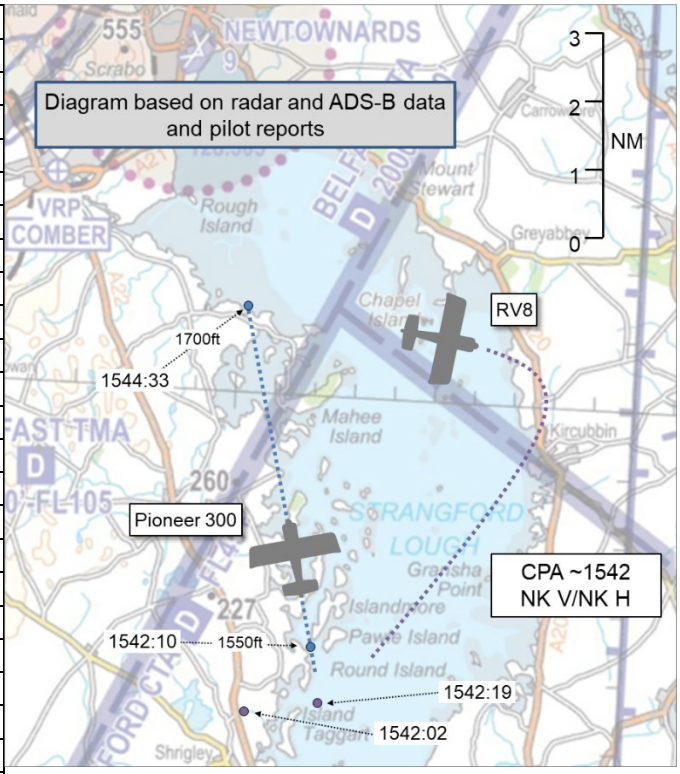
AIRPROX REPORT No 2023007

Date: 20 Jan 2023 Time: ~1542Z Position: 5430N 00540W Location: 5NM S Newtownards

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Pioneer 300	RV8
Operator	Civ FW	Civ FW
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Unknown
Provider	Belfast Approach	NK
Altitude/FL	NK	NK
Transponder	A, C, S	A, C, S
Reported		
Colours	White, red	Grey, blue
Lighting	Strobes	NR
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1900ft	NK
Altimeter	QNH (NK hPa)	QNH (NK hPa)
Heading	337°	NK
Speed	100kt	NK
ACAS/TAS	SkyEcho	SkyEcho
Alert	None	None
Separation at CPA		
Reported	0ft V/1NM H	NK V/NK H
Recorded	NK V/NK H	



THE PIONEER 300 PILOT reports that they were 7.5NM south of Newtownards, just approaching a place called Mahee Island, at 1900ft. A black and grey RV8 came in front of them from left-to-right (10 o'clock to 2 o'clock) roughly from the Comber [VRP] direction and at approximately the same level. The RV8 crossed their path approximately 3.5NM in front of them. At this point there was no problem as they could see it and there was enough distance between them. When the RV8 got to their 2 o'clock, roughly around Greyabbey, it did a steep 180° turn and headed straight towards their 3 o'clock, the RV8 just seconds away from them. When very close to them, the RV8 went behind and they could not see it after that. They continued on to Newtownards and did an overhead approach to land. After landing and taxying, the RV8 came in and landed.

The pilot of the Pioneer 300 reports that they had not taken avoiding action as the [RV8] had been at their 3 o'clock, so going straight on was the best option.

Confirming the timing of the incident, the pilot of the Pioneer 300 reports that they had been under a Basic Service with Belfast Approach at the time of the incident. They were approximately one minute away from transferring to Newtownards Radio [when the Airprox happened]. They immediately requested a frequency change from Belfast Approach to Newtownards Radio.

The pilot assessed the risk of collision as 'High'.

THE RV8 PILOT reports that they have no information on this Airprox.

THE BELFAST CITY CONTROLLER reports that [the pilot of the Pioneer 300] called Belfast Approach at 1534 and was in receipt of a Basic Service. They subsequently left the frequency to contact Newtownards Radio (at 1542:30) and made no mention of an Airprox on the Belfast Approach frequency. The [pilot of the RV8] was also working Belfast Approach and was transferred to Newtownards Radio at 1542:05.

THE NEWTOWNARDS AIR/GROUND RADIO OPERATOR reports that they were not aware of any incident or comments regarding [an Airprox] made either in the air or on the ground concerning this matter.

Factual Background

The weather at George Best Belfast City Airport was recorded as follows:

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EGAC 201550Z AUTO 15004KT 9999 NCD 06/M02 Q1021
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Analysis and Investigation

NATS Belfast City Airport Unit

Prior to the reported Airprox, a Basic Service outside controlled airspace was being provided to both [pilots] by an ATCO at Belfast City operating from the aerodrome position. Belfast City was operating with SSR only, utilising the Crow Hill enroute radar based at Belfast International Airport. Due to high ground, radar coverage from this radar below 2000ft in the vicinity of Newtownards is very poor, bordering on non-existent.

There are some very intermittent SSR returns from [the Pioneer 300] and a 7000 squawk (possibly [the RV8]) before they were transferred to Newtownards Radio at 1541 and 1542. The last time that [the Pioneer 300] and the 7000 Squawk were visible simultaneously on radar was 1535 and, at this point, the 2 contacts were approximately 5NM apart. Unfortunately, after 1541 there were no further radar returns visible from any aircraft in the vicinity of Newtownards.

The Belfast City ATCO had not submitted an MOR on the date of the reported Airprox as they were not aware of the event.

At 1512:32, [the pilot of the RV8] contacted Belfast Approach requesting a Basic Service. The aircraft was an RV8 from [departure airfield] to [destination airfield] routeing south of the Mourne mountains. Belfast Approach offered the pilot a Basic Service. No squawk was assigned, and no contact was visible on radar.

At 1516:30, a very weak radar contact was observed tracking SW towards the Mournes on a 7000 squawk. Although positive radar identification was never sought or achieved, it is possible that this contact was [the RV8].

At 1531:10 [the pilot of the RV8] called the Belfast Approach frequency, north of Newcastle, [routeing] via the Ards Peninsula.

At 1534:40 [the pilot of the Pioneer 300] contacted Belfast Approach and reported abeam Newcastle routeing up the Ards Peninsula [to their destination airfield]. ATC advised the pilot that it was a Basic Service. When [the pilot of the Pioneer 300] made their initial contact with ATC, the 7000 squawk was not visible on radar. ATC did not provide Traffic Information to either [pilot].

At 1535:20, [the Pioneer 300] and the 7000 squawk were visible on radar simultaneously; at this point, the contacts were a little over 5NM apart (see Figure 1).

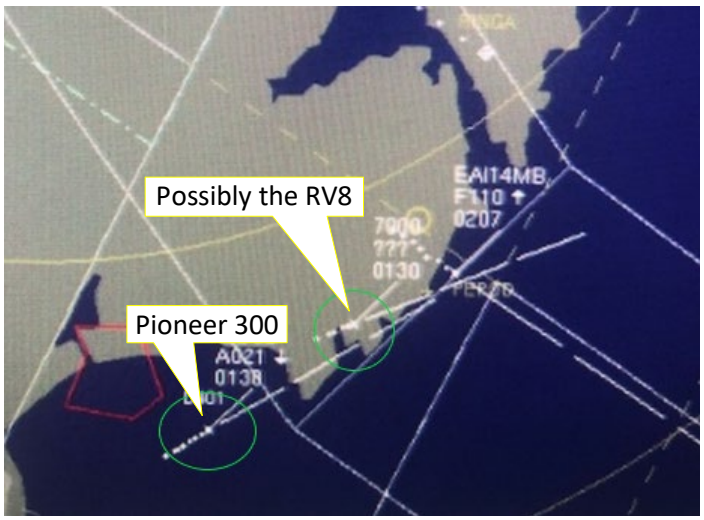

Figure 1 – 1535:20. The last moment that the Pioneer 300 and the aircraft squawking 7000 (presumed to have been the RV8) were visible on radar simultaneously.

1536:20 was the time of the last radar contact with [the Pioneer 300].

1542:04 was the time of the last radar contact with the 7000 Squawk.

1542:24 [the pilot of the Pioneer 300] requested a frequency change to 128.305MHz [Newtownards Radio]. ATC did not advise [the pilot of the Pioneer 300] that [the pilot of the RV8] had [also just changed to that frequency].

At the time of the reported Airprox, ([initially reported by the pilot of the Pioneer 300 as 1550]) neither aircraft were on frequency and therefore not in receipt of a service from Belfast. However the unit investigation has highlighted that several opportunities were missed by ATC to provide Traffic Information to both aircraft whilst on the Belfast City Approach frequency.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. The Pioneer 300 was not observed on radar after 1538:18 and the RV8 appeared on only 2-3 sweeps in the moments around the reported time of the Airprox. Analysis of ADS-B data revealed an intermittent track for the Pioneer 300.

The exact moment of CPA could not be determined but has been estimated to have been 1542 as that had been the moment that the pilot of the Pioneer 300 reported that they had requested a frequency change from Belfast Approach to Newtownards Radio immediately after CPA. The request was recorded as occurring at 1542:24. The diagram was constructed from the various data sources and an integration of the pilot's narrative reports. The depiction of the aircraft tracks in the diagram is speculative, based on the information available, and does not represent the actual tracks which could not be determined. The actual separation at CPA could not be determined.

The Pioneer 300 and RV8 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[1]

Summary

An Airprox was reported when a Pioneer 300 and an RV8 flew into proximity 5NM south of Newtownards at approximately 1542Z on Friday 20th January 2023. Both pilots were operating under VFR in VMC, the Pioneer 300 pilot in receipt of a Basic Service from Belfast City. The service provided to the pilot of the RV8 could not be determined.

[1] (UK) SERA.3205 Proximity.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controller and AGO involved and a report from the appropriate operating authority. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first considered the actions of the pilot of the Pioneer 300. Noting that the EC equipment fitted to the Pioneer 300 had been of the same type as that fitted to the RV8, members wondered why neither pilot had reported that they had received an alert. Traffic Information on the RV8 had not been passed to the pilot of the Pioneer 300 and, consequently, they had not had situational awareness of the presence of the RV8 until it had been visually acquired. Notwithstanding, the separation between the aircraft upon first sighting had not been of concern to the Pioneer 300 pilot until the pilot of the RV8 had turned and had been tracking towards the Pioneer 300. Members noted that there had been sufficient time for the pilot of the Pioneer 300 to have assessed the situation and to have decided upon a course of action to ensure adequate separation. The decision had been that they had maintained their heading and had judged that the pilot of the RV8 would have passed behind. Considering that the reported separation had been 1NM, members agreed that that decision had proved to be sound. Notwithstanding their assessment of the separation between the aircraft, some members wondered why the Airprox had not been reported on the radio given that the pilot of the Pioneer 300 had been concerned by the proximity of the RV8.

Members felt that it was unfortunate that there had been poor radar coverage of the area in question and that there had been virtually no ADS-B data to which they could refer. The few momentary returns available seemed not to be reflective of the narrative report provided by the pilot of the Pioneer 300. Nevertheless, members proceeded with their deliberations.

Turning their attention to the pilot of the RV8, members were disappointed that no information pertinent to the Airprox, or the events that had led to it, had been provided.

Members next considered the ground elements and, in particular, the actions of the Belfast Approach controller. The timing of the Airprox was pondered and members noted that both pilots had been in receipt of a Basic Service in the moments before the Airprox. It was apparent that the pilot of the Pioneer 300 had changed frequency shortly after CPA had occurred, but it could not be determined whether the pilot of the RV8 had been in receipt of a Basic Service from the Belfast Approach controller at the moment of CPA or if they had already re-tuned to the Newtownards Radio frequency. Notwithstanding, members acknowledged that the Belfast Approach controller had not been required to have monitored the flight under the terms of a Basic Service. For the period of time that the pilots had been on the same frequency, some members suggested that there had been opportunity for Traffic Information to have been passed, and such Traffic Information may have supported each pilot's situational awareness.

Concluding their deliberations, members turned their attention to the consideration of risk. Noting the absence of reliable radar and ADS-B data, the only assessment of the separation between the aircraft had been the estimate provided by the pilot of the Pioneer 300. Reluctantly, members agreed that the risk of the encounter could not be determined from the information available and recorded the Airprox as Risk Category D. Members agreed that the following factors (detailed in Part C) had contributed to this Airprox:

CF1. The Belfast Approach position had been operating with SSR only.

CF2. The Belfast Approach controller had not been required to monitor the flight under the terms of a Basic Service.

CF3. The Airprox had taken place outside the select frame of the STCA in use on the Belfast Approach position.

CF4. Neither pilot had had situational awareness of the other aircraft before it had been visually acquired.

CF5. The EC equipment fitted to each aircraft would have been expected to have detected the presence of the other but no such alert had been reported.

CF6. The pilot of the Pioneer 300 had been concerned by the proximity of the RV8.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023007			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Manning and Equipment			
1	Technical	• Radar Coverage	Radar Coverage	Non-functional or unavailable
	• Situational Awareness and Action			
2	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
	• Electronic Warning System Operation and Compliance			
3	Technical	• Conflict Alert System Failure	Conflict Alert System did not function as expected	The Conflict Alert system did not function or was not utilised in this situation
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
4	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
	• Electronic Warning System Operation and Compliance			
5	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
	• See and Avoid			
6	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: D

Safety Barrier Assessment[2]

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

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **not used** because the Belfast Approach controller had not been required to monitor the flight under the terms of a Basic Service.

Electronic Warning System Operation and Compliance were assessed as **not used** because the Airprox had taken place outside the select frame of the STCA in use at the Belfast Approach position.

[2] The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the UKAB Website.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had had situational awareness of the presence of the other until visually acquired.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment fitted to each aircraft would have been expected to have alerted the respective pilot to the presence of the other but no such alerts had been reported.