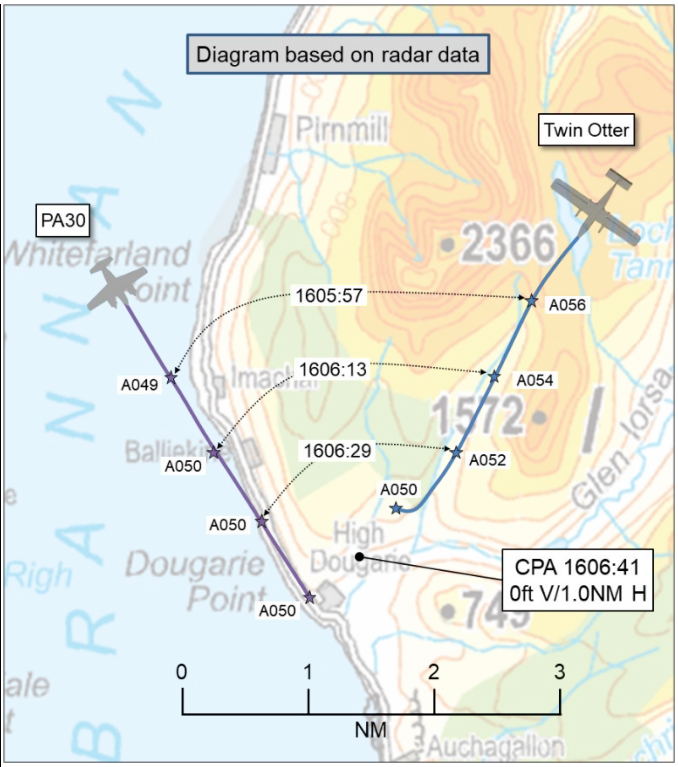
AIRPROX REPORT No 2024094

Date: 19 May 2024 Time: 1607Z Position: 5535N 00521W Location: Dougarie Point, Isle of Arran

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Twin Otter	PA30
Operator	CAT	Civ FW
Airspace	Scottish FIR	Scottish FIR
Class	G	G
Rules	IFR	VFR
Service	Traffic	Basic
Provider	Scottish Control	Scottish Control
Altitude/FL	5000ft	5000ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Blue/White	White/red & blue
Lighting	Strobes and nav lights.	Beacon and strobes
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	5000ft	5000ft
Altimeter	QNH	QNH
Heading	200°	135°
Speed	140kt	160kt
ACAS/TAS	TCAS II	Not fitted
Alert	RA	N/A
Separation at CPA		
Reported	400ft V/<1NM H	NK V/NK H
Recorded	0ft V/1.0NM H	



THE TWIN OTTER PILOT reports that they were IFR but flying in VMC with good visibility ([greater than] 65km visibility reported by the AFISO) in uncontrolled airspace. The Scottish controller informed them of VFR traffic 10NM out in their 1 o'clock position, 1000ft below tracking southeast. Another aircraft was also mentioned over [the destination airport] at 4500ft routing southeast as well. They were visual with the traffic in their 1 o'clock position which still appeared a long way out and routeing almost parallel to them. The [other aircraft crew] were informed of them as well. They decided to commence a 1000ft/min descent to get to circuit altitude for a visual approach. This would get them well below both aircraft before they would cross tracks. It soon became clear that the aircraft they had visual was actually routeing more easterly towards them than they had initially thought and was closing in rapidly. The pilot monitoring (the Captain) made a call to turn right so they would pass [behind the aircraft] as they were getting close and on a converging track. As they turned and momentarily pointed towards the aircraft, they received a TCAS RA. They followed instructions and immediately increased rate of descent whilst keeping the turn going. The TCAS RA ceased almost instantly. They passed [behind the aircraft] and approximately 300-400ft below their altitude remaining visual with them at all times. As the TCAS indicated 'clear of conflict' almost instantly and they hadn't changed their flight path (they were already in a descent and only increased the rate), they did not notify ATC to make them aware of the incident, which they should have done. The other aircraft wasn't heard on the radio so they assumed they had not seen them. [They opined this was a] combination of the other aircraft routeing more easterly than anticipated and flying at a much higher speed than expected. [They noted that tracker software] showed the traffic was a Twin Comanche [PA30] with a 170kt groundspeed.

The pilot assessed the risk of collision as 'Medium'

THE PA30 PILOT reports that they were not aware of this Airprox until [approximately one month later]. They did recall speaking to Scottish Information throughout that sector of the flight but they were not made aware of the close proximity of any other aircraft.

THE SCOTTISH CONTROLLER reports that they had been asked to file this report after being made aware of an Airprox report made by a pilot of an aircraft they had worked some time ago. Therefore, their recollection of events may not be perfect, as this event had happened 8 days [prior to their report being written].

They were seated in the Westcoast Tactical and Planner role. The session had been slightly complicated around to the west of the Scottish TMA, centred on Arran, involving 3 to 4 different aircraft on varying types of service. The two aircraft concerned in the Airprox report were [Twin Otter callsign], IFR at FL60 under a Traffic Service and [PA30 callsign], VFR reported at 5000ft on a Basic Service.

They spotted the confliction between these two aircraft at an early stage and believe that they passed relevant Traffic Information in good time. [The PA30 pilot] was just given general information rather than an accurate clock code and mileage as they were only receiving a Basic Service. For [the Twin Otter] they gave the clock code and mileage, possibly twice before they reported visual [with the other aircraft].

Once the [Twin Otter] pilot reported visual, they deemed that they no longer required updates and that they were now best placed to achieve their own collision avoidance. If anything, they would consider further updates from them, using a slightly behind radar picture, to be more of a distraction. If [the pilot] had lost visual, they would have expected a transmission to say this and would have immediately started passing Traffic Information again.

Although the aircraft appeared to pass fairly close on radar, they were satisfied that the [Twin Otter] pilot was visual and able to avoid [the PA30]. The situation passed without further incident and they were not made aware at any time of the Airprox.

Factual Background

The weather at Campbeltown was recorded as follows:

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METAR EGEC 191550Z 29010KT 9999 FEW007 13/11 Q1018
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Analysis and Investigation

NATS Safety Investigation

The pilot of [the Twin Otter] reported they had been involved in an Airprox to the west of Arran when working the Westcoast controller on a Traffic Service, with VFR flight [PA30 registration], which was in receipt of a Basic Service. Traffic Information was passed to both pilots several times, commencing when they were 16NM apart, before their closest point of approach.

Information available to the investigation included a report from the Westcoast controller, radar and R/T recordings, and an email discussion with the pilot of [the Twin Otter].

The Westcoast sector was being operated by a single controller in a combined Tactical and Planner role. The pilot of [the PA30] reported onto the Westcoast frequency at 1523:20, passed their details and requested a Basic Service which was agreed, in line with procedure that detailed no radar-derived service would be provided below FL55. The controller created an electronic VFR flight strip for the flight which [was placed on their display screen]. [The PA30 pilot] was passed the Portree QNH of 1013hPa by the controller and the pilot explained their routeing. [The PA30] was 11.6NM southeast of Benbecula at this time and remained on Mode A code 7000 (visual on radar) throughout the event. Due to the low altitude of [the PA30] the aircraft frequently dropped from the controller's radar for extended periods and, during one of these periods, at 1542:40 the controller asked the pilot of [the PA30] to report their position. The pilot reported they were *"about eight miles southeast of Coll at 5000ft, 1013 on a track of 150°"*. The controller subsequently asked the pilot how close to

Prestwick they would be passing as they attempted to ascertain who the next agency to work the flight would be. The pilot reported [their routeing, and the PA30] reappeared on radar at 1545:00 indicating FL49 on a track of 146°. The aircraft was visible on radar thereafter.

At 1551:12 the pilot of [the Twin Otter] reported onto the Westcoast frequency climbing to 6000ft [with their routeing]. The pilot requested a Traffic Service and this was agreed, to commence after [a waypoint] where the aircraft would leave the confines of controlled airspace. [The Twin Otter] subsequently vacated controlled airspace at 1557:55. In their email to Safety Investigations, the pilot of [the Twin Otter] reported [that they were IFR], but flying in VMC with good visibility.

At 1601:41 the controller transmitted to the pilot of [the Twin Otter], *"There's VFR traffic to the west of you at the moment, routeing down the west side of Arran, or expecting to route that way, at altitude 5000ft"*. The pilot responded that they copied and that they would keep a good lookout. Traffic Information was also then passed to the pilot of [the PA30 with the IFR traffic routeing] *"maintaining 6000ft at the moment but will be descending for [destination] at some point"*. The pilot of [the PA30] responded, *"Copied"*. The aircraft were 16.5NM apart at this time.

The controller issued further Traffic Information to the pilot of [the Twin Otter] at 1603:41 *"Previous traffic mentioned is now between one and two o'clock, range ten miles, tracking south-southeast, last reported altitude 5000ft"*. Once the pilot had responded, the controller passed further Traffic Information to [the Twin Otter pilot], this time regarding another VFR aircraft on frequency, *"Further traffic, passing southeasterly over [Twin Otter's destination], VFR traffic, last reported altitude 4500ft"*. The pilot responded that they copied.

At 1604:37 the pilot of [the Twin Otter] reported that they were commencing descent and the controller responded, *"Nothing else to affect that. Previous traffic is in your one o'clock, range 7NM, altitude 5000ft"*. The pilot responded *'roger'* and the controller corrected that the other traffic was indicating FL50. The controller then informed the pilot of [the PA30], *"Previous traffic I mentioned to you is east of you, descending through your level into [destination]"* and the pilot responded *"Roger, looking…"*. [The PA30] was 7.2NM west of [the Twin Otter] at this time. [The Twin Otter pilot] commenced descent 6sec later.

A low-level Short-Term Conflict Alert (STCA) activated between [the Twin Otter] and [the PA30] at 1605:12 when the aircraft were 5.2NM apart. The pilot of [the Twin Otter] reported, *"Visual with the traffic now, one o 'clock"* at 1605:21. A red, high severity STCA activated at 1606:16 when the aircraft were 2.1NM apart and [the Twin Otter] was descending through FL53. [The PA30] was still indicating FL50.

The [Twin Otter] turned right approximately 30° at 1606:31 when 1.4NM from [the PA30]. Downlinked TCAS data showed that at 1606:32 the pilot of [the Twin Otter] received a series of TCAS 'Descend' resolution advisories (RA), which concluded at 1606:44.

The closest point of approach between [the Twin Otter] and [the PA30] was at 1606:42 and neither pilot reported an Airprox on the Westcoast frequency.

The pilot of [the Twin Otter] concluded that they most definitely should have reported it at the time and they apologised for not doing so, [claiming that] it was entirely their misjudgement of the other aircraft. [They opined that] when being told about VFR traffic, [the crew had] both assumed it would be [an aircraft] flying slower than them. After landing, the pilot of [the Twin Otter] telephoned the PC Operations Supervisor to report the Airprox. Safety Investigations were then informed by the UK Airprox Board.

The Airprox occurred when [a Twin Otter], an IFR aircraft in receipt of a Traffic Service came within 1NM and 0ft of [a PA30], VFR on a Basic Service, in Class G airspace, at 5000ft. Traffic Information had been passed to the pilot of [the Twin Otter] when the aircraft were 16.5NM, 10.2NM and 7.2NM apart. Traffic Information had also been passed to the pilot of [the PA30]. The Closest Point of Approach (CPA) occurred at 1606:42 and was recorded on Multi-Track Radar as 1.0NM and 0ft. The incident was resolved by the pilot of [the Twin Otter], descending through the level of [the PA30]

and turning right to pass behind the other aircraft, prior to the closest point of approach. The pilot of [the Twin Otter] stated that they remained visual with [the PA30] at all times.

UKAB Secretariat

An analysis was made of the radar replay and both aircraft were positively identified using Mode S data. The radar was set with the LON QNH at 1013hPa and the time of CPA was determined as 1606:42 (Figure1).

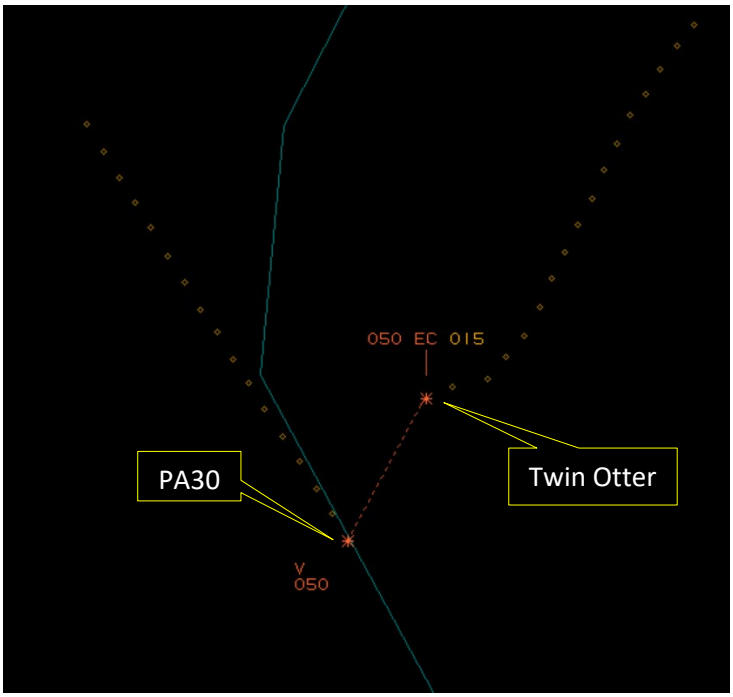


Figure 1- Time 1606:42 separation 0ft and 1.0NM at CPA

The Twin Otter and PA30 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] If the incident geometry is considered as converging then the Twin Otter pilot was required to give way to the PA30.[2]

Summary

An Airprox was reported when a Twin Otter and a PA30 flew into proximity at Dougarie, Isle of Arran, at 1607Z on Sunday 19th May 2024. The Twin Otter pilot was operating under IFR in VMC and the PA30 pilot under VFR in VMC, the Twin Otter pilot in receipt of a Traffic Service and the PA30 pilot in receipt of a Basic Service, both from Scottish Control.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from the air traffic controller 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 Twin Otter pilot, and wondered if the crew may not have appreciated the closing angle and speed of the PA30 while they had continued their descent, through the PA30's level, to their destination. With the PA30 in sight, members felt that the descent planning could have been better and it was noted that the crew, having been concerned by their proximity to the PA30 (**CF5**), had made a right turn to pass behind the PA30, thus triggering their own TCAS RA (**CF4**)

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3210 Right-of-way (c)(2) Converging.

during the avoidance manoeuvre. Members also discussed whether a Deconfliction Service for the Twin Otter would have been practical but, after some discussion, the Board agreed that the Traffic Service, which the crew had been receiving, had been the best option available to them in that area as a Deconfliction Service had not been available below 5000ft.

Turning to the actions of the PA30 pilot, the Board wondered why they had only been in receipt of a Basic Service and if that could have been upgraded to a Traffic Service. A controller member with particular knowledge of operations in that area confirmed to the Board that a Traffic Service would have provided the pilot with greater awareness of other aircraft in their vicinity and that the service had been available to them (**CF2**). The Board agreed that, as it was, the PA30 pilot had been given Traffic Information on the Twin Otter commensurate with the Basic Service and providing them only generic awareness of the Twin Otter's position (**CF3**).

The Board then focussed on the actions of the Scottish controller, considering whether anything could have been improved upon to provide greater separation between the Twin Otter and the PA30. Discussions were centred on the provision of service to both aircraft and particularly to the passing of Traffic Information to the PA30. Members explored the rationale behind the difference between the information that had been provided to the PA30 pilot about the Twin Otter compared to the information they had given to the Twin Otter pilot about the position of the PA30. The question first arose as to why the PA30 had only been displaying a generic 7000 conspicuity squawk, and why they had not been given a specific code to indicate that they had been receiving a service from the Westcoast controller and it was noted that the PA30 transponder radar returns had, at times during their flight, been intermittent and that the aircraft had not been positively identified. Expanding on this thread, members further noted that this had not precluded the PA30 from the ability to receive a Traffic Service, only that the controller would have had to inform the pilot should radar contact with the aircraft be lost and then reidentify the aircraft on regaining radar contact. The Board highlighted that the Basic Service which had been requested by the PA30 pilot, and subsequent lack of identification of the aircraft (in accordance with normal procedures), had meant that the controller could not have given a clock-code position of the Twin Otter relative to the PA30. However, had the controller been requested to provide a Traffic Service then the PA30 would have been identified and more accurate Traffic Information may have been passed.

On reaching a conclusion, the members were split regarding whether the controller could have provided the PA30 pilot with more information, or have provided a heading to the Twin Otter pilot to help increase the amount of lateral separation between the aircraft. However, members agreed that the controller had met the requirements of the services requested and had provided Traffic Information to the Twin Otter pilot prior to any short-term conflict alert (STCA) (**CF1**), and that this had been sufficient for the Twin Otter pilot to visually acquire the PA30 and subsequently avoid it. After a vote, the Board agreed by a slight majority that, although safety had been degraded, there had been no risk of collision; Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024094			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Electronic Warning System Operation and Compliance			
1	Technical	• STCA Warning	An event involving the triggering of a Short-Term Conflict Alert (STCA) Warning	
	Flight Elements			
	• Tactical Planning and Execution			
2	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider
	• Situational Awareness of the Conflicting Aircraft and Action			

3	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			
4	Contextual	• ACAS/TCAS RA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system resolution advisory warning triggered	
	• See and Avoid			
5	Human Factors	• Incorrect Action Selection	Events involving flight crew performing or choosing the wrong course of action	Pilot flew close enough to cause concern

Degree of Risk: C.

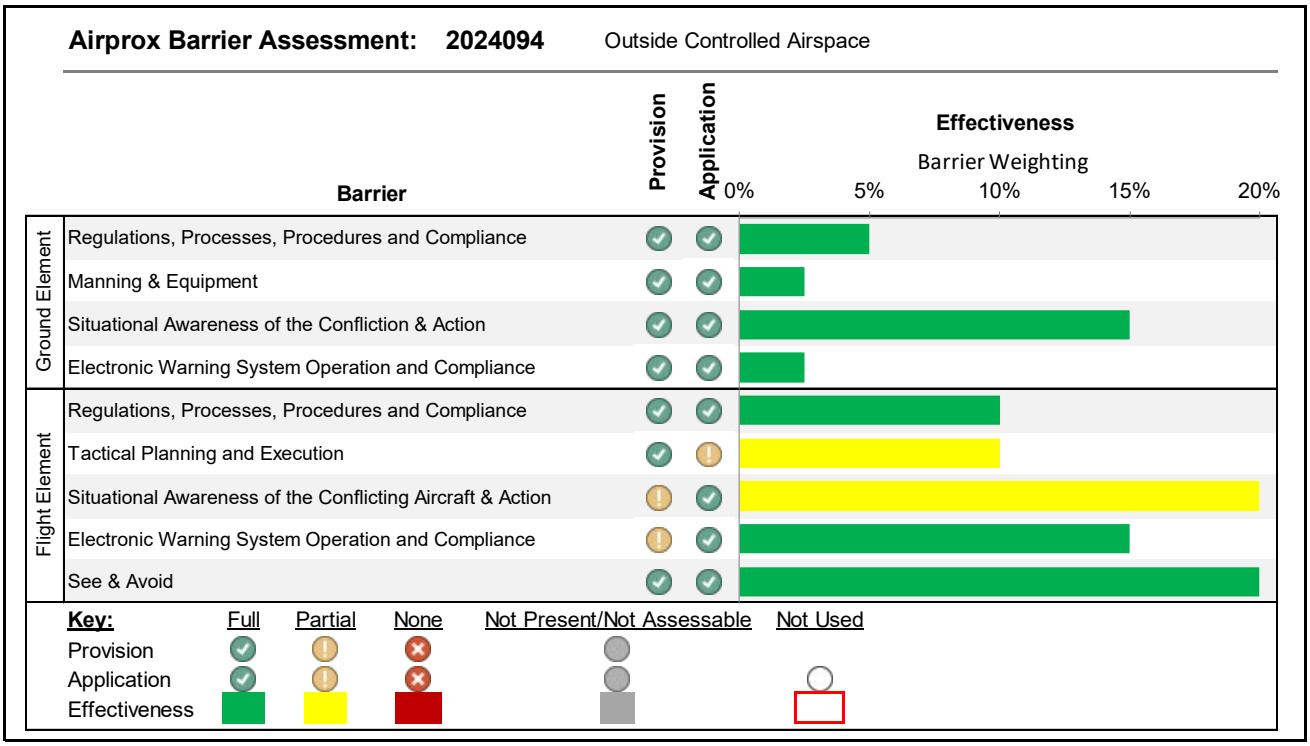
Safety Barrier Assessment[3]

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

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the PA30 pilot had requested only a Basic Service when a Traffic service was available to them.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the PA30 pilot had only generic situational awareness of the Twin Otter's presence.



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