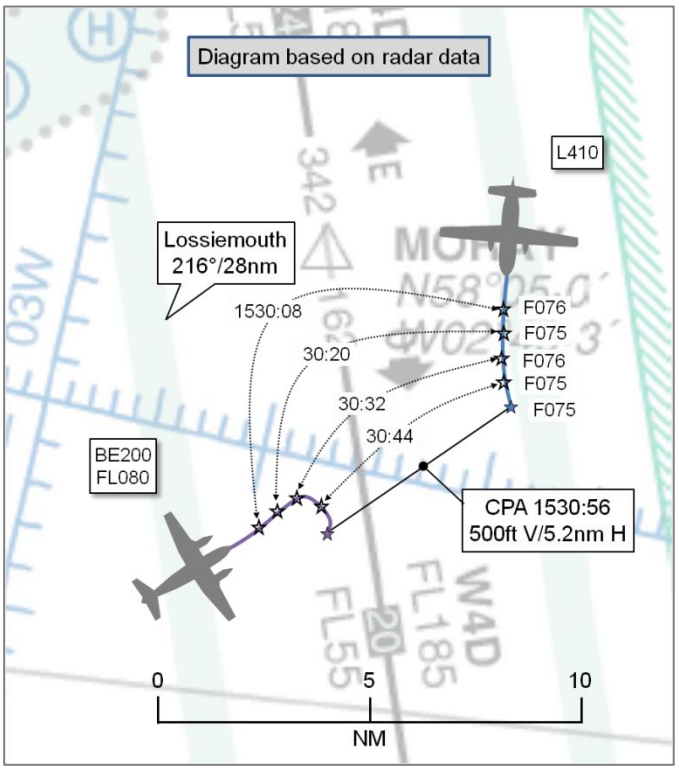
AIRPROX REPORT No 2014067

Date/Time: 28 May 2014 1530Z

Position: 5801N 00242W (15nm NNW SMOKI)

Airspace: Scottish FIR ADR W4D (*Class*: G/F)

	Aircraft 1	*Aircraft 2*
Type:	L410	BE200
Operator:	Civ Comm	HQ Air (Trg)
Alt/FL:	FL75	FL70
Conditions:	VMC	VMC
Visibility:	NK	15km
Reported Separation:	500ft V/<3nm H	500ft V/5nm H
Recorded Separation:	400ft V/5.2nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE L410 PILOT did not report his lighting state; SSR Modes C and S were selected. He reported that he was under IFR, in VMC, 15-20nm NNW of reporting point SMOKI at FL75 when he received Traffic Information regarding un-coordinated traffic, 2 o'clock, at FL70. He acknowledged the traffic and observed it on his TCAS display at approximately 5nm. Seconds later he received a 10° left turn from a track of about 190° (heading 170° to 160°) from Scottish Control. Traffic was now at 3nm, indicating FL70, in his 3 o'clock. He saw it coming towards his aircraft and reported it to Scottish Control. At the same time he received a turn onto heading 090° from the controller. The other aircraft was making a right turn away from his flight-path. He resumed a track inbound to SMOKI and was transferred to Aberdeen Radar.

He assessed the risk of collision as 'Medium'.

THE BE200 PILOT reports that he was operating a VFR training flight. Strobes, navigation and beacon lights were illuminated; SSR Modes C and S were selected; the aircraft was equipped with TCAS. He was conducting a General Handling (GH) sortie with a student and, at the time, he was practising steep turns before setting up for a stall. He was in receipt of a Traffic Service throughout from RAF Lossiemouth, and the aircraft that he believed had filed the Airprox was called to him by the controller. He was not visual so he turned 180° away although, as he recalled, he was never closer than 5nm so, in his opinion, there was never any danger of a collision. He also recalled that there was 500ft vertical separation. The practice stall was not commenced until he was pointing 180° away from the aircraft in question with at least 10nm horizontal separation. He had his TCAS in TA/RA mode. He could not recall receiving a TA alert but he was sure he did not receive an RA. At no time did he ever feel the safety of either aircraft was compromised.

He assessed the risk of collision as 'Low'.

THE PRESTWICK CENTRE (PC) MORAY PLANNER (P) CONTROLLER reports that he was called to 'plug-in' as the Moray P controller by the radar controller as the sector was getting quite busy. He was on the telephone dealing with a number of releases and clearances when his radar colleague pointed out the L410 in conflict with a Lossiemouth squawk, just north of SMOKI. He telephoned Lossiemouth ATC and requested co-ordination with the L410 against their squawk. He identified the L410 to the Lossiemouth controller and asked if his traffic was continuing on its present track. The

Lossiemouth controller said he would ask its pilot if he could turn; he heard the controller transmit to the pilot of his aircraft asking if he could turn because there was traffic. The Lossiemouth controller then came back and told him that the pilot was turning right. He said that he would get his Radar controller to turn the L410 left onto about heading 120°. Accordingly, he then told the Radar controller to instruct the L410 pilot to turn left. To be extra safe the Radar controller turned him left onto 090°. Once the two aircraft were clear of each other, the Radar controller instructed the L410 pilot to resume his own navigation again to SMOKI to hold (as Aberdeen were busy). He telephoned the Lossiemouth controller again to inform him that the L410 would be holding at SMOKI at FL75 and asked if his aircraft was staying to the west. The Lossiemouth controller said he would ask if the pilot could remain 5nm clear. Subsequently, Aberdeen ATC said that the L410 pilot did not need to hold at SMOKI, therefore he was cleared direct to ADN. He telephoned Lossiemouth to inform them that the L410 pilot was no longer going to hold and that there was no longer a problem. The pilot of the L410 was transferred to Aberdeen radar without further incident.

THE PC MORAY SECTOR TACTICAL (T) CONTROLLER reports that the L410 pilot was inbound to Aberdeen cruising at FL75 on a direct track to SMOKI, in receipt of a Deconfliction Service. At approximately 1515 the Aberdeen controller telephoned to point out an unverified 3737 squawk [the subject BE200] operating west of W4D at FL80 which was potential traffic to the L410. The 'highlight' function was used to emphasize this traffic, which had since turned away from the L410. A few minutes later he saw that the 3737 squawk had turned back towards the L410. At this point Traffic Information was passed and the P controller called Lossiemouth to agree a course of action. During this time the traffic got closer but on its present track it would have passed behind the L410. Traffic Information was updated and a left turn of 10° was issued; however, it was apparent that this was not a sufficient turn for an aircraft so slow, so a turn onto heading 090° was given. Meanwhile the pilot of the other traffic turned right which decreased the distance between the two aircraft but, because it was a sharp right turn, it meant that after a few seconds the aircraft was tracking away from the L410. The pilot of the L410 was then given his own navigation to SMOKI. The pilot reported that it was a 'bit close for comfort' and he would be filing an Airprox report.

THE RAF LOSSIEMOUTH ATC SUPERVISOR reports that he has reviewed all reports and as both the duty Supervisor at the time of this event and the ATC Flight Safety Officer, he believed that the Lossiemouth Controller provided the BE200 pilot with appropriate Traffic Information on the Advisory Route traffic, first calling the traffic at 15nm and then providing updates. Neither he nor the controller had any specific recollection of the events in question, most probably because the Traffic Information was passed in a timely fashion, and the crew of the BE200 took measures to ensure safety was not compromised. He has not had access to any radar replay for the event, so could not comment on what separation existed between the aircraft beyond noting that the landline conversation between the Lossiemouth and Moray controllers contains inconsistencies regarding the distance between the aircraft, with the Lossiemouth controller stating the distance at the time of the call as 7nm and the Moray controller saying 3nm.

Factual Background

The Aberdeen weather was recorded as follows:

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METAR EGPD 281520Z 08008KT 050V120 9000 FEW011 BKN014 17/10 Q1022 NOSIG=
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CAP 774, UK Flight Information Services states:

> 'A Deconfliction Service is a surveillance based ATS where, in addition to the provisions of a Basic Service, the controller provides specific surveillance-derived traffic information and issues headings and/or levels aimed at achieving planned deconfliction minima, or for positioning and/or sequencing. However, the avoidance of other traffic is ultimately the pilot's responsibility.' [1]

[1] Chapter 4.

'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.' [2]

Analysis and Investigation

CAA ATSI

The Airprox occurred 15nm NNW of reporting point SMOKI. The L410 pilot, under the control of the PC Moray sector, was at FL075 routeing under his own navigation direct to SMOKI, in receipt of a Deconfliction Service. The BE200 pilot was in receipt of a Traffic Service from RAF Lossiemouth.

At 1528:20, when the distance between the two aircraft was 14nm, Lossiemouth contacted the Moray sector and confirmed that the BE200 would be turning away.

At 1529:43 the Moray controller passed Traffic Information regarding traffic in the L410 pilot's 2 o'clock at a range of 5nm, at FL080 unverified [Radar recording at short range showed the distance as 10.3nm]. The controller instructed the L410 pilot to turn left onto radar heading 160°.

At 1530:36 the controller updated the Traffic Information reporting that the other traffic was in the L410 pilot's 3 o'clock at 3nm. (Radar recording showed distance as 5.9nm). The BE200 pilot then commenced a right turn and at 1530:44 the distance between the two aircraft was 5.5nm.

At 1530:46 the controller instructed the L410 pilot to turn left onto radar heading 090°. The CPA occurred at 1530:52 when the minimum horizontal distance was recorded as 5.2nm and the vertical distance as 400ft (Figure 1).

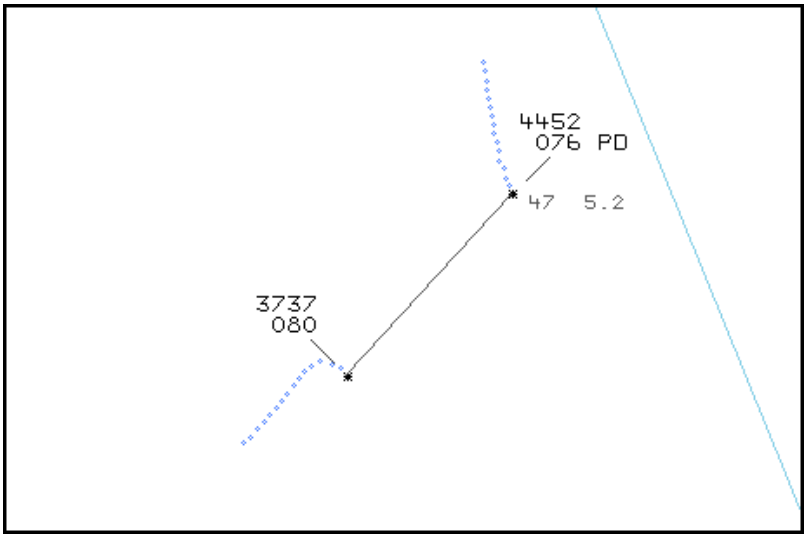

Figure 1 – Prestwick MRT at 1530:52

The Moray controller was providing a Deconfliction Service (DS) and had an expectation that the BE200 pilot would be turning away. The deconfliction minima against un-coordinated traffic under a DS is 5nm laterally and/or 3000ft vertically.

The Moray controller passed Traffic Information to the L410 pilot and then gave an initial heading adjustment followed by a further left onto 090° (although the term 'avoiding action' was not used). The range setting of the controller's situational display was such that the distance between the two

[2] Chapter 3.

aircraft was likely perceived by the controller to be less than that recorded by the radar. The distance between the two aircraft was never less than the deconfliction minima.

Military ATM

Lossiemouth ATC were not aware of the Airprox at the time, and the controller could not recall the specific details of the incident. There is recollection of Traffic Information being called and the BE200 pilot being co-operative in Class G airspace. The Supervisor had no concerns following the incident and described the unit and controller workload as 'low'. Furthermore, the Supervisor placed the perceived severity of the incident as 'negligible'.

At 1524:58, Lossiemouth Approach confirmed the GH block of FL60-FL80 with the BE200 pilot.

At 1528:17 the first Traffic Information concerning the L410 was passed "[BE200 C/S] *traffic left 10 o'clock, 13 miles, converging, indicating FL75*." Figure 1 outlines the aircraft geometry as the information was passed. The BE200 pilot replied "*traffic not seen*."

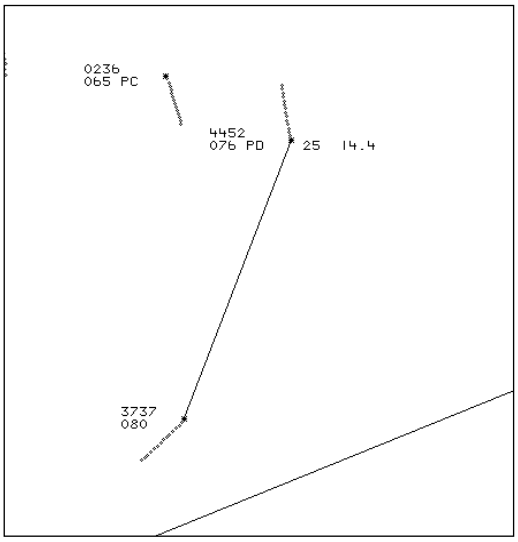

Figure 1: Traffic Information at 1528:17 (BE200 3737, L410 4452).

The controller provided an update at 1528:31 (Figure 2) "*as you manoeuvre, northeast 15 miles tracking southeast FL75 tracking east of the advisory route*."

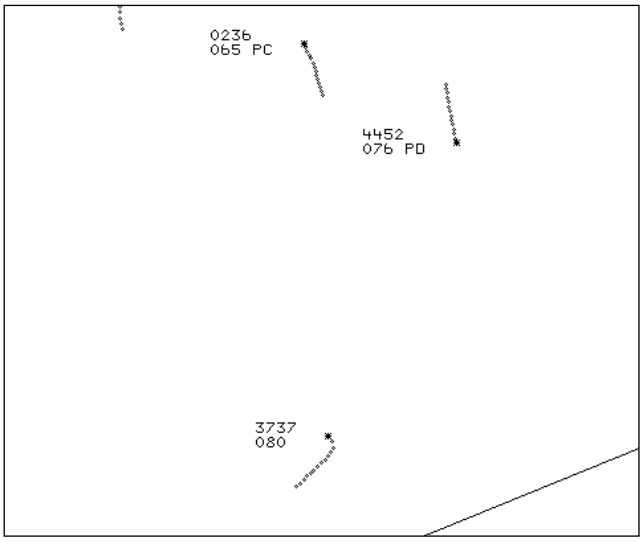

Figure 2: Traffic update at 1528:31.

At 1529:57, a landline call initiated by the Moray sector requested coordination on the 3737 squawk. The aircraft geometry at the time (Figure 3) shows 9.1nm horizontal separation.

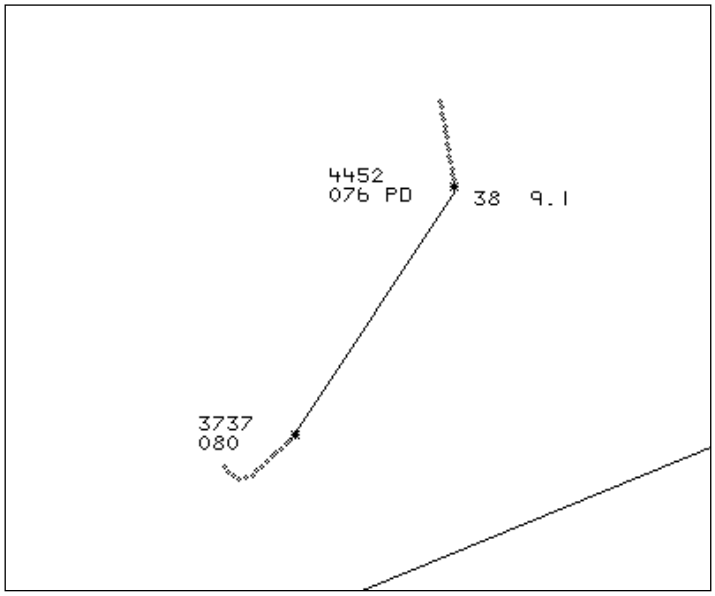

Figure 3: Aircraft geometry at 1529:57.

Lossiemouth confirmed that BE200 pilot was manoeuvring between FL60 and FL80 (L410 in level flight at FL75) and, at 1530:06, the Moray controller asked if the BE200 was going to carry on track or turn. At 1530:12 (Figure 4), the Lossiemouth controller requested, "[BE200 C/S] *are you maintaining that track or are you able to turn, previously called traffic now north east 7 miles, south east bound FL75?*" The BE200 pilot responded immediately "*we'll turn right this time*."

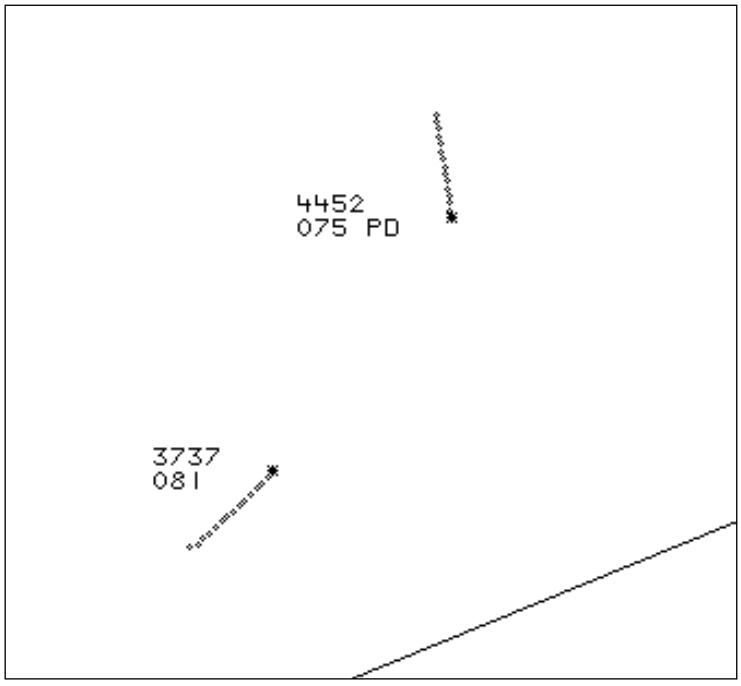

Figure 4: Aircraft geometry at 1530:12.

The Lossiemouth controller confirmed that the BE200 pilot was commencing the right hand turn and, at 1530:24 (Figure 5), the Moray controller confirmed, "*we're gonna go left with the [company designator]. There's the traffic in his 12 o'clock, at em, what's he about 3 miles, we're gonna go left onto a heading of about 120."*

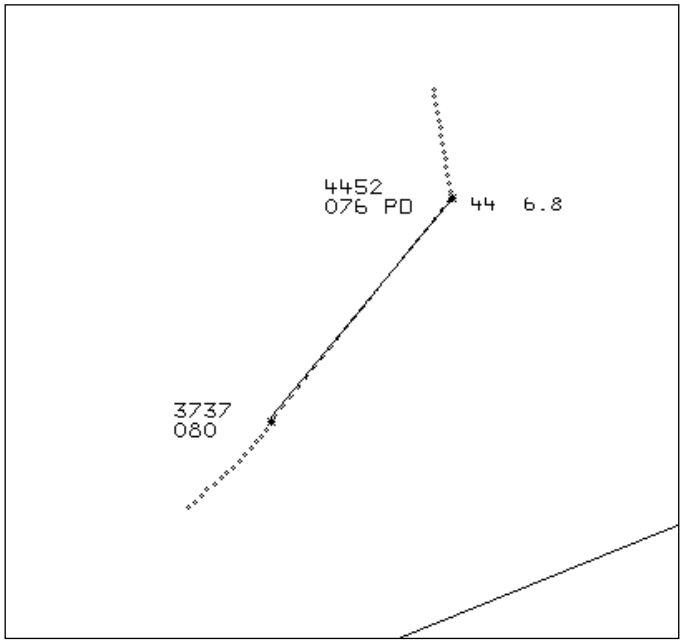

Figure 5: Aircraft geometry at 1530:24.

The conversation between Lossiemouth and Moray was terminated. The CPA was timed at 1530:52 (Figure 6) with the BE200 at FL80 and the L410 at FL76, lateral separation was 5.2nm.

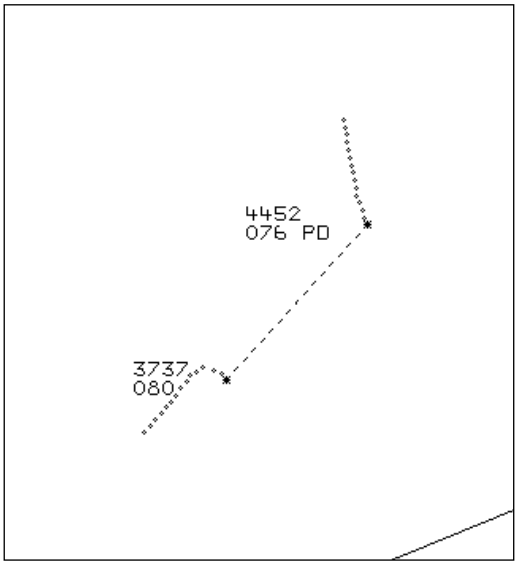

Figure 6: CPA at 1530:52.

Traffic Information was passed by both controllers and this alerted crews to the other aircraft. TCAS was fitted to both and the L410 TCAS detected the BE200 at an estimated range of 5nm. The lookout also worked for the L410 pilot to aid visual acquisition of the BE200. Because the BE200 pilot had initiated a right hand turn onto a reciprocal heading, it was flying away from the CPA and prevented the crew from becoming visual.

The Lossiemouth controller passed accurate and updated Traffic Information and liaised with Moray to ask the BE200 pilot to route away from the L410 pilot's path. The BE200 crew were co-operative despite curtailing a training exercise in Class G airspace. From the radar replay, standard separation does not appear to have been eroded and the Lossiemouth controller and the BE200 pilot did not view this as an incident that compromised safety. The 3nm separation mentioned by Moray and the L410 pilot does not correspond with the radar replay. The Moray controller called Lossiemouth at 1529:56, which was a minute prior to CPA, with 9nm separation.

Comments

HQ Air Command

This appears to be a relatively benign event, although one where the PC Moray controller's assessment of distance generated some concern for the L410 pilot. Overall, the stipulated deconfliction minima were not compromised.

UKAB Secretariat

At the time of the CPA, the BE200 was 0.9nm W of the centre-line of Advisory Route W4D (Class F) and the L410 was 4nm to its E. The UK AIP[3] states:

> 'Advisory Routes have no declared width but for the purposes of ATS provision are deemed to be 5nm either side of a straight line joining each two consecutive points.'

The vertical dimensions of W4D in the vicinity of the Airprox was FL55/FL185.

Both pilots had equal responsibility for collision avoidance and not to fly into such proximity as to cause a danger of collision[4]. The L410 pilot was required to give way[5].

Summary

The Airprox occurred in Class G airspace, albeit within the 'deemed' lateral confines of ADR W4D (Class F airspace), 15nm NNW SMOKI. The L410 pilot, under IFR in VMC, was receiving a Deconfliction Service from the PC Moray Sector. The BE200 pilot, under VFR, was in receipt of a Traffic Service from RAF Lossiemouth. The Moray controller passed Traffic Information to the L410 pilot and then gave an initial heading adjustment followed by a further left turn onto 090°. The range setting of the PC Moray controller's situational display was such that the distance between the two aircraft was likely perceived by the controller to be about half that recorded by the radar, and these truncated distances were called to the L410 pilot. The BE200 pilot received Traffic Information from Lossiemouth but did not observe the L410 visually. CPA occurred at 1530:52 when the two aircraft were recorded as 5.2nm apart horizontally and 400ft vertically; the distance between the two aircraft was never less than the required deconfliction minima of 5nm/3000ft.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from both pilots, transcripts of the relevant RTF frequencies, radar recordings, reports from the controllers concerned and reports from the appropriate ATC and operating authorities.

The Board noted from the very beginning that the L410 pilot was in receipt of a Deconfliction Service from the PC Moray sector and that the recorded separation of 400ft vertically and 5.2nm horizontally was in excess of the required 3000ft vertically and/or 5nm horizontally. The Board therefore wondered why the pilot of the L410 had decided to file an Airprox report at all, and considered that this could be explained by the actions and distance calls of the Moray Tactical controller which may have skewed the L410 pilot's perception of the actual separation.

In exploring this notion, the Board noted from the Moray Tactical controller's report that he noticed the presence of the BE200, with a Lossiemouth squawk, in potential confliction with the L410 and requested the Planner telephone Lossiemouth to arrange a course of action. Although formal coordination did not take place, it was agreed that the BE200 pilot would be requested to turn right away from the L410. The BE200 accepted the request and carried out a right turn away from the L410. The Tactical controller issued Traffic Information to the L410 pilot about the BE200 at a range

[3] ENR 1-1-1-1. ATS Routes-Description
[4] Rules of the Air (2007) (as amended), Rule 8 (Avoiding aerial collisions.
[5] Ibid., Rule 9 (Converging).

of 5nm. However, the radar recording shows that the distance was actually 10.3nm. Further Traffic Information was passed, again with an incorrect reduced range of about half of that which it actually was. Because the controller believed that the two aircraft were closer than they were, he instructed the L410 pilot to turn left from a heading of 160° to 090°. A civil controller member, with experience of PC, stated that sectors can cover ranges up to about 160nm and working at such a large display scale could mean that short distances were not always easy to estimate.

The Board considered that the L410 pilot, having received incorrect Traffic Information ranges and a subsequent 70° turn, was seduced into altering his mental model of the geometry and became concerned himself about the perceived proximity of the BE200. It was considered that a contributory cause to this was therefore that the Moray controller did not pass accurate Traffic Information to the L410 pilot. For his part, the Board commended the actions of the BE200 pilot for his cooperation with ATC agencies whilst conducting VFR GH operations within Class G airspace, and for agreeing to curtail his training detail by making a 180° turn away from the L410 despite the fact that the L410 was technically required to give way to the BE200.

Following a short discussion, it was agreed that normal procedures, safety standards and parameters had been maintained. Consequently, the degree of risk was categorised as E.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The L410 pilot was concerned by the perceived proximity of the BE200.

Contributory Factor: The Moray controller did not pass accurate range information to the L410 pilot.

Degree of Risk: E.

ERC Score[6]: 1

[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.