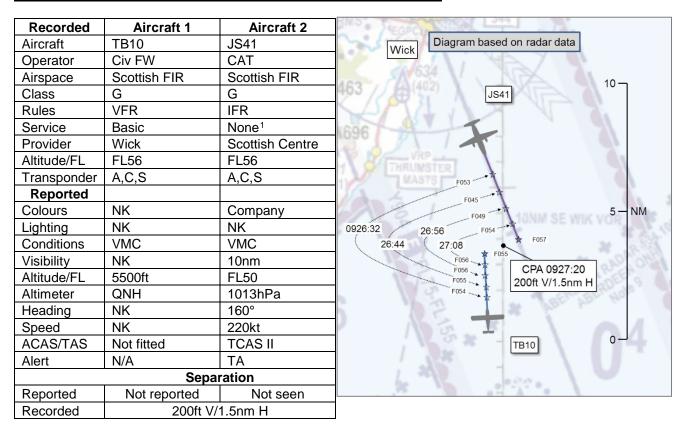
# AIRPROX REPORT No 2018211

Date: 09 Aug 2018 Time: 0927Z Position: 5817N 00260W Location: 10nm SE Wick



# PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE PRESTWICK CENTRE MORAY PLANNER/TACTICAL CONTROLLER** reports that he had recently taken over the sector following a technically complicated handover and traffic scenario; the overflying TB10 had been transferred to Wick. He called Wick to organise a level for an inbound traffic and was told that the departing JS41 would be clean against the TB10. He still had a strip on the TB10 and there was no indication of its flight rules so he continued on the basis that it was under IFR. The JS41 pilot called him passing FL43 climbing to FL90; at the time the TB10 was in his one o'clock at a range of 3nm. Because he had been expecting the aircraft to be separated, he immediately gave Traffic Information to the JS41 pilot as the range decreased. The Short Term Conflict Alert (STCA) started to flash red, and he gave avoiding action to the JS41 pilot. The situation had developed so quickly that he had not yet identified the JS41 or agreed a service. The situation was resolved shortly after the avoiding action.

**THE WICK AERODROME/APPROACH CONTROLLER** reports that an over-flying TB10 came into conflict with a departing JS41 climbing through the TB10's level. The event was highlighted by the Prestwick Moray Sector after the JS41 pilot was transferred to them; the TB10 pilot subsequently reported visual with the JS41.

**THE TB10 PILOT** reports that he did not consider that an Airprox had taken place. The weather was CAVOK at the time and both pilots in the TB10 were listening and watching the aircraft take off. They were at about 5500ft at the time talking to Wick, reporting their position (the last one was at Thumster masts). They thought it unlikely that the JS41 could have climbed to their altitude in such a short space of time. The TB10 pilot provided a flight log of their track at the time (Figure 1).

<sup>&</sup>lt;sup>1</sup> Pilot in the process of contacting ATC. He reported in receipt of a Deconfliction Service but no service had been agreed at the time.



Figure 1. TB10 flight log.

**THE JETSTREAM 41 PILOT** reports being on departure from Wick, held at 4000ft due to inbound traffic. At 6nm southeast of Wick he was cleared to climb to their enroute cruising level of FL090 and transferred to Prestwick Centre. On first contact with Prestwick they were informed of conflicting traffic at 12 o'clock at a range of 8nm. Even with further Traffic Information neither pilot saw the conflicting traffic and they were then given an avoiding action left-turn heading 090°; they were informed by the controller that he would be filing an Airprox report. The opposing traffic, according to the controller, passed 400ft beneath them with little lateral separation. He did not see the TB10.

# Analysis and Investigation

# CAA ATSI

ATSI had access to reports from the pilots of both aircraft and from the Wick and Moray controllers. The area radar and Wick and Moray Low Sector R/T recordings for the period were reviewed. Screenshots in the report are taken from the area radar.

At 0913:50, the TB10 pilot contacted the Moray controller advising that they were on a flight to Kirkwall and were currently south of Wick. A Basic Service was agreed. At 0919:15, the Moray controller asked the TB10 pilot if they would be remaining at their current altitude to transit Wick; the pilot confirmed that they were at 5500ft and would remain at that altitude.

At 0919:35, the Moray controller called the Wick controller and passed details of the TB10 flight, advising that the TB10 would transit 5nm east of Wick at 0930, would be remaining at their current level of FL55, and were currently on a Basic Service. It was agreed that it would be better if the TB10 was transferred to the Wick controller for the transit. At the end of the call the Moray controller advised that they were about to conduct a handover of their position to another controller, and that the incoming controller would call back with a clearance for the departing JS41. The Wick controller advised that the JS41 was lined-up ready for departure. The outgoing Moray controller then issued the Wick controller issued a reminder of the TB10 traffic that they were about to transfer to the Wick controller prior to ending the call. Although ATSI were unable to ascertain the details of the readback by the Wick controller due to an aircraft calling the Moray controller during the readback, Prestwick have since clarified that, using the deskside telephone recording, it is possible to ascertain that the Wick clearance was readback correctly and that Wick added the additional information that **"I anticipate he will be coming to you at 4000 feet but I'll co-ordinate it**".

At 0921:50, the Wick controller issued the following clearance to the JS41 pilot:

# "[JS41 C/S] after departure cleared to SMOKI via Y904, climb FL90, expect a local restriction, squawk 5436, Procedural Service"

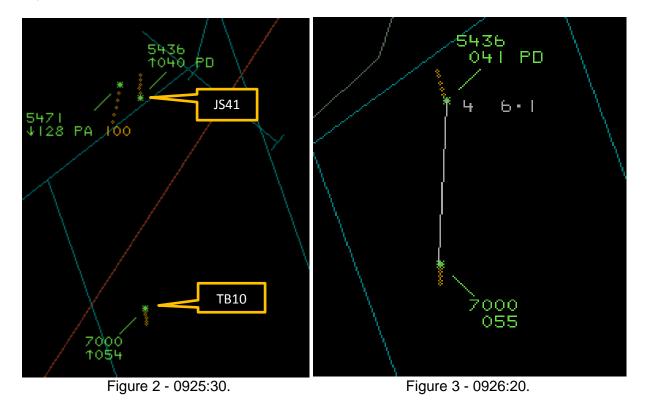
This was readback correctly and the pilot was requested to report ready for departure. The pilot advised that they were ready, and the controller responded with "[JS41 C/S] local restriction, climb to altitude four thousand feet". This was correctly readback by the pilot and the controller cleared the aircraft for take-off RW13 with a right turn after departure. No traffic information was passed on the TB10.

At 0922:48, the Moray controller instructed the TB10 pilot to contact Wick ATC.

At 0923:00, the TB10 pilot called the Wick controller advising that they were inbound to Kirkwall, were 10nm south of Wick at 5500ft, and requested transit through the overhead at Wick. A Basic Service was agreed and the pilot was instructed to report overhead Wick. The pilot readback *"report overhead Wick wilco"*. The controller then changed the instruction to "**report 5** *miles south of Wick"* and passed Traffic Information on the JS41 traffic, advising that it was departing RW13 for Aberdeen, climbing to altitude 4000ft initially. The pilot acknowledged the Traffic Information but did not readback the corrected instruction to report 5nm south of Wick.

At 0924:20, the Wick controller called the Moray controller and asked for the distance to run on an unrelated Wick inbound aircraft; the Moray controller advised that it had 25nm to run. During this call, the Wick controller advised that they would give the Moray controller the JS41, in the climb to FL90 and that it would be clear of the TB10. The Moray controller acknowledged this and agreed to see the pass of the unrelated inbound aircraft against the JS41.

At 0925:30 (Figure 2), the Wick controller asked the TB10 pilot to report their position; the pilot advised that they were 14nm south. The controller acknowledged this and then asked the JS41 pilot to report their position; the JS41 pilot reported as being *"at 4000ft, 5 miles south west...south east"*. The controller then issued the JS41 pilot with an instruction to *"climb now FL90"*, the JS41 pilot readback the climb FL90 instruction and the controller instructed the JS41 pilot to contact the Moray controller.



At 0926:20 (Figure 3), the JS41 pilot made initial contact with the Moray controller and advised that they were climbing FL90, the controller responded by passing Traffic Information at one o'clock, 2nm, a TB10, indicating FL55. The pilot advised that they were looking. The controller immediately updated the Traffic Information to 1 o'clock, 1nm, indicating FL56, the pilot advised that they were still looking. The controller then issued an avoiding action left turn immediately, 090° and advised that the traffic was now half a mile, 3 o'clock.

At 0927:01 (Figure 4), the JS41 pilot acknowledged the avoiding action to Prestwick and, at 0927:10, the TB10 pilot called the Wick controller and advised that they were visual with the traffic; the Wick controller acknowledged this.

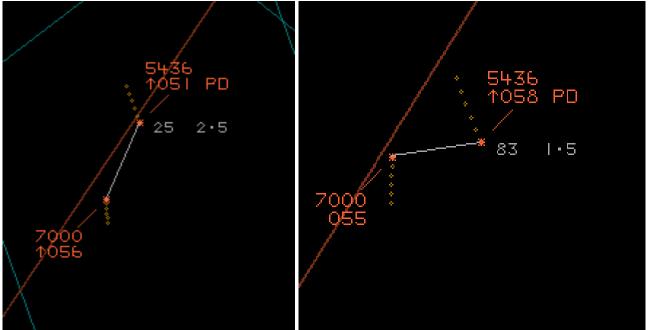


Figure 4 - 0927:01.

Figure 5 - 0927:24 CPA.

At 0927:24 (Figure 5), CPA occurred with the aircraft separated by 1.5nm laterally and 300ft vertically. [Note: Prestwick's ATS investigation, using their radar replay, measured the CPA being slightly before at 0927:20, with 200ft vertically and 1.5nm horizontally.]

At 0928:40, the Moray controller called the Wick controller and queried their agreement that the JS41 would be coming across clean against the TB10. The Wick controller asked if the TB10 had turned and the Moray controller said not that they were aware of. The Moray controller asked for the level of the TB10 and whether he was IFR. The Wick controller said that the TB10 was VFR and that they were on the 180 radial from Wick, which was why they had transferred the JS41 to the Moray controller. The Moray controller advised the Wick controller that the TB10 had been nowhere near the 180 radial.

At 0929:30, the TB10 pilot advised the Wick controller that they were about 5nm south and the controller asked the pilot to say again their position, the pilot confirmed that they were 5nm south. The controller acknowledged this, instructed the pilot to report overhead Wick and requested their level, to which the pilot replied 5000ft.

At 0932:00, the Moray controller asked the JS41 pilot if they had sighted the TB10 and the pilot said that they had the aircraft on TCAS but not sighted. The controller explained that they had since established that the TB10 was VFR but that this was not known at the time the avoiding action was issued. The controller went on to say that they considered that a risk of collision existed, hence the avoiding action and that the controller would be filing a report.

MATS Part 1 Section 1 Chapter 12 Procedural Service states:

#### Definition

Procedural Service is an ATS where, in addition to the provisions of Basic Service, the controller provides restrictions, instructions, and approach clearances, which if complied with, will achieve deconfliction minima against other aircraft participating in the Procedural Service. Neither traffic information nor deconfliction advice can be passed with respect to unknown traffic.

## Flight Rules/Meteorological Conditions

Procedural Service is available to IFR flights in any meteorological conditions. It is not available to VFR flights.

## Traffic Information

The controller shall provide traffic information, if it is considered that a confliction may exist, on other known traffic; however, there is no requirement for deconfliction advice to be passed, and the pilot remains responsible for collision avoidance.

The JS41 pilot was participating in a Procedural Service and the TB10 was participating in a Basic Service. As such, and under CAP 493 requirements alone, deconfliction minima was not required to be achieved. However, Traffic Information was required to be passed to the JS41 pilot on the TB10 and, where it is known by the controller that a definite hazard exists to pilots under a Basic Service, a warning is required to be issued. Traffic information was not passed to the JS41 pilot on departure from Wick and, although the TB10 was provided with Traffic Information on the departing JS41, the level information provided was that the JS41 would be climbing not above 4000ft. This information was not updated by the Wick controller prior to instructing the JS41 pilot to climb to FL90.

In addition, CAP 493, Section 1, Chapter 12, paragraph 5F.8 states that controllers may, subject to workload, initiate agreements with pilots of aircraft under a Basic Service to restrict their flight profile in order to co-ordinate them with aircraft in receipt of a Procedural Service. This procedure appears to have been adopted and agreed within a Letter of Agreement (LOA) between NATS En Route Ltd and Highlands and Islands Airports; the details of which are contained within Annex L of their LOA which is published within the Wick MATS Part 2 and states that the agreed procedures contained within the LOA are to be applied in addition to those applicable in the CAP 493. The following are the relevant extracts from the LOA:

'IFR or VFR arrivals and departures via Class G airspace or VFR utilising N650 or Y904 and requiring an ATS shall be subject to individual coordination. The separation of inbound IFR aircraft from all known or observed conflicting IFR traffic, and the passing of traffic information on any known or observed conflicting VFR traffic shall be carried out in accordance with the principles in Annex L'.

Annex L - Guidance for co-ordination of IFR traffic between non-surveillance Approach Control Units(ACU) and Prestwick Centre (PC)

Note: Wick is the ACU and does not have surveillance equipment available. The Moray Low Sector is one of the Prestwick Centre Sectors and does have surveillance equipment available.

#### **Basic Principles**

1.2 Controllers at approved ATC Units that do not have surveillance equipment available will routinely apply a Procedural Service to aircraft carrying out IFR holding, approach and/or departure procedures.

1.3 Principles and guidance are reliant upon the following expectations:

1.3.1 PC can expect traffic working an ACU to be issued with instructions under Procedural Service, or be under an agreement on Basic Service.

1.4 The ACU shall provide a procedural instruction against 'known traffic' reported by PC, subject to coordination with PC, or traffic information on conflicting traffic 'observed' by PC.

1.5 Either unit may request to work known conflicting traffic.

**Departure Scenarios** 

2.4.2 Clearance to enter CAS is available:

PC shall pass traffic information to the approach unit with a joining clearance. The ACU shall read back the joining clearance The ACU will issue the joining clearance, coordinate with PC and issue a procedural service instruction to de-conflict the departing aircraft from the specified known traffic, pass traffic information and transfer aircraft to PC in accordance with the co-ordination.

#### Overflights

4.1 Any potential conflicts in class G airspace can be resolved by applying the basic principles above. PC and the ACU should agree which unit is best suited to provide de-confliction and/or traffic information.

In accordance with the LOA the JS41 was IFR departing via Class G Airspace into Y904 and was therefore subject to individual coordination by the Wick controller with the Moray controller. The TB10 was known conflicting VFR traffic under the control of the Wick controller and observed conflicting traffic by the Moray controller. As such the relevant requirements contained in Annex L apply.

The 4000ft restriction applied to the JS41 by the Wick controller would indicate that the Wick controller had identified the confliction prior to departure of the JS41 and that their intention was to operate within the requirements of the LOA. However, Traffic Information was not passed to the JS41 pilot on the TB10 traffic, and the Traffic Information passed to the TB10 pilot was that the departing JS41 would be remaining not above 4000ft. This Traffic Information was not updated at any point prior to the Airprox.

The agreement reached between the Wick controller and the Moray controller in accordance with the LOA was that the JS41 would be transferred to the Moray controller in the climb to FL90 and that it would be clear of the TB10. The Wick controller subsequently transferred control of the JS41 to the Moray controller in confliction with the TB10 in breach of the agreement.

The Wick controller requested the positions of both aircraft immediately prior to issuing the climbto-FL90 instruction to the JS41 pilot; however, confirmation was not requested or received from the pilots that they had copied the position of the opposite direction conflicting aircraft and, as such, the position reports did not fulfil the requirement for Traffic Information to be passed.

Having ascertained the positions of both aircraft and taking the decision not to update the Traffic Information prior to issuing the climb instruction to the JS41 pilot, this may indicate that the controller did not assimilate the positions of the aircraft. Neither of the pilots queried the climb instruction, indicating that they may also not have assimilated the position and/or level of the other aircraft.

The position reports provided by the TB10 pilot to the Wick controller were inconsistent i.e. 10nm south on first report (the radar replay displays the aircraft 20nm south at the time), followed by 14nm south on the next report. This may have degraded the controller's situational awareness.

The Moray Low Sector controller was sufficiently concerned about the proximity of the JS41 to the TB10 to believe that a risk of collision existed, and issued Traffic Information followed by avoiding action to the JS41 pilot as soon as R/T contact was established. Whilst the R/T phraseology used by the Moray Low Sector controller to initiate the avoiding action was not CAP 413 standard phraseology, it was clearly understood by the JS41 pilot and assisted in resolving the confliction. The Moray controller should be commended for their decisive and timely action.

When questioned by the Moray controller after the event, the Wick controller stated that they believed the TB10 to be on the 180 radial from Wick and that this was why they had issued the climb instruction to the JS41 pilot. The option of using VOR radials for separation purposes requires both aircraft to have reported established on Wick VOR radials 20 degrees apart, with the outbound aircraft at least 20nm from the VOR and the inbound aircraft at least 30nm from the VOR. These criteria were not achievable at any point given that the initial and subsequent position reports from the TB10 pilot were inside 30nm from the VOR.

Whilst the JS41 and TB10 pilots were operating in Class G Airspace and were ultimately responsible for their own collision avoidance, the Wick controller did not effectively discharge their responsibilities in the provision of a Procedural Service to the JS41 pilot and breached the agreement reached with the Moray Low controller in accordance with the agreed procedures contained within the Letter of Agreement that exists between the two ATC Units.

## UKAB Secretariat

The TB10 and JS41 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>2</sup>. If the incident geometry is considered as converging then the TB10 pilot was required to give way to the JS41<sup>3</sup>.

## Summary

An Airprox was reported when a TB10 and a JS41 flew into proximity near Wick at 0927hrs on Thursday 9<sup>th</sup> August 2018. The TB10 pilot was operating under VFR in VMC, the JS41 pilot was operating under IFR in VMC. The TB10 pilot was in receipt of a Basic Service from Wick and the JS41 pilot was in the process of contacting the Prestwick Moray Sector on handover from Wick but no service had been agreed.

# PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots and the controller concerned, area radar and RTF recordings and reports from the appropriate ATC and operating authorities.

The Board noted that the JS41 was on a southbound flight from Wick under IFR. The TB10 pilot was operating under VFR on a northbound flight to Kirkwall, routeing in the vicinity of Wick. The TB10 pilot had contacted the Prestwick Moray Sector and had been provided with a Basic Service, reporting that he would be maintaining 5500ft. The Moray controller had contacted Wick to advise them about the TB10, providing its level and an estimate of 0930 to the east of Wick. The Wick controller requested a departure clearance for the JS41, advising that it was lined up and ready to depart. The Moray controller issued a clearance for the JS41 to climb to FL90, to join CAS at SMOKI, reminding Wick about the TB10, which he would be transferring to them as already agreed. The Wick controller read back the clearance correctly, adding that he anticipated that the JS41 would be transferred at 4000ft, but he would coordinate it". The Wick controller cleared the JS41 pilot for take-off RW13, with a local restriction to maintain 4000ft, to ensure separation from the TB10. Shortly afterwards the Moray controller had transferred the TB10 to Wick.

On first contact the TB10 pilot reported 10nm south of Wick, although the radar recordings showed that it was at a range of 20nm. Wick asked him to report at 5nm, together with Traffic Information about the JS41 climbing to 4000ft initially. The pilot acknowledged the Traffic Information but not the 5nm check. In a subsequent telephone call to the Moray controller, the Wick controller advised him that the JS41 would be transferred climbing to FL90, clean against the TB10. Some members wondered what the term 'clean' meant in this context. Civil controller members explained that it did not necessarily mean that the two aircraft would be provided with standard separation, they could, for example, have reported

<sup>&</sup>lt;sup>2</sup> SERA.3205 Proximity.

<sup>&</sup>lt;sup>3</sup> SERA.3210 Right-of-way (c)(2) Converging.

each other in sight and be content to continue visually through their respective levels. The JS41 pilot was subsequently cleared to climb to FL90 and was transferred to the Moray Sector.

The Board then discussed the actions of the Moray Sector controller. A Civil ATC Terminal member with experience of the Prestwick Centre operation explained that the Moray Sector covers about 140-150nm. Consequently, he would not necessarily be looking at the Wick area, especially because he believed that the subject aircraft would not be conflicting. However, when the JS41 pilot made his initial call, the Moray controller immediately passed Traffic Information about the TB10 in his one o'clock at 2nm, although the radar recordings show that it was about 6nm away at the time. The incorrect range estimation was likely due to the large scale of the radar display because of the sector size. This Traffic Information was updated, followed by an avoiding action turn. The pilot responded on both calls that he was looking for the traffic. This illustrated to the Moray controller that the two pilots were not 'separating' each other visually. The Board commended the action of the Moray controller, who would have undoubtedly been startled by the appearance of the two aircraft on conflicting flight paths, after Wick had stated that they would be clean.

The Board then turned its attention to the actions of the Wick controller and why he had instructed the JS41 to climb to FL90, in conflict with the known TB10. The Board noted that there was no explanation given by the controller in his report and some members wondered if he may have forgotten about the TB10. Others thought it was more likely that he had been confused in his understanding of the relative positions of the two aircraft because, when he had asked the position of the two aircraft prior to transferring the JS41, the JS41 pilot had reported being at 5nm and the TB10 pilot at 14nm (when he had previously reported being at 10nm). Having previously been told by the TB10 pilot at 0923:00 (about 2:30mins prior) that he was 10nm south of the field, the Board wondered whether the Wick controller's mental picture was that the TB10 was much closer to Wick than it was, had then mentally transposed the JS41 and TB10 '5nm' and '14nm' calls, and had consequently believed that they had passed each other.

The other possibility was that the Wick controller believed that when the TB10 pilot reported south of the airport he assumed he was on the 180° radial, which he believed would be separated from the track of the JS41. The ATSI advisor explained that to separate aircraft using radials it was first necessary to confirm that the aircraft were established on radials at least 20° apart; this had not occurred.

It was also noted that, although the TB10 pilot had been advised about the JS41 climbing to 4000ft, this information had not been updated when the JS41 pilot had been cleared to FL90. Furthermore, the JS41 pilot had not been provided with any Traffic Information about the TB10. The Board considered that if the controller had any concerns about separating the two aircraft, he could have asked the Moray controller for his assistance (the Moray Sector had previously agreed to separate other traffic on behalf of Wick).

Finally, members noted that it was not a requirement generally to separate IFR and VFR traffic in Class G airspace. However, there was a Letter of Agreement between the 2 ATSUs that Wick would deconflict departing aircraft from specified known traffic, pass Traffic Information, and transfer the aircraft to Prestwick in accordance with the agreed situation. Notwithstanding that Traffic Information had not been issued to the JS41 pilot as it should have been, the Board considered that it did not been a crucial factor in reality because the TB10 pilot was in any case visual with the JS41 sufficiently early prior to CPA.

Since the Airprox meeting the Wick SATCO has clarified the actions of the Wick controller. When the Wick controller stated that he believed theTB10 to have been on the 180° radial, he was not basing this on the fact that the pilot had reported south of the field, but had noted on his flight progress strip that the TB10, on first contact, was showing 180° on the VDF in the VCR. As the pilot had stated that he was routing via the Wick overhead, the Wick controller wrongly assumed that the TB10 would maintain the same track all the way to the Wick overhead. Similarly, the Wick controller reported that when the pilot of the JS41 reported 5d southeast of the field, the VDF was showing 161°, suggesting that he was established on a track direct to the ADN.

Unfortunately, it would appear, despite what the TB10 pilot said, that it was always routing to a point east of the field and so bringing it in to direct conflict with the outbound JS41. When the Wick controller observed the TB10 showing on the 180° on the VDF, it was, in fact, *crossing* the 180° and heading to a point to the east and not routing directly to the Wick overhead. Why no further VDF checks were obtained by the Wick controller with subsequent position reports from the TB10 pilot cannot be explained.

Believing the TB10 to be routing towards the Wick overhead from due south at 14d and the JS41 on a direct track to ADN through 5d, the Wick controller firmly believed there to be sufficient lateral separation between the two aircraft to give the JS41 further climb through the TB10's level. In this instance it was one aircraft under a Basic service against an aircraft under a Procedural service, so no standard procedural separation was required; however, the controller did have a duty of care to ensure that safety was not compromised. Based on the assumed positions of the aircraft, the controller felt that he had appropriately discharged this duty of care and so transferred the JS41 pilot to the Moray Controller – who subsequently took avoiding action and filed an Airprox report.

Turning to the cause, the Board quickly agreed that the Wick controller had cleared the JS41 pilot to climb into conflict with the TB10. The fact that the Wick controller had informed Prestwick that the JS41 would be clean on transfer was considered to be a contributory factor. As to the risk, members considered that although safety had been degraded, there had been no risk of a collision: the Moray controller had issued avoiding action, which had assisted in increasing the horizontal distance between the two aircraft to 1.5nm; the JS41 pilot had received a TCAS TA about the TB10; and the TB10 pilot had seen the JS41 prior to the CPA. The Airprox was, therefore, assessed as risk Category C.

# PART C: ASSESSMENT OF CAUSE AND RISK

<u>Cause</u> :	The Wick controller cleared the JS41 pilot to climb into conflict with the TB10.
Degree of Risk:	C.
Contributory factor:	The Wick controller informed the Prestwick controller that the JS41 would be clean on transfer.

## Safety Barrier Assessment<sup>4</sup>

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

## ANSP:

**Regulations, Processes, Procedures and Compliance** were assessed as **ineffective** because the Wick controller instructed the JS41 pilot to climb through the level of the TB10 despite informing the Moray Sector controller that the JS41 would be clear of the TB10.

**Situational Awareness and Action** were assessed as **ineffective** because the Wick controller did not take any action to control the situation.

## Flight Crew:

**Warning System Operation and Compliance** were assessed as **fully effective** but only partially available because only the JS41 was equipped with an electronic warning system.

<sup>&</sup>lt;sup>4</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the <u>UKAB Website</u>.

