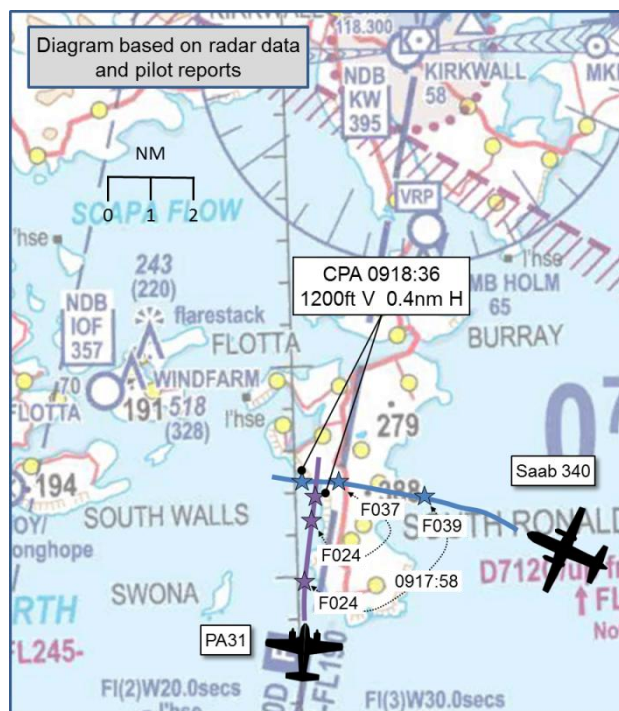


AIRPROX REPORT No 2014175Date/Time: 29 Aug 2014 0918ZPosition: 5847N 00259W
(11nm SSW of Kirkwall)Airspace: Scottish FIR (Class: G)Aircraft 1 Aircraft 2Type: SAAB 340 PA31Operator: CAT Civ PteAlt/FL: 2500ft NK
QNH (1000hPa) QNH (NKhPa)Conditions: VMC VMCVisibility: 15km 5kmReported Separation:

600ft V/50m H 1000ft V/NK H

Recorded Separation:

1100ft V/0.4nm H

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

THE SAAB 340 (SF34) PILOT reports flying IFR between cloud layers, in 'marginal VFR conditions' with navigation, beacon, strobe, taxi, landing and wing lights illuminated, and squawking Modes 3/A, C and S. The crew were on final descent at 200kt, heading 290° under a Procedural Service with Kirkwall ATC. They had been cleared for the 11 DME arc to the ILS on RW09, and to descend to 2600ft (QNH 1000hPa) on passing 15 DME. They were then instructed to report turning left onto the arc, and were then cleared to descend in accordance with the procedure. Once established on the arc, the co-pilot noticed an aircraft on the TCAS display which appeared to be within 4nm and 2000ft below them. The crew immediately asked ATC if they were aware of any traffic inbound from the south, but they were asked to standby. At this point, the SF34 was passing around 3500ft, with a vertical speed of 1000ft/min set. The crew heard the pilot of the TCAS traffic report to ATC that they were 18nm from the KWL, and maintaining 2000ft. The SF34 crew felt that something was not correct because they were on the 11nm arc, and the other aircraft already appeared to be within 1nm and around 1000ft below them. The SF34 crew decided to take action and reduced their vertical speed to 400ft/min because they considered there was a risk of collision. As the SF34 broke out of cloud, the Captain spotted the other aircraft passing 'right underneath' them, approximately 600-800ft below. The crew heard ATC trying to confirm the other aircraft's position, but they appeared to be having difficulty; the other pilot had reported that he was 3nm from the KWL and then 2 ½min later reported he was 3.5nm from the KWL. The SF34 crew slowed their aircraft to 180kt for the remainder of the arc and, once they were established on the localiser, configured early in order to maintain maximum separation.

He assessed the risk of collision as 'Medium'.

THE PA31 PILOT reports flying VFR in VMC with 'cloud layers and patches of low cloud', with navigation and strobe lights illuminated and squawking Modes 3/A, C and S. The crew were carrying out a VFR recovery to Kirkwall at 160kt, in contact with 'Kirkwall Approach/Tower'. They could see the SF34 intermittently through the patches of cloud and it was also showing on their TCAS display too, so they 'knew its position exactly all the time'. The PA31 pilot assessed that there was more than 1000ft separation between the aircraft at all times, did not take any avoiding action, and did not consider this to be an Airprox.

He assessed the risk of collision as 'None'.

Factual Background

The weather at Kirkwall at 0850, 0920 and 0950 was recorded as:

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METAR EGPA 290850Z 12014KT 9999 FEW008 15/13 Q1000
METAR EGPA 290920Z 12013KT 9999 FEW008 SCT010 15/13 Q1000
EGPA 290950Z 12014KT 9999 SCT007 BKN009 15/13 Q1000=
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Analysis and Investigation

CAA ATSI

The SF34 was operating IFR on a flight from Edinburgh to Kirkwall and was in receipt of a Procedural Service from Kirkwall Approach on frequency 118.3MHz; the Kirkwall controller was providing the service without the benefit of surveillance equipment. The PA31 was operating VFR on a flight from Inverness to Kirkwall and was in receipt of a Basic Service from Kirkwall Approach on frequency 118.3MHz.

ATSI had access to reports from both pilots and the Kirkwall Tower/Approach controller together with area radar recordings. Due to a problem obtaining RTF recordings there was no transcript available of the Kirkwall frequency.

At 0918:01 the SF34 was established on the ARC approach for RW09, descending to 2400ft. The PA31 was 2.9nm southwest of the SF34, tracking north and indicating 2400ft (Figure 1).

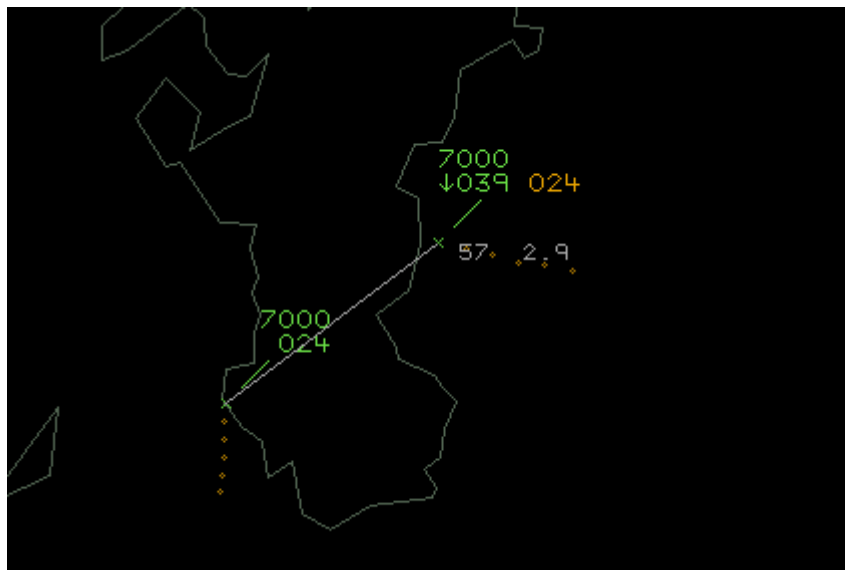


Figure 1.

The crew of the SF34 reported that they saw traffic on TCAS that appeared to be within 4nm and 2000ft below and asked Kirkwall for information on the traffic. The Kirkwall controller recalled asking the PA31 for his position when he called on frequency. According to the crew of the SF34 the pilot of the PA31 reported being 18nm from the KWL at 2000ft. The SF34 crew felt that the position report was inaccurate based on their TCAS indication and reduced their descent as they considered that there was a risk of collision.

The radar recordings showed that the two aircraft converged with the CPA occurring at 0918:36 (Figure 2) when the SF34 was indicating FL036, and the PA31 was indicating FL024.

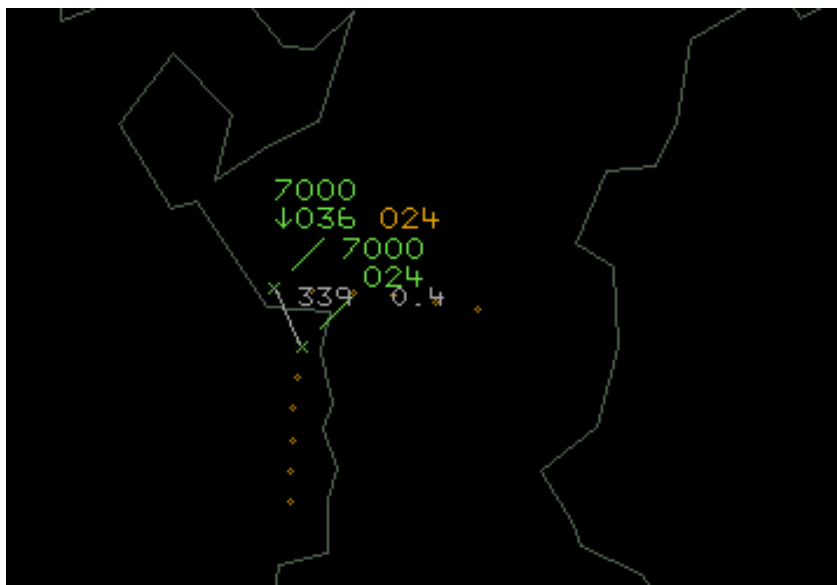


Figure 2.

The PA31 continued the approach towards right base and landed safely a few minutes ahead of the SF34 who completed the ARC approach. The pilot of the PA31 reported that in his opinion there was no risk of collision. The PA31 crew had the SF34 in sight and on TCAS.

The reports from the Kirkwall controller and the SF34 crew indicate that the PA31 crew may have given some inaccurate position reports that may have reduced the situational awareness for the SF34 crew. The Kirkwall controller recalls passing some Traffic Information on the PA31 to the SF34 crew, however the accuracy of the Traffic Information would have been dependent on accurate position reports from the PA31 crew.

The Kirkwall controller was providing the service without the benefit of surveillance equipment and, without RTF recordings, it is not possible to determine the accuracy or otherwise of the position reports passed by the PA31 crew. Under a procedural service a controller shall provide Traffic Information, if it is considered that a conflict may exist, on aircraft being provided with a Basic Service and those where Traffic Information has been passed by another ATS unit; however, there is no requirement for deconfliction advice to be passed, and the pilot is wholly responsible for collision avoidance.

UKAB Secretariat

Both pilots had equal responsibility for avoiding collisions and for ensuring that they do not fly in such proximity to other aircraft as to create a danger of collision.¹ The aircraft were converging, and the SF34 was on the right of the PA31, so the PA31 pilot was required to give way; he was confident that ample separation existed and could have taken further action if matters changed, however he may not have been aware that the SF34 crew had adjusted their descent profile to maintain separation.²

Summary

An Airprox was reported in Class G airspace between a Saab 340, on an IFR approach to Kirkwall and a PA31 on a VFR approach to Kirkwall. Both crews were in contact with Kirkwall ATC who were providing the service without the benefit of surveillance equipment. The minimum distance between the two aircraft was 0.4nm and 1200ft.

¹ Rules of the Air 2007, Rule 8, Avoiding Aerial Collisions

² Rules of the Air 2007, Rule 9, Converging

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of aircraft, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC authorities.

Noting that Kirkwall was operating without radar, members agreed that the controller was entirely reliant on accurate position reports from the pilots, and so had limited ability to improve matters. The Board determined that the PA31 pilot's position reports may, or may not have contributed to the confusion, but it was clear that he had the responsibility to give way to the Saab. They also noted that the PA31 pilot had reported that he had visual contact with the Saab at all times as they both flew in intermittent VMC between cloud layers and around patches of low cloud. Nevertheless, concerned about the position of the PA31, which they had yet to visually acquire, the Saab crew were rightly proactive in their avoiding actions. From the PA31 pilot's point of view, whilst he could have taken further action, he had judged that there was never any need to do so because he had the Saab in sight at all times (although the Saab crew could not know this, and the Board opined that it would have been beneficial if the PA31 pilot had confirmed this on the radio for the benefit of the Saab crew and ATC). The Board commended the Saab crew for using the TCAS information pro-actively, and adjusting their descent accordingly, based on all the information that was available to them given that there was doubt in their mind about another potentially conflicting aircraft. In the end, the Board agreed that, although the PA31 pilot reported he had the Saab in sight at all times, there had been a potential conflict in flight paths that had been resolved by the Saab crew ensuring that plenty of separation was maintained.

There was considerable debate amongst the Board about the Degree of Risk; some members thought that this incident represented normal operations and, consequently, the risk was E; others argued that the Saab crew had been forced to take timely action based on their TCAS information and so the risk was C. After some debate, it was agreed in the end that the Degree of Risk was Category E because the Saab crew's actions had been so effective as to generate a situation which resulted in normal operations and safety standards.

PART C: ASSESSMENT OF CAUSE AND RISK

<u>Cause:</u>	A conflict of flight paths resolved by the Saab pilot.
<u>Degree of Risk:</u>	E.
<u>ERC Score</u> ³ :	2.

³ 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.