direct comparison between this incident and Airprox 2013115 is specious as the circumstances in each differ markedly.

Summary

An Airprox was reported when an MC130 and a Tornado flew into proximity at 1227 on 7th November 2013. The MC130 pilot was conducting para dropping operation under VFR, in receipt of a Basic Service from Marham Zone. The Tornado pilot was conducting medium-level operations under VFR, in receipt of a Traffic Service from Marham APR.

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 the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The Board quickly agreed that both the MC130 and the Tornado pilots were entitled to be operating in the area and blocks reported. It was also agreed that the MC130 pilot had been aware of the limitations of protection afforded by his NOTAM, and that all pilots were aware of their responsibilities under the ATSOCAS services in which they were in receipt. Notwithstanding, and not privy to the imperatives for the GH being conducted, some members felt that the Tornado pilot could reasonably have been more flexible and could have avoided the less manoeuvrable MC130 by a much wider margin, especially having been advised of its paradropping activities and the impact that his flight (being only 1.6nm away at CPA) was having upon them. Nevertheless, all members were agreed that the incident was essentially one of perception; the MC130 pilot perceived that the Tornado was too close whilst the Tornado pilot perceived otherwise. From the radar picture it was apparent that, in the end, there had been no risk of collision between either the aircraft or the parachutists. As such, it was decided that this occurrence was a sighting report; normal safety standards had applied from the point of view of collision risk. However, members felt that the mis-match in perception could quite easily have been prevented with the application of effective coordination between these two units who both commonly use the busy East Anglian airspace. Board members recalled their recommendation from Airprox 2013115 for better coordination and SOPs between Marham and

Mildenhall regarding operations around Sculthorpe, and were heartened to be advised that this was ongoing, that a meeting had been held in mid-March 2014 between the parties concerned, and that a consultation paper would shortly be produced.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A sighting report.

Degree of Risk: E.

ERC Score⁶: 2

⁶ Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.