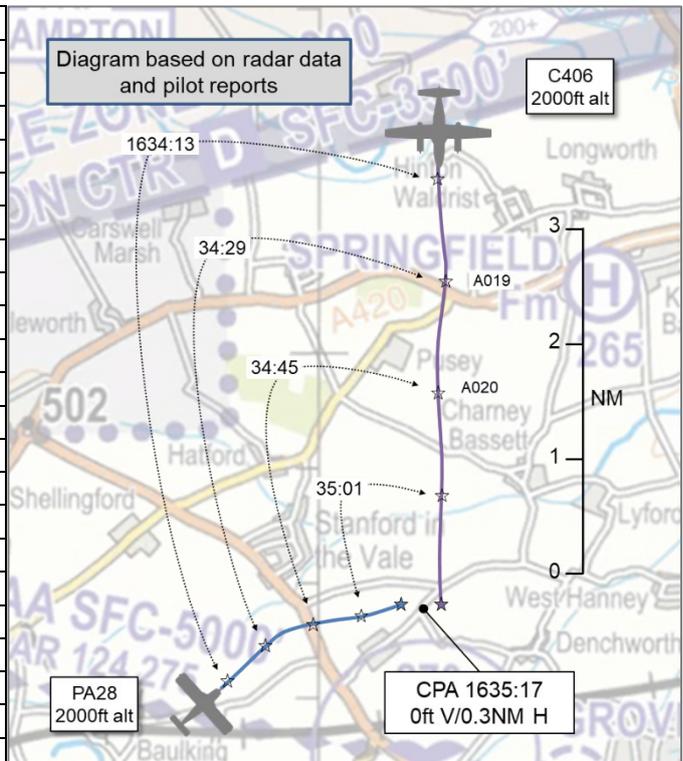


**AIRPROX REPORT No 2022008**

Date: 02 Feb 2022 Time: 1635Z Position: 5138N 00129W Location: 2.5NM NW Wantage

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	F406
Operator	Civ FW	Civ Comm
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Traffic
Provider	Brize Zone	Brize Zone
Altitude/FL	2000ft	2000ft
Transponder	A, C, S	A, C, S
<b>Reported</b>		
Colours	White, Red	White, Purple
Lighting	Nil	Nav, Strobe
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2000ft	2000ft
Altimeter	QNH (1022hPa)	QNH (NK hPa)
Heading	080°	South
Speed	75kt	205kt
ACAS/TAS	SkyEcho	Not fitted
Alert	None	N/A
<b>Separation at CPA</b>		
Reported	0ft V/300m H	Not seen
Recorded	0ft V/0.3NM H	



**THE PA28 PILOT** reports that they were conducting a straight-and-level 2 exercise, and had just decelerated from 90kt to 75kt. The aircraft was in a nose-high attitude reducing their visibility to the left from the right-hand seat. Their student called the traffic but they didn't acquire it until it passed ahead of them, co-alt, at about 300m, on a southerly heading. They initially thought it was a Jetstream, and asked Brize Zone if they were working it since it was likely that it had transited the Brize CTR. After some time they received a "negative" reply.

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

**THE F406 PILOT** reports that they were tasked with conducting a survey flight overhead Cowes on the Isle of Wight in a Cessna 406 aircraft [aircraft registration], and at the time they were in transit to the survey site. The direct route would have taken them overhead Oxford, and it was their initial intention to transit at 5000ft QNH. However low cloud necessitated a transit at a lower altitude, initially 2500ft, but further descent became necessary to avoid cloud whilst still north of Brize Zone, initially to 2300ft and then 2000ft, at which altitude they remained until reaching the survey site. In view of the low altitude they altered course to the west in order to avoid overflying Oxford, which they thought might be busy with instrument training traffic, and necessitated a transit of Brize Zone. Initially they were in receipt of a Traffic Service from Brize [LARS] on 124.275MHz, but were handed over to the Brize Zone controller on 119.0MHz for the zone transit. Clearance to transit the zone was given (if they remember correctly it was a clearance not above 2300ft), and transit was completed maintaining 2000ft. They believed at the time that they were under a Radar Control service during the transit, but their recollection of this may be inaccurate. Shortly after exiting the Brize Zone they overheard a radio call to the Brize Zone controller from another aircraft mentioning a "Jetstream" aircraft. They did wonder at the time if it was their aircraft that was being referred to. At no time did they see the other aircraft concerned (the only other aircraft they had seen was in the circuit at Church Enstone airfield north of Brize Zone, which they remained well clear of), and were completely unaware of any Airprox incident. They heard no mention

of an Airprox over the radio, and the Brize controller seemed unconcerned. Shortly after this they changed frequency to Solent Radar for a Traffic Service and Control Zone transit, and gave no further thought to the incident. The first indication that they had of an Airprox incident was when they received an email the following evening.

**THE BRIZE ZONE CONTROLLER** reports that they were bandboxing the RA, Dir and Zone frequencies. At the time they had [PA28 c/s] and [other aircraft 1 c/s], both on a Basic Service, general handling around 10-15NM south of Brize Norton. They also had [other aircraft 2 c/s] on Director frequency climbing into the Gloucester triangle to position for a TALT approach and had been prenoted [other aircraft 3 c/s] for recovery from Swanwick Mil. [The F406 pilot] was handed over by LARS with a request to cross Brize Zone Class D airspace roughly 15NM north of the airfield under a Traffic Service outside controlled airspace. A VFR crossing clearance was given on their requested route (north-to-south around 5NM east of the overhead) not above altitude 2300ft QNH.

Shortly after [the F406] had entered the Brize zone, Swanwick Mil called to handover [other aircraft 3 c/s] for an IFR recovery. After the handover phone call they informed [other aircraft 2 c/s] that the [other aircraft 3] was shortly coming inbound and that they would be number 2 behind. [Other aircraft 2 c/s] asked the range of the [other aircraft 3] which they gave as 15 miles NW of [other aircraft 2] about to come onto frequency. [Other aircraft 3 c/s] then came onto the Director frequency and was identified. Following this recovery instructions were issued and further descent.

[The PA28 pilot] called to ask if, what they believed to be a Jetstream, had just passed ahead of their nose. Upon checking where [the PA28] was, they could see no A/C in the vicinity bar, what they believed to be, radar clutter nearby and [the F406] around 4NM south and behind their primary trail. As [the PA28 pilot] had called the traffic as a Jetstream they did not believe it was [the F406].

They believe that whilst being handed [other aircraft 3 c/s] for recovery and speaking to [other aircraft 2] they had been 'sucked into' their position 25NM NW of Brize Norton which could be the cause for their not giving Traffic Information to [the F406 pilot] and [the PA28 pilot] as [the F406] passed in front.

The controller perceived the severity of the incident as 'Medium'.

**THE BRIZE SUPERVISOR** reports that at the time of the incident they were taking over as Supervisor and going through the handover process. The Airprox was not declared at the time of the incident. The controller did not make them aware of any incident.

## Factual Background

The weather at Brize Norton was recorded as follows:

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METAR EGVN 021620Z 25004KT 9999 BKN027 SCT150 BKN210 12/07 Q1022 TEMPO BKN024 RMK BLU
TEMPO WHT
METAR EGVN 021650Z 25003KT 9999 BKN028 SCT210 11/06 Q1021 NOSIG RMK BLU BLU
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## Analysis and Investigation

### Brize Norton ATSU Occurrence Investigation

An investigation was carried out by the Brize Norton ATSU, the findings of which are summarised here.

- The transit aircraft passed close in-front of [an aircraft in receipt of] Basic Service general handling, controller did not pass Traffic Information to either aircraft.
- The controller was distracted by the traffic situation to the north west - receiving a handover from Swanwick Mil, passing Traffic Information to [other aircraft 2 pilot] operating in the same area, then identifying the aircraft that was handed over [other aircraft 3] and answering a query from the [other aircraft 2 pilot].

- The Supervisor was in the process of handing over. This prevented them from monitoring the situation as they normally might, potentially advising the controller of the confliction early. A handover is necessary to ensure all relevant information is passed between shifts.
- It is routine for the 3 positions to be band-boxed by the Radar/Approach controller especially at that time of day if the programme is judged to be light on traffic. On this occasion, [the PA28 pilot] was general handling under a Basic Service, [other aircraft 2] was in the Gloucester Triangle and [other aircraft 3] was pre-noted in, which is not a stretch for the controller involved. The addition of a Traffic Service transit pushed them a little, but the crossing was approved with no traffic to affect in the CTR. Had a Zone or Director controller been requested at this time, the subsequent handover of position would have been delayed due to the handover of [other aircraft 3] and the Airprox may have occurred before it could be completed.
- The Supervisor (ATCO IC) was also the only other person on shift at that time that had the appropriate endorsements to be able to take-over from the Radar-Approach controller.

### Military ATM

The Brize Zone controller was bandboxing Zone with the Approach and Director task with up to 4 aircraft under their control at any one time prior to and during the Airprox. The controller took over control of the F406 from the LARS controller as it would require to transit the Brize CTR which was approved by the Zone controller once they were on frequency. During the CTR transit, the Zone controller took the handover on another aircraft from Swanwick Mil that was recovering to Brize Norton. Immediately after the handover, prior to the aircraft checking in on frequency, the Zone controller advised another aircraft looking to recover to Brize that they would be number 2 to the first. Due to the exchanges being passed between the controller and the aircraft, the F406 pilot did not have their Air Traffic Service changed on leaving the CTR nor was Traffic Information passed to either the F406 or the PA28.

Figures 1–5 show the positions of the PA28 and F406 at relevant times during the Airprox. The screenshots were taken from a replay using the NATS radars which are not utilised by the Brize controller, therefore, may not be entirely representative of the picture available.

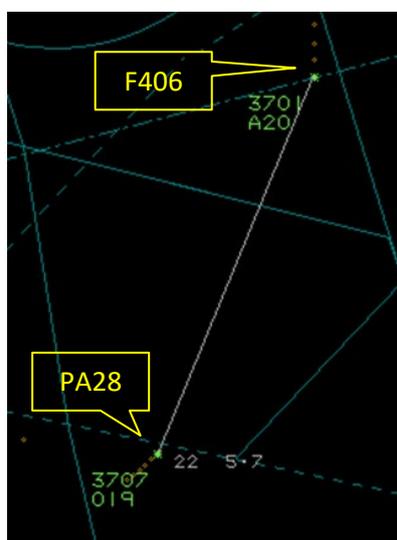


Figure 1 - F406 leaving the Brize CTR.

Immediately prior to the F406 leaving the Brize CTR, the Zone controller was completing a handover of another aircraft on recovery to Brize. On completion of the handover the Zone controller advised a second aircraft that was positioning for a tactical approach to Brize Norton that they would be positioned behind the aircraft they had taken the handover for. Separation was 5.7NM and 100ft.

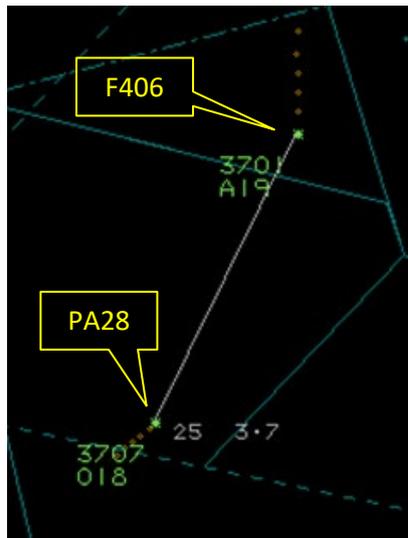


Figure 2 - Exchange between Zone controller and radar traffic complete.

Over the course of the 25sec from the handover from Swanwick Mil, the Zone controller was engaged in an exchange with another aircraft. Separation decreased to 3.7NM and 100ft.

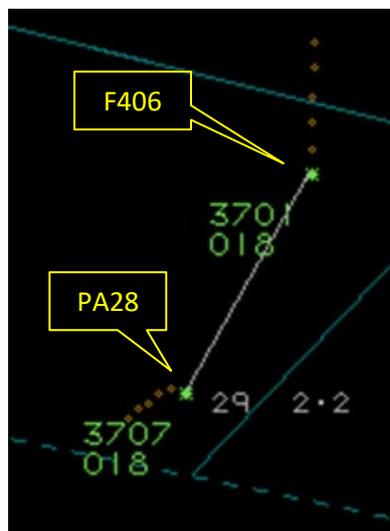


Figure 3 - Zone Controller took control of other radar traffic.

Following on from the exchange with the other radar traffic, the Zone controller then identified the aircraft handed over from Swanwick Mil [other aircraft 3]. The aircraft pilot was given control instructions and the information code was updated. Separation decreased to 2.2NM and 0ft.

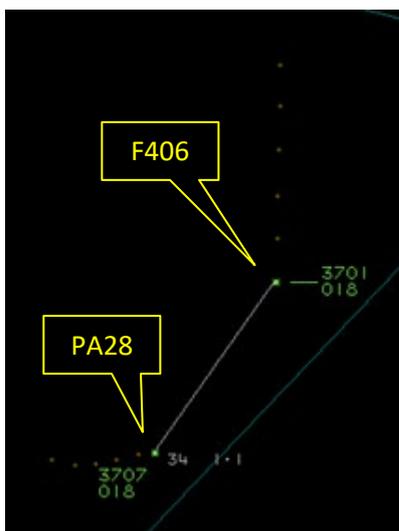


Figure 4 - Further exchanges with unrelated radar traffic.

The Zone controller had further exchanges with the radar traffic. Separation decreased to 1.1NM and 0ft.



Figure 5 - CPA.

Fifteen seconds later the Zone controller passed Traffic Information to another aircraft that was 10NM away from their location. CPA occurred at the same time between the F406 and the PA28. Separation was 0.3NM and 0ft.

The Zone controller appeared to be entirely focused on managing their radar recoveries and did not adequately divide their attention between all their aircraft. The F406 pilot should have had their ATS downgraded from a Radar Control service when leaving the CTR however, due to exchanges with two other aircraft, this was missed. The lack of division of attention also resulted in no Traffic Information being passed to either the F406 or the PA28 pilots, both of whom were under the control of the Zone Controller. The Supervisor was mid-handover and therefore was not monitoring the situation as they deemed the traffic loading and combination of tasks appropriate for the task and experience of the controller.

### UKAB Secretariat

The PA28 and F406 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>1</sup> If the incident geometry is considered as converging then the F406 pilot was required to give way to the PA28.<sup>2</sup>

<sup>1</sup> (UK) SERA.3205 Proximity.

<sup>2</sup> (UK) SERA.3210 Right-of-way (c)(2) Converging.

## Summary

An Airprox was reported when a PA28 and a F406 flew into proximity 2.5NM NW of Wantage at 1635Z on Wednesday 2<sup>nd</sup> February 2022. Both pilots were operating under VFR in VMC, the PA28 pilot in receipt of a Basic Service from Brize Zone and the F406 pilot in receipt of a Traffic Service from Brize Zone.

### **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 controllers involved and reports from the appropriate 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.

The Board first considered the actions of the PA28 pilot and had been encouraged by their actions and by the fact that they had been carrying additional EC equipment however, on this occasion it had not generated an alert regarding the proximity of the F406 when it would have expected to have done so (**CF7**). A discussion was held regarding whether the pilot could have requested a higher level of service and the Board concluded that the level of service that the pilot had requested from Brize Norton had been appropriate. Members agreed that the PA28 pilot had had no prior awareness of the presence of the F406 (**CF6**) and, whilst the PA28 pilot did become visual with the F406, it was at a late stage (**CF8**) which would have made it difficult for the pilot to have taken effective avoiding action and, as such, the pilot had been concerned by the proximity of the F406 (**CF10**). The Board commended the PA28 pilot for engaging with Brize Zone controller about the event on the radio however members stated that it had been unfortunate that the pilot had misidentified the aircraft type.

Members next discussed the actions of the F406 pilot noted that the pilot had been on a surveillance based service from ATC although it was agreed that despite this, the pilot had had no prior knowledge regarding the presence of the PA28 (**CF6**) and had not become visual with it at any point (**CF9**). The Board was also encouraged by the level of transponder equipment carried by the F406 pilot and was further encouraged to hear from a civilian pilot Board member that it is their understanding that the F406 operating company is in the process of equipping their fleet with additional EC equipment.

Members then turned their attention to the actions of Brize Norton ATC and noted that the controller had been busy at the time of the Airprox and that the Supervisor had been in the midst of a hand over. Members agreed with the Brize Norton ATSU occurrence investigation finding that the Supervisor handover had prevented them from monitoring the situation as the normally might (**CF2**). An ATC member commented that the F406 pilot had made a contact with the Brize Zone controller and that the controller had not fulfilled their part as Traffic Information had not been passed to the F406 pilot (**CF1**, **CF3**) and, although the PA28 pilot had been under a Basic Service, it would have been reasonable for them to have received Traffic Information regarding the F406 also. Members agreed that the controller had been overly focussed on the radar recovery traffic (**CF5**) and that they should have given due attention to the provision of service to other traffic on frequency, and that this had contributed toward them not detecting the conflict between the PA28 and the F406 (**CF4**).

Finally, when assessing the risk of the Airprox, the Board considered that neither pilot had had any situational awareness regarding other. Although the PA28 pilot had become visual with the F406, it had been at a late stage giving minimal opportunity to enable them to take avoiding action should they have deemed it necessary. Members agreed that there had been a risk of collision (**CF11**) and that safety had been much reduced. Accordingly, the Board assigned a Risk Category B to this Airprox.

**PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK****Contributory Factors:**

	2022008			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Ground Elements</b>				
<b>• Regulations, Processes, Procedures and Compliance</b>				
1	Human Factors	• ATM Regulatory Deviation	An event involving a deviation from an Air Traffic Management Regulation.	Regulations and/or procedures not fully complied with
<b>• Manning and Equipment</b>				
2	Human Factors	• ATM Leadership and Supervision	An event related to the leadership and supervision of ATM activities.	
<b>• Situational Awareness and Action</b>				
3	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
4	Human Factors	• Conflict Detection - Not Detected	An event involving Air Navigation Services conflict not being detected.	
5	Human Factors	• Task Monitoring	Events involving an individual or a crew/team not appropriately monitoring their performance of a task	Controller engaged in other tasks
<b>Flight Elements</b>				
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
6	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
<b>• Electronic Warning System Operation and Compliance</b>				
7	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
<b>• See and Avoid</b>				
8	Human Factors	• Identification/Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
9	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots
10	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
<b>• Outcome Events</b>				
11	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

**Degree of Risk:****B**

### Safety Barrier Assessment<sup>3</sup>

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

#### Ground Elements:

**Regulations, Processes, Procedures and Compliance** were assessed as **ineffective** because Traffic Information had not been passed to the F406 pilot regarding the PA28.

**Manning and Equipment** were assessed as **partially effective** because Supervisor handover had prevented them from monitoring the situation as they normally might.

**Situational Awareness of the Confliction and Action** were assessed as **ineffective** because the controller had been engaged in other tasks and had not detected the conflict and Traffic information had not been passed to the F406 pilot

#### Flight Elements:

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot had had any prior awareness of the presence of the other aircraft.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the EC equipment that had been carried by the PA28 pilot had not alerted to the presence of the F406 when it would have been expected to have done so.

Airprox Barrier Assessment: 2022008		Outside Controlled Airspace						
Barrier	Provision	Application	Effectiveness					
			Barrier Weighting					
			0%	5%	10%	15%	20%	
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✗					
	Manning & Equipment	✓	⚠					
	Situational Awareness of the Confliction & Action	✓	✗					
	Electronic Warning System Operation and Compliance	⊙	⊙					
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Tactical Planning and Execution	✓	✓					
	Situational Awareness of the Conflicting Aircraft & Action	✗	✓					
	Electronic Warning System Operation and Compliance	⚠	✗					
	See & Avoid	✓	✓					
<b>Key:</b>								
Provision	✓	⚠	✗	⊙				
Application	✓	⚠	✗	⊙				
Effectiveness								

<sup>3</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).