

AIRPROX REPORT No 2013043

Date/Time: 29 May 2013 1237Z

Position: 5135N 00133W
(9nm E Swindon)

Airspace: Lon FIR (Class: G)

Reporting Ac Reported Ac

Type: A109(A) A109(B)

Operator: HQ Air (Ops) Civ Comm

Alt/FL: 3000ft 3000ft
QNH (1006hPa) NK (1006hPa)

Weather: IMC KLWD IMC CLBL

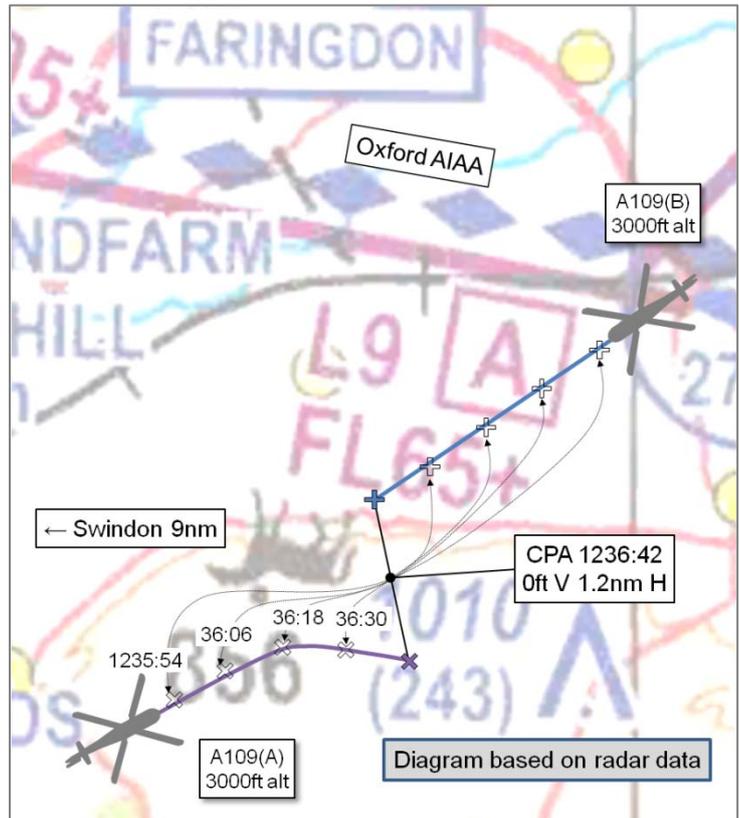
Visibility: In Cloud 5nm

Reported Separation:

< 1nm (TAS) Not Seen

Recorded Separation:

0ft V/1.2nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE A109(A) PILOT reports transiting from the Bristol area to Northolt. He was operating under IFR in IMC in cloud with a TS from Brize RAD (LARS) [124.270MHz]. The white ac had external lights selected on, as was the SSR transponder with Modes A, C and S. The ac was fitted with a TAS. The Brize RAD was requested to give radar vectors for an ILS recovery. Whilst on track to Princes Risborough, TI was passed on 'popup' traffic at the same level and on a reciprocal track. As the TI was given the TAS also indicated an ac in the reported position. He turned on to E 10sec later, away from the conflict. The TAS then gave a 'TRAFFIC TRAFFIC' warning and highlighted the confliction on the display. About 10sec later the conflicting traffic indicated passing down the L side of the ac and behind. The conflicting traffic was not seen. He reported the Airprox to Brize RAD on R/T, he thought.

He assessed the risk of collision as 'High'.

[UKAB Note(1): The Brize RAD (LARS) transcript is reproduced below:

From	To	Speech Transcription	Time
A109(A)	LARS	Brize radar good afternoon [A109(A) C/S] climbing two-thousand three-hundred one-zero-zero-six for three-thousand looking for traffic service	12:21:12
LARS	A109(A)	[A109(A) C/S] er Brize radar identified	12:21:33
A109(A)	LARS	[A109(A) C/S]	12:21:40
A109(A)	LARS	Brize [A109(A) C/S] just reaching three-thousand looking for traffic service	12:21:53
LARS	A109(A)	[A109(A) C/S] Brize roger identified	12:22:06

A109(A)	LARS	Brize [A109(A) C/S]	12:22:19
	LARS	A109(A) [A109(A) C/S] standby	12:22:21
	LARS	A109(A) [A109(A) C/S] traffic service	12:23:03
A109(A)	LARS	[A109(A) C/S] ah roger confirm that is traffic service at three-thousand feet one-zero-zero-six we'll be looking for vectors to the ILS into Northolt please we're currently heading zero-eight-five	12:23:07
	LARS	A109(A) [A109(A) C/S] roger request your number of persons on board	12:23:19
A109(A)	LARS	Two POB [A109(A) C/S] sorry	12:23:21
	LARS	A109(A) [A109(A) C/S]	12:23:25
[Various RT from Brize and other callsigns]			
	LARS	A109(A) [A109(A) C/S] do you require to transit the Benson MATZ	12:30:46
A109(A)	LARS	[A109(A) C/S] affirm	12:30:48
	LARS	A109(A) [A109(A) C/S] roger	12:30:51
A109(A)	LARS	Brize [A109(A) C/S]	12:31:14
	LARS	A109(A) [A109(A) C/S] pass your message	12:31:18
A109(A)	LARS	I don't know if you copied the first part of my last message I'm after vectors for the ILS at Northolt I'm currently tracking towards the Compton ?????	12:31:20
	LARS	A109(A) [A109(A) C/S] do you require our erm my vectors inbound to Northolt	12:31:34
A109(A)	LARS	Yours initially I hope you'll hand me over in due course	12:31:39
[Other C/S RT]			
	LARS	A109(A) [A109(A) C/S] turn right heading zero-six-zero degrees	12:32:33
A109(A)	LARS	Right zero-six-zero degrees [A109(A) C/S]	12:32:36
	LARS	A109(A) [A109(A) C/S] traffic eleven-o'clock eight-miles crossing left-to-right indicating similar altitude	12:34:55
A109(A)	LARS	[A109(A) C/S] that's copied	12:35:01
	LARS	A109(A) [A109(A) C/S] previously called traffic twelve-o'clock four-miles opposite direction same altitude	12:35:47
A109(A)	LARS	[A109(A) C/S] that's copied	12:35:52
A109(A)	LARS	[A109(A) C/S] turning right please	12:36:07

LARS	A109(A)	[A109(A) C/S] roger report with heading	12:36:12
A109(A)	LARS	[A109(A) C/S] steady zero-eight-zero	12:36:19
LARS	A109(A)	[A109(A) C/S] roger traffic two-o'clock six-miles crossing right-to-left indicating eight-hundred feet above	12:36:24
A109(A)	LARS	[A109(A) C/S] copied	12:36:33
LARS	A109(A)	[A109(A) C/S] previously called traffic passing behind	12:36:39
A109(A)	LARS	[A109(A) C/S] that's copied	12:36:43
A109(A)	LARS	Brize [A109(A) C/S]	12:36:49
LARS	A109(A)	[A109(A) C/S] ????	12:36:51
A109(A)	LARS	Sir we were previously on one of your vectors erm ????	12:36:53
LARS	A109(A)	[A109(A) C/S] say again	12:36:58
A109(A)	LARS	Yeah we were on one of your vectors and you gave us that information was there a collision risk had we not moved	12:37:01
LARS	A109(A)	[A109(A) C/S] ???? you were on a heading for Princes Risborough	12:37:09
A109(A)	LARS	???? that was probably a less than average service there sir	12:37:18
LARS	A109(A)	[A109(A) C/S] roger previously called traffic one-o'clock five-miles crossing right-to-left indicating nine-hundred feet above	12:37:21
A109(A)	LARS	Roger to make it crystal clean sir can we now upgrade to deconfliction service please	12:37:30
LARS	A109(A)	[A109(A) C/S] roger deconfliction service avoiding action turn right heading one-four-zero degrees traffic twelve-o'clock four-miles crossing right-to-left indicating nine-hundred feet above	12:37:32
A109(A)	LARS	Right one-four-zero [A109(A) C/S]	12:37:43
A109(B)	LARS	Brize helicopter [A109(B) C/S]	12:37:57
LARS	A109(B)	[A109(B) C/S] Brize	12:37:59
A109(B)	LARS	[A109(B) C/S] Augusta one-oh-nine helicopter out of Duxford en route to Liskeard in Cornwall ten-miles south of you and er heading two-four-zero requesting basic service at three-thousand feet	12:38:00
LARS	A109(B)	[A109(B) C/S] squawk three-seven-one-seven basic service	12:38:19
A109(B)	LARS	Three-seven-one-seven basic service	12:38:23
A109(A)	LARS	Brize [A109(A) C/S]	12:38:26

LARS	A109(A)	[A109(A) C/S] Brize	12:38:28
A109(A)	LARS	Is that [A109(B) C/S] same altitude as me is he india-mike or victor-mike	12:38:30
LARS	A109(A)	Victor-mike	12:38:35
A109(A)	LARS	Amazing [A109(A) C/S]	12:38:39
LARS	A109(A)	[A109(A) C/S] turn left heading zero-seven-zero degrees previously called traffic ... <i>unreadable</i>	12:38:42
LARS	A109(A)	[A109(A) C/S] do you copy my last	12:38:58
A109(A)	LARS	Affirm Sir apologies rolling out zero-seven-zero	12:39:01
LARS	A109(A)	[A109(A) C/S] squawk three-six-zero-two	12:39:46
A109(A)	LARS	Three-six-zero-two	12:40:16
LARS	A109(A)	[A109(A) C/S] contact Benson one-two-zero-decimal-nine	12:40:22
A109(A)	LARS	One-two-zero-decimal-nine Sir before I go can I have an extension to ring you on when I get when I land	12:40:27
LARS	A109(A)	Affirm its extension [number] at Brize	12:40:30
A109(A)	LARS	[number] speak to you later bye-bye	12:40:34

THE A109(B) PILOT reports transiting from Duxford to Liskeard. He was operating under IFR in IMC, 200ft above cloud, initially with a BS from Farnborough LARS(N) [132.800MHz]. The ac had anti-collision lights selected on, as was the SSR transponder with Modes A, C and S. The ac was not fitted with an ACAS. He had climbed to 3000ft to remain below Luton CAS, putting him above cloud and between cloud layers. He free-called Benson Zone [120.900Mhz] and when W of the A/D was requested to free-call Brize RAD [124.275MHz]; no mention had been made of any conflicting traffic. He mistakenly selected 124.750Mhz and had a brief conversation with London Information before selecting the correct frequency. On contact with Brize RAD he heard an extended conversation between the RAD and another C/S. Consequently, some minutes passed before he could establish 2-way RT. The Brize RAD did not mention an Airprox, which he was informed of after he had landed.

THE BRIZE RAD reports that he was the LARS controller working [A109(A) C/S] from Bristol to Northolt; the weather was overcast and the ac was under a TS. 10nm W of Benson and iaw the conditions of a TS, traffic to the N and S was called to [A109(A) C/S], both 'wearing 7000 squawks'. After calling the ac to the N a further two times, [A109(A) C/S] requested a DS and an avoid was given to the SE. Moments later, [A109(B)] called him and requested a BS and transit to the SW. [A109(A) C/S] pilot asked if the ac that was at the same altitude as him was VMC or IMC and was stunned to hear he was in VMC.

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

THE BRIZE SUPERVISOR reports that he was providing a break to the Duty SUP. The unit workload was low and the controller fulfilled his obligations under a TS by calling the other traffic twice to [A109(A) C/S]. The [A109(A) C/S] pilot did not make the controller aware that he was flying in IMC.

BM SAFETY POLICY AND ASSURANCE reports that this Airprox occurred at 1236:38 on 29 May 13, between A109(A) and A109(B). At the time of the Airprox, A109(A) was operating under IFR in receipt of a TS from Brize RAD and had requested radar vectors en-route to Northolt. A109(B) was operating IFR and was not in receipt of an ATS at the time of the Airprox, contacting Brize RAD 1min and 19secs after the CPA.

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

Brize RAD reported that his workload was low and task complexity 'light' at the time of the Airprox and was providing ATS to one ac in addition to A109(A). The pilot of A109(A) described the flight conditions as IMC in cloud.

The incident sequence commenced at 1232:33 as Brize RAD instructed A109(A) pilot to, "turn right heading 0-6-0 degrees" in response to his request for vectors inbound to Northolt. The A109(A) pilot acknowledged the turn instruction. At this point, A109(B) was 20.7nm NE of A109(A). Figure 1 reflects the incident geometry at this point; SSR3A 3714 was A109(A), SSR3A 7000 was A109(B).

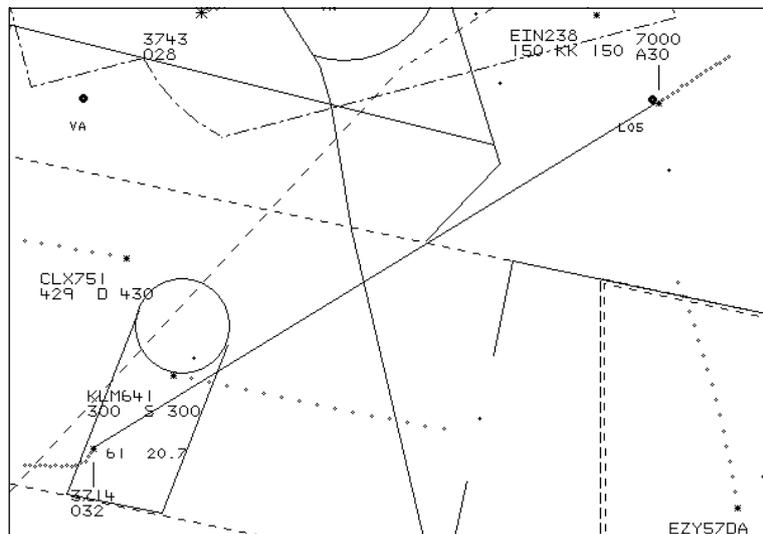


Figure 1: Incident Geometry at 1232:33

At 1234:55, Brize RAD provided A109(A) pilot with TI on A109(B), describing A109(B) as "traffic 11 o'clock, 8 miles, crossing left-to-right, indicating similar altitude" which was acknowledged. As can be seen at Figure 2, the TI was partially inaccurate in that the motion of A109(B) relative to A109(A) was 'opposite direction'.

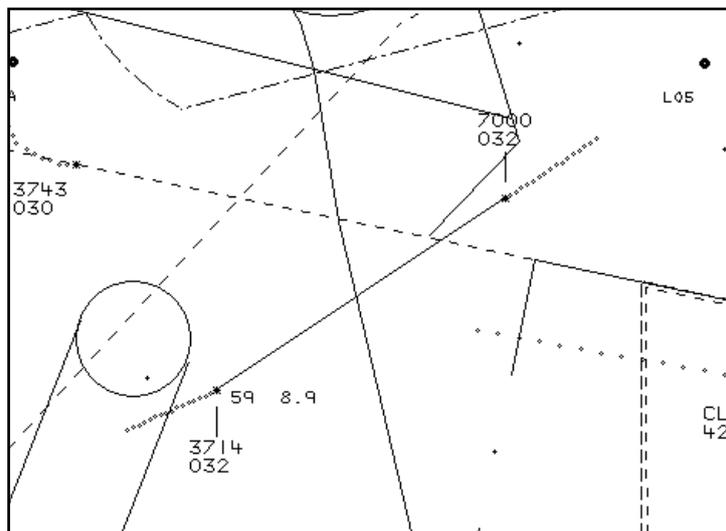


Figure 2: Incident Geometry at 1234:55

At 1235:47, Brize RAD accurately updated this TI advising A109(A) “*previously called traffic, 12 o'clock, 4 miles, opposite direction, same altitude*” which was again acknowledged. Based upon the A109(A) pilot’s report, this TI was co-incident with the receipt of a warning from his TAS which correlated with the reported position of A109(B). At 1236:07, the A109(A) pilot requested, “*turning right please*” which was acknowledged by Brize RAD, advising A109(A) pilot to “*report steady with heading*”. Figure 3 depicts the incident geometry at 1236:07.

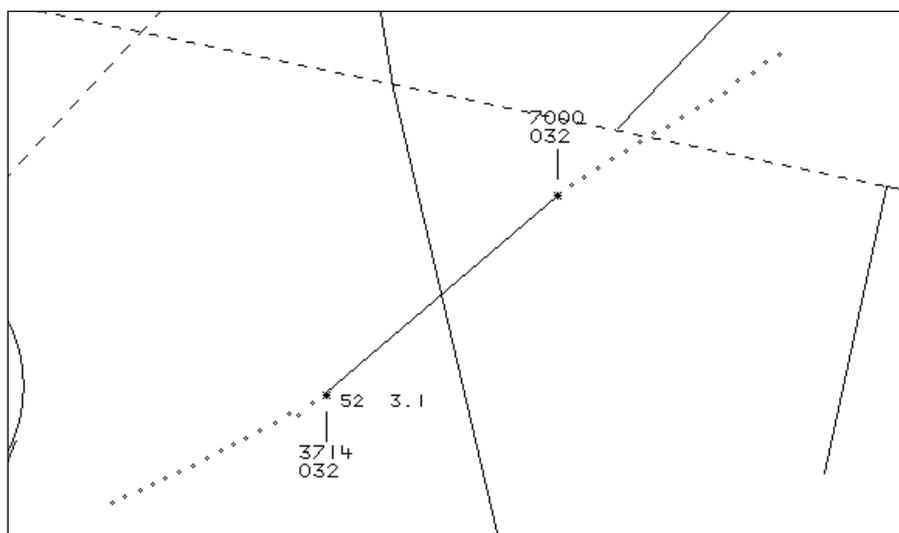


Figure 3: Incident Geometry at 1236:07

At 1236:19, the A109(A) pilot advised Brize RAD that he was, “*steady 0-8-0*” which was acknowledged by Brize RAD who then passed accurate TI on unrelated traffic, which was acknowledged. The CPA occurred at 1236:38 as A109(B) passed 1.2nm N of A109(A) indicating co-altitude; Figure 4 depicts the incident geometry at CPA. At 1236:39, Brize RAD advised A109(A) pilot that the A109(B) was, “*passing behind.*”

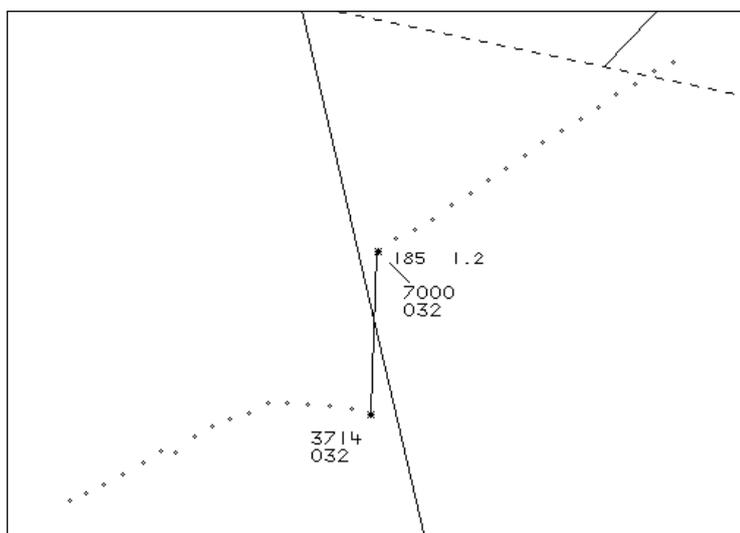


Figure 4: Incident Geometry at 1236:38

Albeit that the initial TI provided by Brize RAD was partially inaccurate, overall, they provided TI in accordance with the provisions of CAP 774, which, alongside TAS information, enabled the A109(A) pilot to discharge his responsibility to avoid traffic within Class G airspace in a timely manner. Given that the turn by A109(A) onto 080° resolved the conflict, Brize RAD was not required to provide a further update to the TI; however, they did advise the pilot when he was clear of conflict.

A further point of interest in assessing this Airprox is the comment made by the A109(A) pilot to Brize RAD following the CPA, questioning whether Brize RAD had introduced the conflict by issuing a heading of 060° at 1232:33. Whilst, with hindsight, it can be seen that this turn did introduce the conflict, the CPA occurred 4min and 5sec after the turn was issued. The guidance material at CAP 774 Chapter 3 Para 6 states:

‘When providing headings/levels for the purpose of positioning and/or sequencing or as navigational assistance, the controller should take into account traffic in the immediate vicinity, so that a risk of collision is not knowingly introduced by the instructions passed’.

Whilst CAP 774 does not define ‘immediate vicinity’, BM SPA contends that this is situational, based upon the relative speeds of the ac involved. The issuance of a vector by ATC within Class G airspace does not guarantee that that heading may be maintained indefinitely without a risk of conflict, given the dynamic environment that exists in Class G airspace. In this instance, the A109(A) pilot was wrong to suggest that Brize RAD was culpable in introducing the conflict and it was disappointing that the issue was addressed by the pilot on an ‘in-use’ ATC frequency. [This adds further evidence to the RAF FS and BM SPA belief that some aircrews do not understand the line between ATC’s responsibility to not knowingly introduce a risk of collision and their own responsibility to avoid collisions when in receipt of vectors from ATC. Moreover, this Airprox adds weight to the recommendation made by RAF FS to 22 (Trg) Gp to examine aircrew ATSOCAS trg.]

[UKAB Note(2): The UK Military AIP ENR 1-7-1, dated 13 Mar 08 states at Section 2 (Altimeter Setting Procedures), paragraph 2.4 (Outside Controlled Airspace):

‘At or below 3000ft. AMSL, pilots may use any desired setting. However, when flying in airspace below TCAs and CTAs, pilots should use the QNH of an adjacent aerodrome when flying below the Transition Altitude. It may be assumed that for aerodromes located beneath such Areas, the differences in the QNH values are insignificant. When flying beneath Airways whose base levels are expressed as Altitudes pilots are recommended to use the QNH of an adjacent aerodrome in order to avoid penetrating the base of Controlled Airspace.’

Section 3 (Quadrantal and Semicircular Rules), paragraph 3.1 (Below FL245 outside CAS and within active TRAs 001-008) states:

‘An aircraft in level flight under IFR, between 3000ft AMSL and FL195 or between FL195-FL245 within an active TRA, is to be flown at a level appropriate to its magnetic track in accordance with the Quadrantal detailed below. When flying above 3000ft AMSL under VFR, pilots are recommended also to fly at such flight levels whenever possible, in the interests of flight safety.

a. Below FL195 or below FL245 within active TRA.

MAGNETIC TRACK	CRUISING LEVEL (Expressed as flight levels)
000°-089°	Odd thousands of feet
090°-179°	Odd thousands of feet + 500ft
180°-269°	Even thousands of feet
270°-359°	Even thousands of feet + 500ft

The UK AIP ENR 1.3 (Instrument Flight Rules), Section 3 (Rules applicable to IFR flights outside Controlled Airspace), under ‘Cruising Levels’, paragraph 3.1.1 states:

‘An IFR flight operating in level cruising flight outside of controlled airspace shall be flown at a cruising level appropriate to its track as specified in the Tables of cruising levels at ENR 1.7 paragraph 6.1 (b).’

ENR 1.7 (Altimeter Setting Procedures), paragraph 6.1 (b) states:

'IFR Flights Outside Controlled Airspace above 3000ft amsl or above the appropriate transition altitude, whichever is the higher.

IFR Flights at levels below 19500 ft.	
Magnetic track°	Cruising level
Less than 090°	Odd thousands of ft
090° but less than 180°	Odd thousands plus 500 ft
180° but less than 270°	Even thousands of ft
270° but less than 360°	Even thousands plus 500 ft

ENR 1.7 Section 5 (Detailed Procedures), paragraph 5.2.2 (En-route, Outside Controlled Airspace and within Active TRAs) states:

'In flight at or below 3000 ft amsl, pilots may use any desired setting. However, pilots flying beneath a TMA or CTA should obtain the QNH from an aerodrome situated beneath that area when flying below the Transition Altitude. It may be assumed that for aerodromes beneath the same TMA or CTA, the differences in the QNH values are insignificant. ...'

The Manual of Military Air Traffic Management (MMATM), Chapter 4 (Division of Airspace and Rules of the Air), paragraph 42 states:

'Within the UK, IFR are as follows:

- a. Outside CAS. Above 3000 ft amsl, pilots should select cruising levels according to the quadrantal or semi-circular rule as applicable, based on the standard altimeter setting 1013.2 hPa, unless they are flying in conformity with instructions from ATC, HM Ships or an ASACS Unit. ...'

Under 'Selection of Cruising Levels', paragraph 57 states:

'Below FL195 outside CAS & within active TRAs between FL195-245. Within the UK, an aircraft in level flight under IFR between 3000 ft AMSL and FL195 outside CAS, or within an active TRA between FL195-245, should be flown at a level appropriate to its magnetic track in accordance with the Quadrantal Rule ...'

Chapter 10 (Traffic Information and Traffic Coordination), under 'Coordination Outside Controlled Airspace', paragraph 15 states:

'Considerations for Traffic Receiving a Service Outside Controlled Airspace. Instructions issued by controllers to pilots of aircraft operating outside controlled airspace are not mandatory; however, the services rely upon pilot compliance with the specified terms and conditions so as to promote a safer operating environment for all airspace users. ...'

Paragraph 18 states:

'Traffic Service. Unless safety is likely to be compromised, a pilot receiving a Traffic Service should not change level, route, manoeuvring area, or deviate from an ATC heading without first advising and obtaining a response from the controller. ...'

Chapter 11 (Types of Service and Separation Standards), under 'Traffic Service', paragraph 6 states:

'The definition and scope of Traffic Service is detailed within CAP 774. ...'

CAP774, Chapter 3 (Traffic Service), paragraph 1 (Definition) states:

'A Traffic Service is a surveillance based ATS, where in addition to the provisions of a Basic Service, the controller provides specific surveillance-derived traffic information to assist the pilot in avoiding other traffic. Controllers may provide headings and/or levels for the purposes of positioning and/or sequencing; however, the controller is not required to achieve deconfliction minima, and the avoidance of other traffic is ultimately the pilot's responsibility.'

The Rules of the Air, Section 6 (Instrument Flight Rules), Rule 34 (Quadrantal and Semi-circular Rule) states:

'..., an aircraft in level flight above 3,000 feet above mean sea level or above the appropriate transition altitude, whichever is the higher, shall be flown at a level appropriate to its magnetic track, in accordance with Table 1 [Quadrantal Levels] or Table 2 [Semi-circular Levels], as appropriate.'

]

HQ AIR (OPS) commented that the pilot of A109(A) discharged his responsibility under a TS to take his own separation from other traffic. The pilot believed that a DS would not have been practicable but there was no other traffic to affect in this case. An Occurrence Safety Investigation was undertaken at the behest of HQ 2 Gp and has reported to the Stn Cdr. This attributed the non-standard RT from the pilot to his 'frightening experience'. There was clearly an expectation that headings assigned by ATC would not permit a conflict to develop irrespective of the ATS provided. Whilst some controllers might adjust headings to avoid conflicts (without attempting to achieve any specific minima) there is no specific consideration of this point within CAP774. Hence, pilots must assume that they will always have to take their own avoiding action under a TS unless avoiding action is requested. This point will be emphasised in upcoming RAF FS publicity. Whilst there is some sympathy for the pilot regarding his 'frightening experience' and the quandary presented when following ATC assigned headings and needing to avoid traffic, the RAF cannot condone the RT used during this incident.

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.

Members first considered the actions of the Brize RAD. It was unanimously agreed that he had provided the service that was requested and, after consideration of the transcript, Members commended him for maintaining an entirely professional service. Board Members and advisors agreed that the A109(A) pilot's comments made over the RT could be distracting to a controller providing ATSS to other airspace users.

Pilot Members opined that the A109(A) pilot appeared to have misunderstood the provisions and limitations of a TS. The CAA SRG Safety Standards Advisor stated that CAP774 was currently being examined in order to identify clarifications to facilitate better understanding of ATSOCAS. Pilot Members agreed that the A109 (A) pilot would have been better served in IMC with a DS but were aware of anecdotal evidence suggesting that pilots are unwilling to request a DS because of a perception that it is frequently not available and, in any case, is often incompatible with reasonable rates of track progression. In the event, Brize RAD would have been able to provide a DS and traffic in the area was of sufficiently low density that a DS would not have compromised the transit. Although the A109(A) pilot had a reasonable expectation that ATC would not vector him in to conflict, his apparent expectation that ATC would provide navigational vectors for a conflict free transit to his destination was not reasonable. The Board was satisfied that Brize RAD had not vectored A109(A) into conflict given the time that elapsed between the turn and the CPA (4min 5sec).

Turning to the A109(B), the Board noted that its pilot requested a BS while flying IMC when a TS or DS would appear to have been more appropriate.

In assessing the Cause and Risk, the Board was satisfied that the ATC barriers were effective in ensuring the A109(A) pilot had good SA; ultimately he responded correctly to the TI and his TAS information, taking effective action to remove any risk of a collision. Overall therefore, the safety barriers were effective resulting in an ERC score of 10.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in IMC resolved by the A109(A) pilot.

Degree of Risk: C.

ERC Score: 10.