

## AIRPROX REPORT No 2012102

Date/Time: 18 Jul 2012 1515Z

Position: 5204N 00008E (1.5nm S  
Duxford - elev 124ft)

Airspace: ATZ/R112 (Class: G)

Reporting Ac Reported Ac

Type: C172 R44+2xR22s

Operator: Civ Trg Civ Trg

Alt/FL: 1300ft 1400ft  
QNH (1008hPa) QNH

Weather: VMC CLBC VMC CLBC

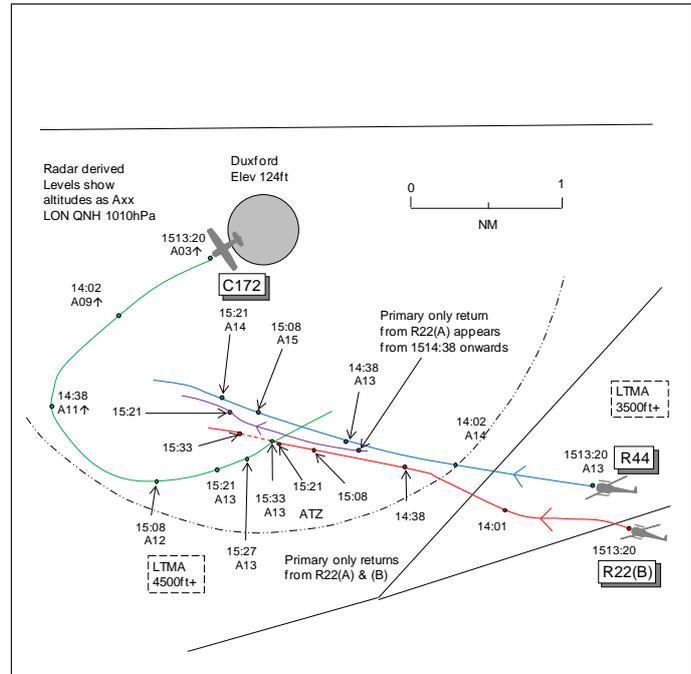
Visibility: >10km >10km

Reported Separation:

200ft V/0.3m H	R44 1km H
	R22(A) 1km H
	R22(B) Not seen

Recorded Separation:

<0.2nm H



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE C172 PILOT** reports flying a dual training sortie from Duxford, VFR and in communication with Duxford Information on 122.075MHz, squawking with Modes S and C. The visibility was >10km flying 200ft below cloud in VMC and the ac was coloured white/blue with anti-collision beacon on. The training detail was differences training for Variable Pitch (VP) propeller and managing a fuel injection engine during circuit procedures. The flight was conducted inside R112 [Olympic Restricted Airspace] utilising Duxford's exemption/permission. After taking-off from RW24 and whilst on the climb-out to cct altitude the FISO reported, "traffic 3 helicopters S to N approaching from the S towards the windsock". Other information was transmitted which was not clearly heard but the student thought the FISO said, "altitude 400ft". They continued the climb on a track of 240° and levelled out on this track at 1100ft for about 30sec whilst VP propeller procedures were carried out. The ac accelerated to 90kt and they then turned crosswind. The helicopters were not seen from this position which was about 1nm further SW than would be the case had a normal cct been flown i.e. turning crosswind in the climb passing altitude 700-800ft. At this point he thought the helicopters had probably already passed through the downwind track. They turned downwind heading 060° at cct altitude and saw 2 helicopters, which had just crossed the downwind track about 1nm ahead of them at the same altitude or slightly lower. They immediately climbed to about 1300ft, their altitude being restricted by some low cloud in the downwind area; VMC was maintained. They continued to look for the third helicopter which took some little time to acquire and it was sighted close-by, <0.5nm ahead and slightly below crossing from R to L i.e. roughly S to N. The helicopter was moving away from their track and no further avoiding action was needed; the helicopter did not change course or speed. The CPA was estimated as 200ft vertically and about 0.3nm horizontally. If they had not climbed there would have been no vertical separation between their ac and the third helicopter. The information provided by the FISO was very material in preventing a more serious situation. He assessed the risk as 'B' but if they had not seen the third helicopter then a risk rating of 'A' would have been more appropriate. During the 15min before until 5min after the Airprox he had not heard any call from traffic other than a locally-based ac on the ground. He believed the helicopter traffic did not make any call to Duxford.

**THE R44 LEAD HELICOPTER PILOT** reports flying with a student and leading 2 other helicopters enroute to Leicester, VFR and in receipt of a BS from Atlas Control on 118.275MHz, squawking an assigned code with Modes S and C. The visibility was 10km flying >500ft below cloud in VMC and the ac was coloured black/gold with landing and anti-collision lights switched on. Having cleared Stansted CTR they transferred back to Atlas Control for a few minutes before he requested to change frequency to speak to Duxford to transit through the Duxford O/H. Atlas replied, "negative" and said they would call ahead and to cross through and stay on their frequency with their squawk. Transiting through the Duxford ATZ the first R22 was in their 7 o'clock at <0.5km and the second R22 was their 8 o'clock range at approximately 1km. Heading NW'ly at 1400ft QNH and 90kt a Cessna was first observed head to head 2nm away at about the same level before it then moved R towards the R22's in formation and clearing to their port from their 12 o'clock to 9 o'clock position by an adequate distance (1000m). He assessed the risk as none. Previously he had asked the other helicopter pilots to put on their landing lights for higher visibility in formation. Once the Cessna was seen he contacted Atlas and asked if they knew it was there, in the ATZ, and the controller replied that he had spoken to Duxford and there shouldn't be any traffic. The controller said he would contact Duxford again but no sooner had that happened they were clear of R112 and they were cleared to leave the Atlas frequency.

**THE SECOND HELICOPTER [R22(A)] PILOT** reports flying solo, in formation with the R44 transiting through the Duxford ATZ and listening out with Atlas Control; Mode A was switched off at Atlas Control's request. He saw a Cessna flying head to head at 1 o'clock range 2nm at about the same level which moved from R to L and it then cleared to his port about 1km away. He assessed the risk as low. Atlas Control had informed the formation that they had contacted Duxford and there was no known traffic to effect.

**THE THIRD HELICOPTER [R22(B)] PILOT** reports following the R44 and R22(A) in formation and listening out with Atlas Control; Mode A was switched off. He heard the R44 pilot report sighting traffic in the Duxford ATZ but did not see the ac himself.

**ATSI** reports that the Airprox occurred at 1515:21UTC 1.2nm S of Duxford Aerodrome, within the Olympic Restricted Airspace Area EG R112, and inside the Duxford ATZ. The Duxford ATZ comprises a circle radius 2nm, centred on the midpoint of RW06/24 and extending to a height of 2000ft above aerodrome level (elevation 125ft).

The C172 flight was operating VFR from Duxford in the LH visual cct for RW24 and in receipt of a BS from the Duxford FISO. The pilot reports operating within R112 in accordance with the Duxford permission conditions.

The formation of 3 helicopters comprised 2xR22 and an R44, which were operating VFR on a flight from a private site near Manston en-route to Leicester Airport. The formation were in receipt of a BS from ATLAS Control on frequency 119.375MHz.

EG R112 was promulgated as being active from 2300 UTC on 13<sup>th</sup> July 2012 until 2300 UTC on 15<sup>th</sup> August 2012. Flights from, into or within R112 were prohibited, except for those specified ac adhering to the operating regulations. The ANO regulations applied. EG R112 was designed to create a 'known traffic environment' and for security reasons ATLAS Control was required to retain communication with ac under their control.

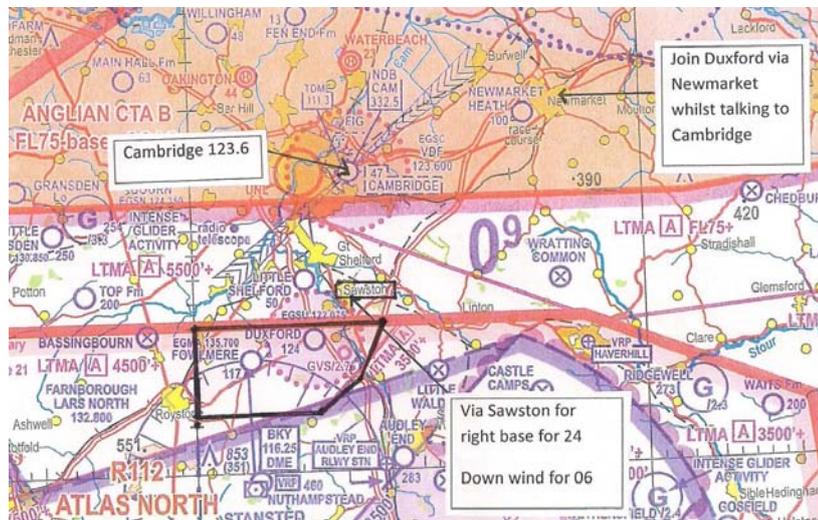
Duxford provided the follow guidance for visiting pilots:

'The airfield lies just inside the northern boundary of the restricted zone R112. Permission has been granted for aircraft and pilots to fly from and to IWM Duxford through a small defined part of R112 as described below (the "Permission"). This is suitable for flights from and to airfields outside R112.

Pilots wishing to transit R112 (other than the small part covered by Duxford airfield's permission) must arrive and depart using the flight planning system and Atlas Control, as widely promulgated elsewhere.

### Permission to Fly Within Restricted Zone R112 Duxford Airfield.

The Permission covers flight inside, entry to and exit from the area shown edged in black in the diagram below.'



The Duxford ATSU indicated that in addition to their published operational telephone number, which appeared in Olympic guidance material, Duxford had provided ATLAS control with an 'out of hours' (office and mobile) contact telephone number, which was added by ATLAS to their direct dial system. On 11<sup>th</sup> July 2012, 2 days before the introduction of R112, Duxford ATSU had provided by email, an unpublished operational telephone (hotline), which afforded priority access to the duty FISO. It was not clear if this was received by ATLAS control prior to the commencement of EG R112.

CAA ATSI had access to area radar recording, written reports from the C172 pilot and the 3 helicopter pilots, together with a written report from the ATSU. Although not a requirement, Duxford normally record their RT but on this occasion, there was a technical fault and no RT recording was available.

The Stansted METAR was provided:  
EGSS 181450Z 22015KT 9999 BKN014 OVC020 18/15 Q1010= and EGSS 181520Z 22014KT 9999 SCT012 BKN017CB 19/16 Q1010=

At 1451:00, the helicopter formation was 18nm SE of Stansted in receipt of a BS from ATLAS Control, squawking 1515.

At 1500:40, the formation was transferred to LTC Essex Radar for transit through the Stansted CTR and the squawk changed to 0201.

At 1510:20, the formation was transferred back to ATLAS Control as they crossed the N boundary of the Stansted CTR, 6.5nm SE of Duxford. Radar showed that the formation had retained the Stansted squawk 0201.

The formation, on contacting ATLAS, requested a QSY to Duxford in order to transit their O/H. ATLAS Control agreed to telephone Duxford on behalf of the formation and contacted Duxford using the 'out of hours' number, instead of the operational number for the control tower. The Duxford representative acknowledged the details and responded that this was, "OK alright." The flight details were then relayed to the duty FISO. However, unknown to the ATLAS controller, the representative

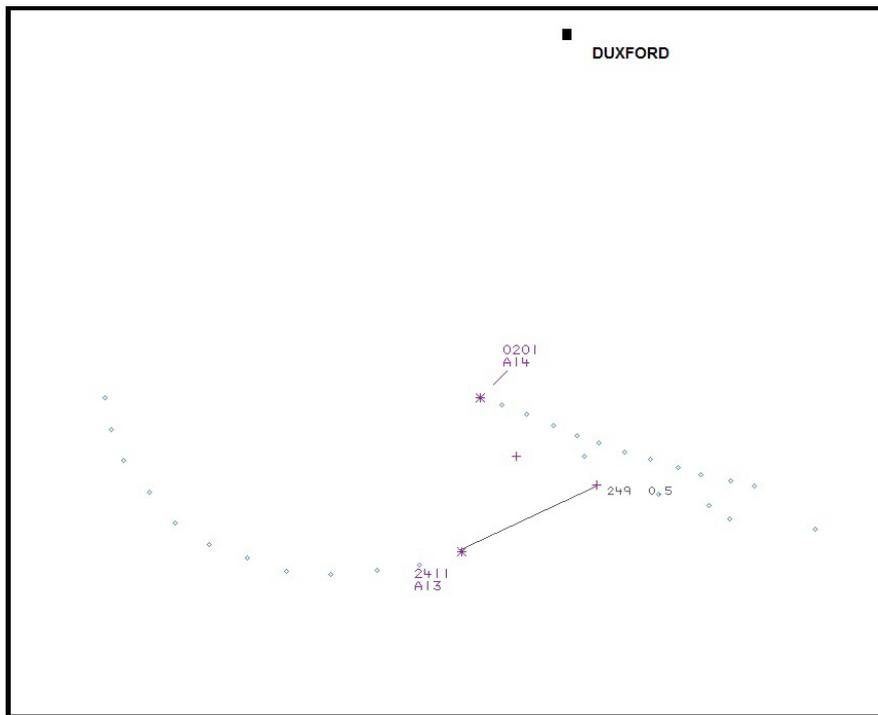
was not in a position to properly communicate relevant information regarding activity within the cct and ATZ.

At 1514:02, the radar shows the C172 airborne from Duxford RW24, passing 900ft and commencing a L turn into the cct. The formation leader [R44] is entering the ATZ from the SE at 1300ft, with a single helicopter [R22(B)] shown in trail as a primary only contact.

At 1515 the ATSU reported that the helicopters were sighted 1.5nm SE of the airfield estimated to be at 1600ft. TI was passed to the C172. The FISO made blind calls to the helicopters without receiving a response. The FISO was unable to contact ATLAS Control on their dedicated telephone line.

At 1515:08, the C172 turned downwind at altitude 1200ft; the pilot's written report indicated that he acquired 2 helicopters visually and looked for the third.

At 1515:21, the radar recording shows the primary contact of the third helicopter [R22(B)] crossing the C172 from R to L at a range of 0.5nm as shown in radar print 1 below. The pilot reported sighting the third helicopter slightly below.



Radar print 1 - 1515:21

The ATSU reported that when ATLAS Control were subsequently contacted, they had indicated that they were not responsible for monitoring the position of aircraft on a BS and that such ac should have contacted Duxford for a crossing clearance.

Immediately after this incident, Duxford ATSU instructed FISO staff not to approve a crossing of the ATZ below 2000ft.

As a result of this incident, the CAA recognised that in the event of transit ac having to cross an embedded ATZ and remaining on the ATLAS frequency, pilots would not be able to comply with RoA Rule 45. In addition FISOs are not able to approve or refuse a crossing of the ATZ. This had not previously been identified as an issue. CAA AATSD therefore sought to reach agreement for a refinement to the ATLAS crossing procedures. As a result it was agreed that pilots should be encouraged to use these airfields as reporting points, but ac would be routed around the ATZ. Duxford ATSU reported that there were no further occurrences or similar incidents.

As the formation approached Duxford, the ATLAS controller kept the ac on his frequency and contacted Duxford in order to advise them of the crossing traffic. Unfortunately, ATLAS Control contacted Duxford using the 'out of hours' telephone number for an airport representative, rather than using the direct FISO operational telephone number. This resulted in a misunderstanding and the full implication of the circumstances of the situation was not fully appreciated by either ATLAS or Duxford.

Duxford ATSU reported that their operational telephone number was promulgated and also appeared in Olympic airspace guidance. Duxford had also provided details of an unpublished telephone number in order to give a higher priority to operational calls. Unfortunately this was notified only 2 days before the start of EG R112 and was not fully implemented for some time after the occurrence. It was not clear why ATLAS control used the 'out of hours' telephone number instead of the promulgated operational line, but was most likely due to a misunderstanding or administrative error. The security arrangements for flights within EG R112, required ATLAS controllers to retain ac on their frequency. The implications of allowing a transit ac across an embedded ATZ had not been fully appreciated in the planning stage. This resulted in a situation when pilots were unable to comply with RoA Rule 45 (4) and (6), which state:

'If the aerodrome has a flight information service unit the commander shall obtain information from the flight information service unit to enable the flight to be conducted safely within the zone.'

'The commander of an aircraft flying within the aerodrome traffic zone of an aerodrome shall:

- (a) cause a continuous watch to be maintained on the appropriate radio frequency notified for communications at the aerodrome; or
- (b) if this is not possible, cause a watch to be kept for such instructions as may be issued by visual means; and
- (c) if the aircraft is fitted with means of communication by radio with the ground, communicate his position and height to the air traffic control unit, the flight information service unit or the air/ground communication service at the aerodrome (as the case may be) on entering the zone and immediately prior to leaving it.

It is very likely that had ATLAS communicated directly with the duty FISO, on the operational or additional priority number, it would have become apparent that the Duxford cct was active and that the helicopters should either have called Duxford AFIS or routed around the ATZ.

The Airprox occurred when, due to an oversight in the planning phase of EG R112, the significance of allowing ac to transit through embedded ATZs, without allowing the commander to properly obtain information in accordance with Rule 45, was not fully recognised. This resulted in the helicopters being retained on the ATLAS Control frequency whilst they crossed the Duxford ATZ and active circuit pattern.

The following factors were considered to have been contributory:

The incident occurred 5 days after the commencement of the Olympic airspace EG R112 operations and coordination between ATLAS and Duxford had not been fully tested operationally.

The ATLAS controller believed that he had used the correct telephone number to contact Duxford and that the Duxford representative had properly agreed for the transit of the ATZ.

The direct dial operational number used by ATLAS to contact the duty FISO at Duxford had been incorrectly programmed. This caused a misunderstanding and neither side fully recognised the implication of the developing situation.

Subsequent procedures were refined to ensure that transit ac were routed around embedded ATZs.

**BM SAFETY MANAGEMENT** reports this Airprox occurred between a C172 operating VFR within the visual cct at Duxford and a mixed formation of 1 R44 (lead ac) and 2 R22s operating VFR in 'loose' echelon port, in receipt of a BS from ATLAS Control TAC 1.

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

The investigation of this incident highlighted a number of ATM and aircrew related issues; however, this report will focus solely on the RAF ATM aspects, with ATSI investigating the civil issues.

Duxford were operating on RW24 with unlimited visibility in nil Wx and SCT cloud at 1800ft. TAC 1 reported their workload as medium to low with 5 ac (3 speaking units) on frequency and low task difficulty.

The incident sequence commenced at 1510:26 as the R44 pilot made initial contact with TAC 1 and was, "*identified 1300 feet London Q-N-H 1-0-1-0, Basic Service.*" This was read back by the R44 pilot who added, "*quick question, Q-S-Y to Duxford 1-2-2-0-7-5 just to let them know we're going through their overhead?*" TAC 1 replied, "*(Formation c/s) I'll give them a bell for you.*" At this point, the R44 was 6.1nm SE of Duxford, tracking NW'ly, indicating 1300ft. A PSR-only contact is visible on the radar replay throughout the incident sequence, 0.5nm in trail to the R44 and this is believed to be the second R22 [R22(B)]; the PSR-only contact that is believed to be the first R22 [R22(A)] disappears from radar at 1512:26 and had been 0.2nm in trail to the R44. The C172 was 0.8nm NE of Duxford, tracking SW'ly, descending through 200ft.

At 1511:29, Duxford answered a landline call from TAC 1 saying, "*Good afternoon, [Christian name and surname of person answering]*". TAC 1 continued, "*I've got an A-T-Z crosser, south-east to north-west, through your overhead at 1400 on the London Q-N-H 1-0-1-0.*" The individual at Duxford replied, "*okay, are they not going to call us?*" TAC 1 stated, "*I can send them to you if you wanna work them*" to which the individual at Duxford replied, "*no that's fine, so three helicopters at 1400 feet*" which was confirmed by TAC 1. The individual at Duxford then asked, "*due with me what time?*" to which TAC 1 replied, "*they're currently 2 miles south, well south-east of the overhead.*" The landline conversation was terminated at 1512:05. At this point, the R44 was 4.6nm SE Duxford, tracking N'ly, indicating 1400ft; the C172 was not displayed on radar, having faded at 1511:34.

Rules of the Air Regulations 2007, Rule 45 para 4 states:-

'If the aerodrome has a flight information service unit the (aircraft) commander shall obtain information from the flight information service unit to enable the flight to be conducted safely within the zone'.

Para 6a states:-

'The commander of an aircraft flying within the aerodrome traffic zone of an aerodrome shall cause a continuous watch to be maintained on the appropriate radio frequency notified for communications at the aerodrome and... if the aircraft is fitted with means of communication by radio with the ground, communicate his position and height to the...flight information service unit...at the aerodrome on entering the zone and immediately prior to leaving it'.

MAA RA 3009, supported by MMATM Chapter 9 Para 13 states that during console-to-console communication, the 'console number or control position' should be stated at the start of any landline liaison. MAA RA 3010 (1), supported by MMATM Chapter 10 Para 1 states that Traffic Information is passed between ATS personnel; Para 6 states that 'Coordination is defined as the act of negotiation between two or more parties each vested with the authority to make executive decisions appropriate to the task being discharged'.

Subsequent investigation has determined that TAC 1 made the landline call to Duxford via a 'Direct Access' button that had been programmed with a number provided by Duxford. However, the phone

attached to this extension number at Duxford was located in a 'management and administration' office, not within the VCR. Based upon the report of the C172 pilot, the Duxford FISO advised them of "3 helicopters, south to north, approaching from the south towards the windsock". The pilot also acknowledged that other information related to these helicopters was transmitted by the FISO but 'was not clearly heard' with their student believing that the FISO had said "altitude about 400ft". It is reasonable to argue that this broadcast made by the FISO was as a result of the information passed by TAC 1, through the 3<sup>rd</sup> party individual at Duxford who answered the landline call.

Following the landline conversation, at 1512:10, TAC 1 informed the R44 pilot that the formation could, "*route via the Duxford overhead at 1400 feet*" which was acknowledged. There were no further transmissions on TAC 1's freq until 1515:20. It has not been possible to determine what other activities TAC 1 may have undertaken during this time. Nor has it been possible to determine where the other ac on their frequency were operating or what type of ATS they were operating under, in order to determine whether an opportunity existed for them to pass a traffic warning to the mixed R44/R22 formation. However, in accordance with CAP 774, the pilots of the formation were wholly responsible for avoiding the C172 and TAC 1 was not 'required to monitor the flight'.

[UKAB Note (1): The Debden radar recording at 1513:20, shows the C172 re-appearing on radar 0.6nm SW of Duxford, climbing through altitude 300ft QNH 1010hPa; the R44 was 2.8nm SE of Duxford, tracking NW'ly, indicating 1300ft. At 1514:02, the R44 enters the Duxford ATZ, SE of the airfield, tracking WNW'ly, indicating 1400ft; the C172 was 2.4nm WNW of the R44, tracking SW'ly, climbing through 900ft. By 1514:38, the C172 can be observed commencing a L turn cross-wind, climbing through 1100ft; the R44 is 2nm E, tracking WNW'ly, indicating 1300ft with what is believed to be the trailing R22 [R22(B)] visible on radar 0.5nm ESE of the R44. At 1515:21, the C172 can be observed to have steadied on the downwind leg indicating 1300ft, 0.6nm SW of the R44 (indicating 1400ft) and 0.5nm SW of the R22(B) before it fades from radar.]

At 1515:20, the R44 pilot informed TAC 1 that, "*we're level with a Cessna in the circuit at Duxford.*"

[UKAB Note (2): The CPA occurs between radar sweeps as the R22(B) is next seen at 1415:33, having crossed ahead of the C172, in its 8 o'clock range 0.2nm. It is estimated that CPA is at about 1415:27, with R22(B) in the C172's 11 o'clock range <0.2nm.]

The pilots of R44 and the R22 operating in the centre of the formation, R22(A), reported visually acquiring the C172 at a range of approximately 2nms; the pilot of the trailing R22 [R22(B)] did not visually acquire the C172. The C172 pilot reported visually acquiring the R44 and first R22 [R22(A)] at a range of approximately 1nm and the second R22 [R22(B)] at approximately 0.3nm, which would equate to around 1515:24.

The investigation of this incident has highlighted a number of opportunities where the incident chain could have been broken. Points worthy of note relating to the aircrew aspects of the incident are the C172 pilot's uncertainty over the information passed to them by the FISO, his subsequent turn downwind into conflict and the fulfilment of the Rule 45 responsibilities placed upon the commanders of the mixed R44/R22 formation; albeit that it is reasonable to argue that the formation leader may have felt that TAC 1 had fulfilled this requirement for them by liaising with Duxford. Focussing specifically on the RAF ATM aspects of this Airprox, there are 2 issues that require examination; the acceptance by TAC 1 of the identity of the individual answering their landline call at Duxford and their understanding of the requirements of Rule 45.

Whilst the references are taken slightly out of context, the implied understanding contained within MMATM Chapter 9 Para 13 and Chapter 10 Paras 1 and 6 are that controllers must be able to determine that the person to whom they are conversing are in a recognised 'control' position and have the authority to be able to agree a course of action. In this instance, TAC 1 appears to have assumed that the individual at Duxford who answered the landline had the authority to agree a course of action because they answered the landline. That said, based upon the content and conduct of that conversation, it is reasonable to argue that TAC 1 would have been reassured that the individual at Duxford was knowledgeable and empowered to agree a course of action. Moreover,

at no stage did that individual attempt to point out to TAC 1 that he was not authorised to conduct the liaison. Finally, it has not been possible to determine TAC 1's prior experience during Op OLYMPIC of dealing with minor aerodromes that operate with FISOs, to determine whether they had been conditioned into accepting a less formal type of liaison. However, the outcome from the conversation is clear; TAC 1 believed that Duxford had cleared the mixed R44/R22 formation through their ATZ and were content for the formation to remain on TAC 1's frequency. It has not been possible to determine how a non-operational phone number at Duxford was matched to the ATLAS Control DA button and was not detected during the Op OLYMPIC work-up and testing phase.

Subsequent investigation has determined that the ATLAS training package did not stipulate that different liaison and agreements were required dependent upon whether an aerodrome had an ATC unit or a FISO unit. Furthermore, whilst training for military ATCOs covers the provisions of Rule 45, it simplifies it by not discriminating between units with ATC or FISO units, stressing that the ATZ cannot be entered without the express permission of the controlling authority. On that basis, it is not reasonable to expect TAC 1 to have understood the specifics of liaising with a FISO unit operating within an ATZ at an aerodrome. Moreover, the training and experience that TAC 1 will have received prior to operating at ATLAS Control would have mirrored the conduct of the liaison call made to Duxford, thereby reinforcing their expectation that their course of action was correct.

During the investigation of this Airprox event a specific focal point was the wording of Rules of the Air Regulations 2007, Rule 45, specifically Paras 4 and 6a. The wording of Para 6a is explicit in stating the requirement for ac commanders to maintain a watch on the FIS unit frequency; however, the wording of Para 4 could be open to interpretation, as it does not specify where ac commanders should obtain information from. In this instance, it could be argued that the ac commanders may have considered that TAC 1 had fulfilled the responsibility for them by liaising with Duxford.

This is a stereotypical example of an incident where a series of unrelated events breached existing safety barriers and conspired to cause an Airprox. BM SM contends that, whilst there were a number of opportunities for individuals involved in the final incident sequence to have broken the chain and prevented the Airprox, the root cause was the pairing of a non-operational number to the Duxford DA line at ATLAS.

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

Information available included reports from the pilots of all ac, radar video recordings, reports from the ATSU involved and reports from the appropriate ATC authorities.

Although there were several procedural errors highlighted by both ATSI and BM Safety Management leading up to the Airprox, Members agreed with the ATSI viewpoint that there was a systemic issue which had caused the Airprox. It was due to an oversight in the planning phase of the Olympic airspace restricted area R112 that the significance of allowing ac to transit embedded ATZs without allowing pilots to obtain information in accordance with Rule 45 was not assimilated. ATLAS TAC 1 had attempted to coordinate the helicopter formation through the ATZ with a representative at Duxford who was not in a position to communicate relevant information on the cct and ATZ activity. It was unfortunate that the ATLAS Direct Access telephone had been programmed to ring the Duxford out-of-hours telephone number; however, TAC 1 did not challenge the Duxford representative's authority before continuing with his 'coordination' dialogue and the Duxford representative did not point out his non-operational status. That said, the information given by TAC 1 was passed onto the FISO who relayed it to the C172 flight; however, TAC1 was not made aware the cct was active. Therefore the R44 pilot was unaware of the C172's presence and believed that the formation was clear through the Duxford ATZ when told to route through the O/H at 1400ft. This resulted in the R44 formation transiting the Duxford ATZ through the cct pattern and into conflict with the C172 which caused the Airprox. Members commended the prompt actions taken by CAA after this Airprox to refine the ATLAS procedures.

Although the C172 pilot did not assimilate the formation's altitude, he climbed after sighting 2 of the helicopters crossing 1nm ahead through the downwind leg, well clear, whilst attempting to visually acquire the third, R22(B). Eventually he saw R22(B) <0.5nm ahead crossing from R to L about 200ft below and diverging, with no need for further action, estimating 300m separation at the CPA. The R44 pilot was undoubtedly surprised to see the C172 and made comment to TAC 1 although from his and the R22(A) pilot's perspective, the C172 was always going to pass safely clear of their 2 helicopters, estimating 1000m separation. Although the R22(B) pilot heard the R44 pilot's remark about the C172 to TAC 1, he did not see the ac converging from his L. Military pilot Members thought that the R44 pilot should have informed R22(B) pilot flying in trail of the C172's relative position as flight leaders are expected to ensure all members of the formation acknowledge TI on potential threats/conflicting traffic. Whether inter-formation RT communication calls were briefed beforehand or the R44 pilot thought the C172 was flying far enough away from all of the helicopters elements was not known. However, given the combination of the uncoordinated actions taken by all parties involved and the geometry revealed by the recorded radar, the Board were able to conclude that any risk of collision had been effectively removed.

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

Cause: A conflict in the Duxford ATZ caused by an inappropriate procedure during the Olympic period.

Degree of Risk: C.