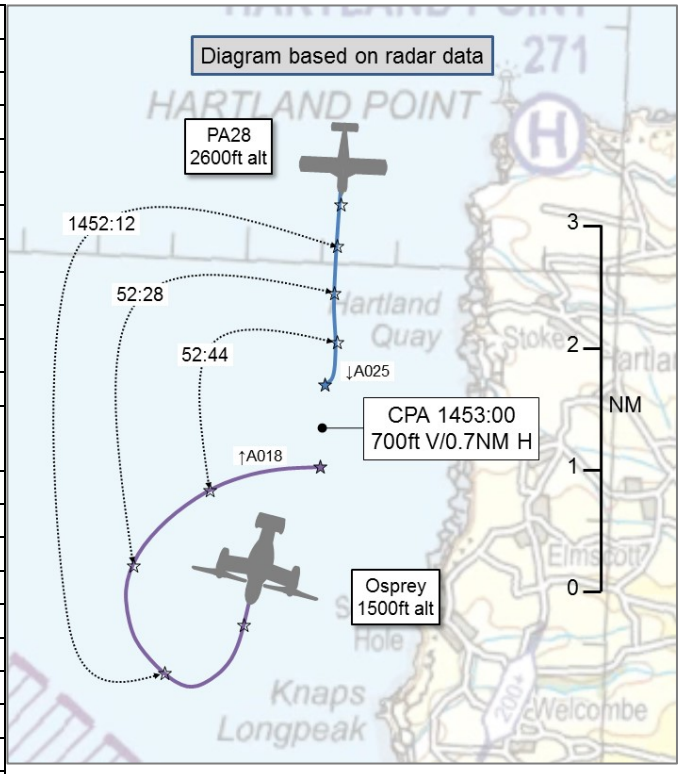
AIRPROX REPORT No 2020052

Date: 18 May 2020 Time: 1453Z Position: 5058N 00433W Location: 8NM N of Bude

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	Osprey
Operator	Civ FW	Foreign Mil
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Unknown[1]
Provider	Exeter	
Altitude/FL	2500ft	1800ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Cream/Red stripes	Dark grey
Lighting	NR	Nav, Landing, Red Beacon
Conditions	VMC	VMC
Visibility	20km	CAVOK
Altitude/FL	1500-2000ft	1500ft
Altimeter	QNH (1024hPa)	Rad Alt
Heading	NR	180°
Speed	NR	220kt
ACAS/TAS	Not fitted	TCAS II
Alert	N/A	None
Separation		
Reported	NR V/3NM H	NR V/1-2NM H
Recorded	700ft V/0.7NM H	



THE PA28 PILOT reports conducting a pleasure flight when they spotted what they thought to be a large drone, similar to that being used to deliver COVID-related supplies to the Isle-of-Wight, at a range of about 3NM from their aircraft. The 'drone' appeared to have a mid-fuselage wing configuration with large black propellers, whose motion was visible in flight. They could not see any registration marks on the aircraft and did not hear any transmissions on the RT that they though could have come from its pilot. The pilot saw the 'drone' on 3 occasions during their flight, the closest of which occurred approximately 3NM south of Hartland Point. On this occasion, the 'drone' was flying south, ahead of them and at a similar altitude, when it turned through 180° and headed directly towards them. The aircraft continued to close on them until avoiding action was required, which was taken by turning right.

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

THE OSPREY PILOT reports that they were in LFA[2] 2 near Lundy Island, flying east at 1500ft agl and 220KCAS to [a local site] for refuelling operations. There were 3 aircrew in the cockpit, a tail scanner and two military passengers. They were monitoring the following radio frequencies: Military Low Flying common, [the refuelling site], Swanwick(Mil) and their own internal SATCOM. As they approached the coastline, a RN Wildcat departed [the refuelling site] and they both discussed their intentions on the [refuelling site] frequency and made position reports on the Military Low Flying common frequency. The Wildcat was departing to the west so they turned south, paralleling the coast about 2NM offshore; this was to deconflict laterally with the Wildcat. At this time, they had a TCAS contact showing an aircraft about 6NM off their 11-12 o'clock position. The altitude of the contact varied +/- 500ft relative to their altitude. The TCAS contact was intermittent, but it was apparent that it was getting closer with an

[1] The Osprey pilot was squawking a Swanwick(Mil) SSR code but, due to reporting and tracing delays, it was not possible to determine if an ATS was being provided by Swanwick(Mil).
[2] Low Flying Area.

undetermined relative altitude; the last contact was about 3NM at their 1-2 o'clock and 500ft lower. This position was approximately 10NM south of Hartland Point lighthouse. Due to the unknown aircraft being south of them, and thus between them and the sun, visually acquiring it was difficult due to reflections off the water. Because they did not see the aircraft, they turned directly east to make their approach to [the refuelling site]. After their turn to the east, the TCAS contact returned and was at a range of approximately 1-2NM at their 7-8 o'clock and slightly below them. They were able to visually acquire a light single-engine aircraft and did not perceive there to be a collision hazard. It looked to be turning back towards them, but they lost sight of it behind them. At this point, the tail scanner briefly saw the aircraft but was unable to determine its direction of flight. They continued to [the refuelling site] for landing.

The pilot assessed the risk of collision as 'None'.

THE EXETER CONTROLLER reports operating with minimal staff due COVID-19. They were the Tower controller when [the PA28 c/s] got airborne at 1416Z and there was no Radar controller due SRATCOH[3] breaks. At 1433Z, they were relieved from the Tower position and they opened up the Radar console and provided a Basic Service to the pilot of [the PA28 c/s] who had departed to the NW. Whilst on Radar, they were not aware that [the PA28 c/s] had had an Airprox and they did not notice anything unusual. At some point later (they cannot remember exactly when or even whether it was the same day) they were contacted by the pilot of [the PA28 c/s] who enquired how to submit an Airprox report.

The controller did not make an assessment of the severity of the incident.

Factual Background

The weather at Cardiff-Wales Airport and Exeter Airport was recorded as follows:

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METAR EGFF 181450Z AUTO 29016KT 9999 NCD 15/09 Q1025=
METAR EGTE 181450Z 31006KT 250V360 CAVOK 23/09 Q1024=
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Analysis and Investigation

Exeter ATC

[The PA28 pilot] was on a local flight. The radar position was not open because Exeter ATC was on minimal staffing levels due to COVID-19 restrictions and was conducting SRATCOH breaks. A Basic Service (BS) was provided by the Tower controller initially and at 1433Z, the radar console was opened and the provision of the BS transferred to the Approach controller.

[The PA28 pilot] had flown to the north Cornwall coast and had opted to remain on the Exeter Radar frequency although, due to the range (approximately 40NM) and altitude of the aircraft, radar and radio contact was unlikely to be maintained throughout the flight.

[The PA28 pilot] returned to [their destination airfield] and landed at 1527Z. The pilot did not report the incident in question on the radio and, when the Radar controller was questioned, they stated that they did not notice anything unusual about the flight although stressed that the flight of the aircraft was not continuously monitored in line with the conditions of the provision of a Basic Service.

At some stage post flight, the pilot of [the PA28] submitted an Airprox report. The subsequent action of the Airprox report prompted the submission of an MOR from the controller providing a BS at the time although the controller did not have any information to add as they were unaware that [the PA28 pilot] had been involved in an Airprox. It was not possible to review the radar recordings as part of this investigation as the incident came to light more than 30 days after it happened, which is the length of time recordings are stored.

[3] Scheme for Regulation of Air Traffic Controllers' Hours

UKAB Secretariat

The PA28 pilot was contacted by the UKAB Secretariat to establish the nature of the craft that was seen and if they were certain that it was the same craft on all 3 occasions. The pilot confirmed that it was the same craft but no records of any drone activity in the area could be found. The Radar Analysis Cell reviewed the NATS radars for the entirety of the PA28 pilot's flight and established that an Osprey aircraft was near to the PA28 at the times and locations reported by the PA28 pilot. On the 2 occasions that are not reported as Airprox, the Osprey and the PA28 passed each other at a range of 2.6NM on the first occasion and, on the second occasion, the Osprey crossed the nose of the PA28 at a range of 1.2NM and approximately 1000ft below (see Figure 1).

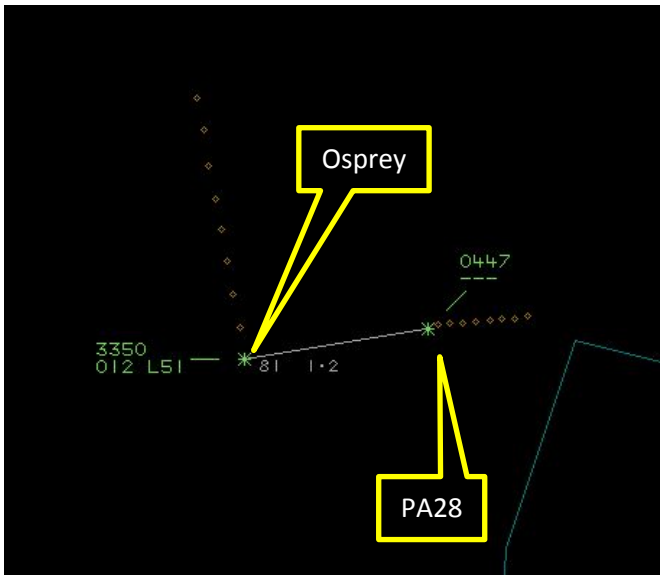


Figure 1 – 1450:18

This second encounter occurred off Hartland Point some 3 minutes prior to the Airprox, as the PA28 was heading west and the Osprey heading south and, although the pilot recalls receiving TCAS contacts after this time, the geometry is such that, in all likelihood, the TCAS contacts to which the Osprey pilot refers were received during their southbound leg towards Hartland Point.

The Osprey then continued to head south until, at 1452:07, the Osprey pilot commenced a right-hand turn with the intention of heading to the east towards their refuelling site (Figure 2). This right-hand turn eroded the separation between the PA28 and the Osprey until CPA was reached – 0.7NM lateral and 700ft vertical separation – at 1453:00 (Figure 3).

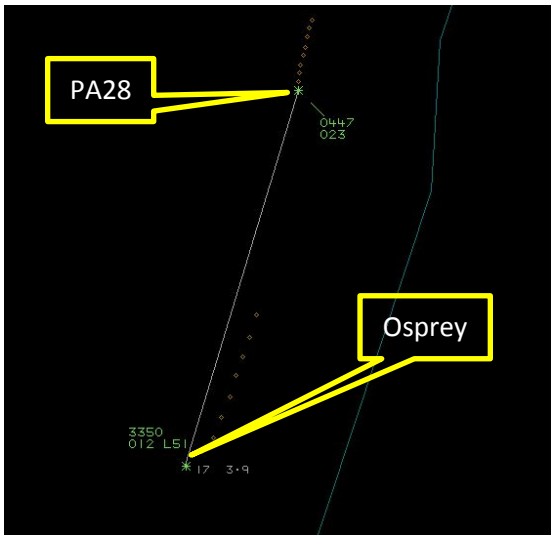


Figure 2 – 1452:07

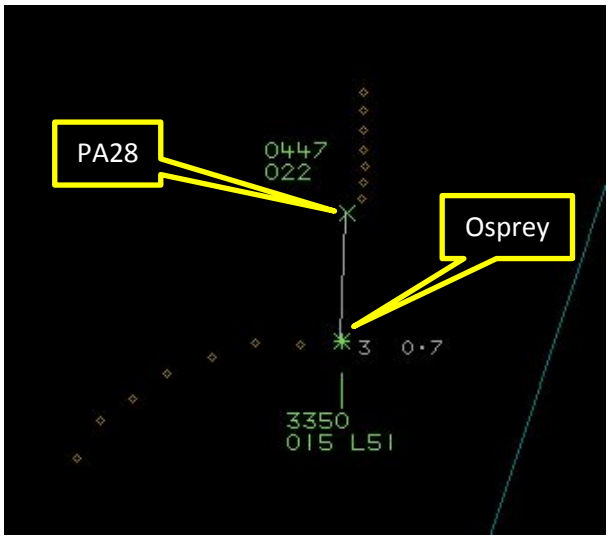


Figure 3 – 1453:00 (CPA)

The PA28 and Osprey pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[4] If the incident geometry is considered as converging then the PA28 pilot was required to give way to the Osprey.[5]

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

Comments

USAFE

Having viewed the radar replay data, there are clearly some discrepancies between that information and the pilot's recollection of the event. The USAFE-UK Host Nation Coordination Cell (HNCC) has attempted to discuss these discrepancies with the pilot; however, they are unfortunately no longer stationed in the UK which has made direct liaison difficult. That said, this event has been discussed at length with the unit involved and it is felt that any discrepancies are due to the delay between the event occurring and an Airprox being filed, rather than for any other reason. Unfortunately, on this occasion, the situation was further exacerbated by an additional delay – caused in part by a change-over of key Flight Safety personnel within the Wing – before the pilot submitted his report.

With regards to the event itself, the Osprey crew was preparing to land at a small commercial helipad on the North Devon coast. The pilot had elected to deviate to the south to deconflict with a departing RN aircraft; however, in doing so, they received a TCAS contact from what we [USAFE-UK] assume was the PA28. Subsequently, the Osprey pilot manoeuvred east to deconflict with the TCAS contact and to position for their landing at the helipad. While the pilot recollects turning directly left onto east, the radar data appears to show a right-hand long way around turn which brought the two aircraft into proximity with each other. The crew reports that they were aware of a light aircraft as they turned; however, at no stage did anyone aboard the Osprey consider there to be any risk of collision. As already stated, unfortunately we [USAFE-UK] have been unable to confirm any further details with the pilot; however, with the event being some months in the past it is doubtful whether they would now be able to add anything to their report. As always, the HNCC will ensure that any findings or recommendations from the UKAB are fed back to US Visiting Forces as promptly as possible.

Summary

An Airprox was reported when a PA28 and an Osprey flew into proximity 8NM north of Bude at 1453Z on Monday 18th May 2020. Both pilots were operating under VFR in VMC. The PA28 pilot was in receipt of a Basic Service from Exeter; it was not possible to determine if the Osprey pilot was in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities. 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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided dial-in/VTC comments. Although not all Board members were present for the entirety of the meeting and, as a result, the usual wide-ranging discussions involving all Board members were more limited, sufficient engagement was achieved to enable a formal assessment to be agreed along with the following associated comments.

The Board first heard from the USAFE-UK advisor that the inconsistencies between the Osprey pilot's report and the radar data were likely attributable to the length of time between the event occurring and the unit being informed of the event. Unfortunately, the pilot had since been re-assigned and was therefore no longer available to clarify certain aspects in their report. The report was submitted to the UKAB some 4 weeks after the Airprox occurred, and further delays incurred while the nature of the second aircraft was established (the PA28 pilot had reported sighting a 'drone' 3 times on the same sortie, but there were no notifications of drone activity published for the times and locations reported). The Board wished to highlight the importance of prompt filing of Airprox reports, because the memories of others involved are perishable and radar and RT data may no longer be available beyond 30 days from the date of the event.

Turning to the actions of the pilots involved, members discussed the opportunities for either pilot to have gained situational awareness of each other's aircraft and wondered if the PA28 pilot may have been better served in seeking a surveillance-based ATS from Newquay radar. Furthermore, although it could not be determined whether or not the Osprey pilot was in receipt of an ATS, members opined that a call to Exeter or Newquay from the Osprey pilot may have been beneficial to the situational awareness of controllers and, potentially, any pilots to which they had been providing a service. In the event, the PA28 pilot had not had any situational awareness on the presence of the Osprey (**CF2**), although the Osprey pilot had gained situational awareness on the PA28 via their TCAS equipment (**CF2**, **CF3**). The Board agreed that the PA28 pilot had been visual with the Osprey for some time while both aircraft had been tracking south but, when the Osprey pilot unexpectedly executed a 270° turn in front of them, they had become concerned by the proximity of the Osprey (**CF4**).

Members then briefly discussed the actions of the Exeter controller, and quickly agreed that there was little that they could have done to alert the PA28 pilot to the presence of the Osprey. Acknowledging that the controller had not been required to monitor the PA28 under the terms of the Basic Service (**CF1**), and without radar recordings from Exeter to review because they had been unavailable due to the passage of time since the event, the Board nonetheless felt that, at the range from the Exeter radar head of the reported Airprox, it would have been unlikely that either aircraft would have been displayed on the Exeter controller's radar screen.

Finally, the Board considered the risk involved in this event. Members noted a considerable discrepancy between the reported separation distances from both pilots and wondered if the fact that the PA28 pilot had initially identified the Osprey as a 'drone' had led them to misjudge the distance between the 2 aircraft. That said, the Board was fortunate that the NATS radar replay was available and both aircraft were recorded, enabling the actual separation of the 2 aircraft to be measured. Members also took into account the relative speeds of the aircraft involved and the fact that the PA28 pilot had been visual with the Osprey throughout the southbound leg and during its turn onto an easterly heading. Members therefore felt that there had been no risk of collision and that normal safety standards and parameters had pertained; Risk Category E.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2020052		
CF	**Factor**	**Description**	**Amplification**
	Ground Elements		
	• Situational Awareness and Action		
1	Contextual	• ANS Flight Information Provision	Not required to monitor the aircraft under the agreed service
	Flight Elements		
	• Situational Awareness of the Conflicting Aircraft and Action		
2	Contextual	• Situational Awareness and Sensory Events	Pilot had no, late or only generic, Situational Awareness
	• Electronic Warning System Operation and Compliance		
3	Contextual	• ACAS/TCAS TA	
	• See and Avoid		
4	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: E

Safety Barrier Assessment[6]

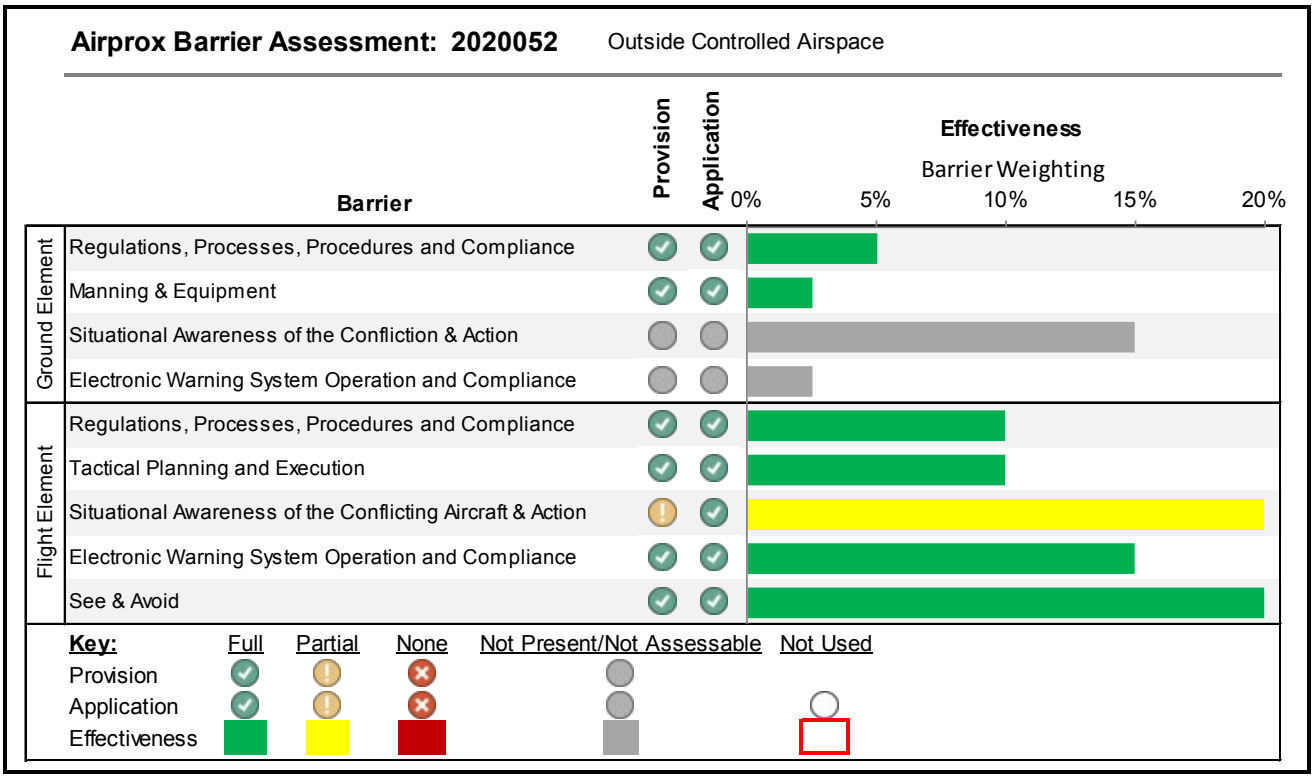
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **not used** because the Exeter controller was not required to monitor the PA28 under the terms of a Basic Service.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the PA28 pilot had no awareness of the presence of the Osprey, and the Osprey pilot was receiving only generic SA from his TCAS which was not specific enough to enable the crew to become visual with the PA28 until after CPA.



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