

## AIRPROX REPORT No 2010121

Date/Time: 31 Aug 2010 1734Z

Position: 5749N 00401W (Tain Range)

Airspace: EGD 703 (Class: G)

Reporting Ac Reported Ac

Type: Tornado GR4 PA28

Operator: HQ AIR (Ops) Civ Pte

Alt/FL: 1000ft 150ft  
(QFE 1023mb) (QNH 1023mb)

Weather: VMC CLOC VMC CLBC

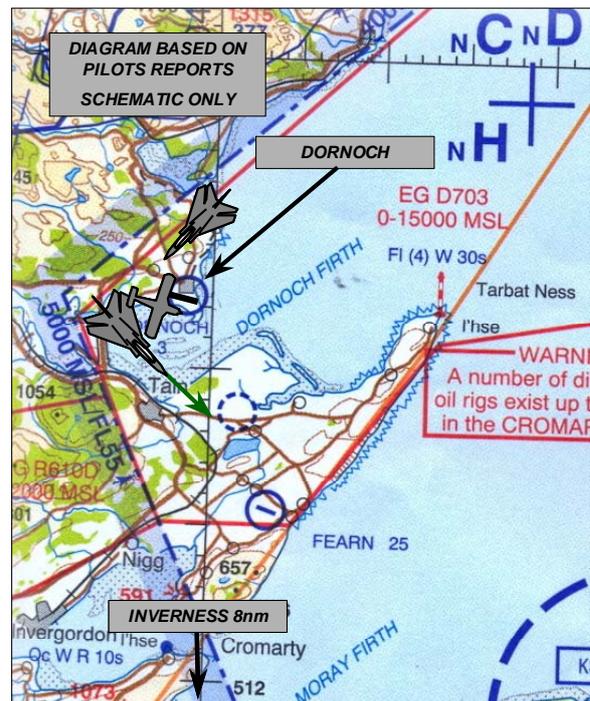
Visibility: 10km 15nm

Reported Separation:

500ft V/500ft H 300ft V/1nm H

Recorded Separation:

NR



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE TORNADO GR4 PILOT** reports leading a pair of ac conducting practice weaponry in Tain Air Weaponry Range (AWR) (EGD 703 See UKAB Note (1)) squawking 7002 with Mode C. Leader was heading 130° at 500kt, 3nm W of the Range Control Tower and about to commence a high energy 'pop' manoeuvre in order to attack a target from the West, when a light ac was seen 1000ft away in the Range Danger Area, at a height of about 1000ft agl just to the left of his nose but flying away from him. He immediately passed the 'stranger's' position to his No2 who was in 30sec trail behind him and then informed the Range Safety Officer (RSO) of the light ac and requested its heading and intentions. The RSO then identified the 'stranger' and informed them that the ac was seen to be exiting the Range to the NW.

When the 'stranger' was clear of the Range Danger Area the GR4 leader commenced an attack from the East and then exited the range to the S to RTB, while his No2 remained for a further pass. As Tornado 2 recovered from his attack he saw the ac again, appearing to have re-entered the Range from the NW, and he climbed above the ac in order to avoid a conflict. The RSO then informed him that the ac had re-entered the Range and was now exiting to the W.

They recovered to RAF Lossiemouth without further incident and assessed the risk as being Medium.

**THE TORNADO STATION** comments that they have highlighted the issue of penetrations of 'safe areas' in a recent Staneval newsletter.

**THE PA28 PILOT** reports that he took off from RW05 at Inverness on a private VFR flight to Dornoch Airstrip in a blue and white ac. He was initially flying at 75kt, in receipt of a BS from Inverness, squawking as directed with Mode C, with Tain Range frequency set as the standby. Shortly into the flight he was informed by Inverness he would be transferred to Safety Com, which he then set as the standby freq in place of the Tain frequency. While at about 2500ft over the Black Isle [outside EGD 703] he called APR and then switched to Safety Com as instructed.

On arriving at Dornoch he remained 1/3nm S of RW, checked the windsock and prepared to enter right base for landing on RW10; at that point his passenger, also a pilot, said he had seen another ac. This caused him concern and as a result he became high on the approach so he executed go-around. Shortly into the climb he saw a jet ac to the left of his nose over the water about 1nm ahead

turning and possibly climbing from low level. He immediately made a 120° turn to right onto a heading of about 220° and climbed to 2500ft to depart the area without delay.

He assessed the risk as being low.

After landing at Inverness he telephoned TWR and Tain Range to discuss this incident. The flight time from the freq change to Safety Com was very short (about 10 min) and indicated to him that the Range was inactive. At no time in this flight was he advised to contact Tain range.

He pointed out that on a previous flight to Dornoch at about the same time in the evening, he was also instructed by Inverness APR to use Safety Com and he landed at Dornoch without incident. Further, the only times Inverness APR had advised him to use Safety Com were on flights in the Dornoch area when Tain Range was not active. As a consequence he considered that the transfer to Safety Com by Inverness APR indicated the range was not active; on other flights in the area when the range was active he had contacted Tain on 122.75 as he would have done on this occasion had he not been advised to go to Safety Com.

**THE TAIN RSO** reported that 2 Tornado GR4 ac based at RAF Lossiemouth entered EGD 703 from the West to operate in the range. They reported seeing a light ac above the town of Dornoch, which is within the boundary of EGD 703, at about 1000ft. The light ac headed W and departed EGD 703, before turning N. The Tornados then set up for a run-in from Brora; both ac came through [the target] before leader departed the range and No2 set up for a run-in from the E.

He then saw the light ac again overhead Dornoch with Tornado 2 turning towards it so he informed the crew of the position of the ac and they replied that they were visual with it.

The light ac then turned W and, after passing Dornoch Bridge, it appeared to turn S towards Inverness so he called D&D to request that they identify the ac and put a call out on VHF guard to ask the ac's intentions. D&D spoke to Inverness ATC who said they believed the ac to be a PA28 Registration x-xxxx. He then called Inverness APR who said they had spoken to the pilot when the ac left their airspace and they had instructed him to go to the Safety Com Frequency.

At 1910 the pilot telephoned and said that he had been instructed by Inverness APR to transfer to Safety Com. The RSO informed the pilot that he would be submitting a report as the pilot had not requested permission to enter EGD 703 and had come close to a fast jet ac. Later he spoke to the Tornado Leader and the No2 navigator, who said the light ac was about 500 ft and 2/3nm away.

A transcript of the RT was provided.

**INVERNESS ATC** were not aware of the Airprox and did not provide a report.

**HQ AIR BM SM** commented that a Tornado GR4 pair was operating within an AWR (EGD 703) when an Airprox occurred with a PA28 that had infringed the range. Reports from the GR4 leader, the RSO, a radar replay and a RT tape transcript, were available to conduct this analysis; the radar replay, however, was inconclusive, therefore the investigation was conducted using information gained from the reports and RT transcripts.

The GR4 crews were conducting practice weaponry in the AWR and made initial contact with the RSO at 1731:33, when they received a range joining clearance. At that time the RSO was not aware of the presence of the PA28; therefore TI was not passed on initial contact. The first indication the RSO had of other traffic was when Tornado Leader reported an ac in their vicinity at 1734:44. This prompted the RSO to look in the reported position and where he saw a PA-28 (registration later identified). As the Tornados made a further run at 1739:44 the RSO again saw the PA28 overhead Dornoch Hotel, he estimated at 1000ft. He passed TI and Tornado leader reported visual and manoeuvred the formation to pass above the ac. The remainder of the sortie passed without incident and Tornado 2 reported leaving the range at 1742:00.

RSOs at AWRs generally operate without of surveillance equipment; consequently, their awareness of ac operating on the extremities of the AWR is dependent upon pilots operating in the area making information calls to them, under the auspices of the Danger Area Activity Information Service (DAAIS). Furthermore, the UK Mil and Civ AIP at ENR 5.1 states:

“aircraft wishing to use Dornoch or Easter aerodromes during range opening hours are to contact Tain Range on 122.75 prior to entering the range.”

This incident happened in a notified AWR and as such the ac operating within it are assumed to be protected from other airspace users in order to carry out weaponry sorties with tactical freedom. In this case the RSO carried out his duties effectively and, once aware of the proximity of the PA28, continued to scan in order to help provide early warning to the Tornados.

**ATSI** commented that the PA28 was on a VFR flight from Inverness Airport to Dornoch airfield.

Inverness was operating combined TWR and APR control positions but at the time of the incident neither ac was in receipt of a service from Inverness.

The Inverness weather was:

METAR EGPE 311720Z 05006KT CAVOK 16/08 Q1023=

At 1721 the PA28 departed from Inverness airport for Dornoch displaying the Inverness SSR conspicuity Code 6177. At 1723 the PA28 was asked to report when intending to change frequency for Safety-Com Dornoch.

At 1723 the Tornado formation called Inverness saying, *‘north to routeing doors to the Beaully then north to Tain’*; at 1725:30 they reported clearing the gap and were instructed to report ready to leave the frequency for Tain. Inverness passed the formation TI on the PA28, positioned S abeam *‘the Glory gap’*, heading for Dornoch airfield. At 1726:44 the PA28 pilot was asked if he had copied the Tornados, shortly to pass N abeam en-route Tain and he confirmed that he had copied the TI.

At 1727 the Tornado formation reported abeam the *‘Black Isle en-route Tain’*. At 1728:29 the PA28 was instructed to squawk 7000 and transferred to Safety Com frequency 135.475MHz, which the pilot acknowledged.

UKAB Note (1): EGD 703 is promulgated in the UKAIP (ENR 5-1-3-24) as a Danger Area from SFC to 15000ft, 0900-2200 Mon -Thu etc (the incident took place on a Tuesday) covered by [Statutory Instrument] SI 1940/644. That being the case, permission to enter from the DAAIS (Tain on 122.75) is required before entry. Further, as stated above, ac using Dornoch Aerodrome during the hours of operation of EGD 703 are required to contact Tain before entering the Danger Area.

UKAB Note (2): The incident occurred below the base of recorded radar cover.

**HQ AIR (Ops)** comments that this incident would be better classified as an infringement of an active danger area than an Airprox. The GR4s visually acquired the PA28 in good time to avoid it by an appropriate margin and did so. The reasons for the PA28 entering the range without the required permission is worthy of further investigation.

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

Information available included reports from the pilots of both ac, a radar recording and reports from the appropriate ATC and operating authorities.

The Board agreed that although this had been a serious airspace infringement, as reasoned below there had not at any time been a risk that the ac would have collided.

Tain is a busy Air Weapons Range with ac performing high-energy weaponry delivery profiles that sometimes preclude normal lookout since crewmembers need to concentrate on flying the weaponry pattern accurately, performing safety checks and acquiring the target. That being the case, such ranges are classified as danger areas for good reason and published procedures for landing at civil airfields such as Dornoch should be strictly adhered to. Further, Members noted that the PA28 pilot had incorrectly assumed that the Range was not active, despite that it was during the published activity hours, and he further incorrectly assumed that he could therefore enter the range without needing to get permission. Members agreed that these were key incorrect assumptions that had led to the conflict. The GA Member counselled that pilots should treat ranges with great respect, as they can be very dangerous places.

Controller Members agreed that, although the Inverness APR controller had complied with local orders, he could have been pro-active in helping the PA28 pilot. Although there is no landline communication between Inverness ATC and Tain Range, the controller was aware that the Tornados were heading there, that the Range was open and that it was within promulgated range opening hours. That being the case, and since he knew the PA28's destination, controller Members agreed that he should have prompted the PA28 pilot to call Tain as required by the UKAIP, rather than Safety Common.

When assessing the risk, Members considered the geometry of the incident and precisely when the respective pilots had seen the opposing ac. The lead Tornado pilot saw the PA28 after turning hard left onto 130° just before pulling-up for the weapon delivery profile. At that time the PA28 had already crossed the Tornado's intended flightpath well above and was probably over or very close to Dornoch airfield; that being the case, although neither pilot had seen the opposing ac until after they had crossed, the two ac had been separated by about a mile. The separation between the PA28 and the second Tornado was similar, although the geometry differed slightly. In addition, both Tornado pilots discontinued their weaponry pass to allow the PA28 to depart the range safely.

Members thought it inexplicable however, that the PA28 had then re-entered the range without calling them, in a second attempt to reach Dornoch. By then he knew positively that the range was active and he flew into conflict with the No2 Tornado for a second time; Members speculated that perhaps the PA28 pilot had incorrectly believed that, although they had no authority to do so, Inverness APR had somehow cleared him into the range. Fortunately the No2 Tornado crew saw the PA28 in good time to avoid it.

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

Cause: The PA28 pilot entered an active Danger Area without permission and flew into conflict with the Tornado GR4s.

Degree of Risk: C.