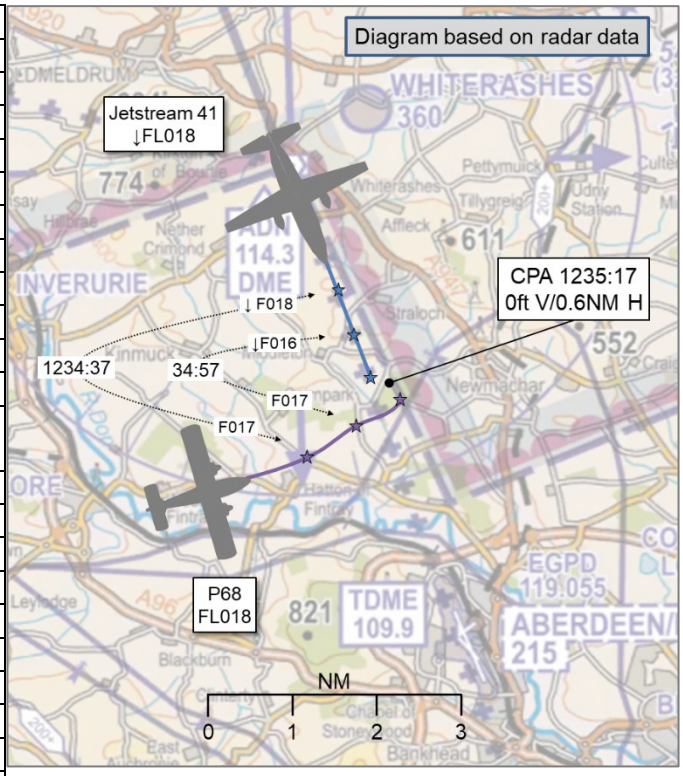
AIRPROX REPORT No 2021187

Date: 17 Sep 2021 Time: 1235Z Position: 5715N 00214W Location: 2.5NM N Aberdeen

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Jetstream 41	P68
Operator	CAT	Civ Comm
Airspace	Aberdeen CTR	Aberdeen CTR
Class	D	D
Rules	IFR	VFR
Service	ACS	ACS
Provider	Aberdeen	Aberdeen
Altitude/FL	FL018	FL018
Transponder	A, C, S	A, C, S
Reported		
Colours	White, Blue	White, Blue
Lighting	Strobes, Landing Conspicuity	Anti-Cols, Nav
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1000ft	1500ft
Altimeter	QNH (1009hPa)	QNH (1010hPa)
Heading	160°	NE
Speed	115kt	110kt
ACAS/TAS	TCAS II	Not fitted
Alert	RA	N/A
Separation at CPA		
Reported	100ft V/0.5NM H	0ft V/ NK
Recorded	0ft V/0.6NM H	



THE JETSTREAM 41 (J/S41) PILOT reports that when on final they were told about traffic positioning behind, a light aircraft right downwind for RW16. They were established on the ILS. When cleared to land they were again told about the aircraft positioning behind. The other pilot confirmed they had visual contact. At around 1000ft Rad Alt they saw the other aircraft closing from above with a descending right turn, ATC asked the aircraft to confirm they were still positioning behind. At this point they received a TA showing the aircraft 100ft above and descending. A collision seemed inevitable and they elected to go around as the safest option, at this point the other aircraft was straight ahead turning through the final approach track. They decided to go around as they were unsure of the P68 pilot's intentions. A go-around was initiated and a slight right turn made to avoid. During the go-around they received a 'Climb' RA and the other aircraft appeared below and to their left. They were then vectored for another ILS approach.

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

THE P68 PILOT reports that they were orbiting at Kintore. They were asked to report visual with the [J/S41 company], but were not visual at that time. The orbits were cancelled and they were told to report final No3, No2 to an [J/S41 company] aircraft. While rolling out, the pilot saw what they believed to be the [J/S41 company] directly ahead. However, when about to turn final, the pilot saw an aircraft, now believed to be the aircraft nominated by ATC as the [J/S41 company] No2 on final. At this stage, a turn to the left would have placed the aircraft on a head-on course with the other aircraft and a turn to the right would have placed the aircraft ahead of the other aircraft on final, (in both these cases, the P68 would have continued turning to clear the area). The simplest and most effective way of avoiding the other aircraft at this stage, and clearing the area, was to cross the ILS RW16 centreline.

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

THE ABERDEEN CONTROLLER reports that the J/S41 was No1 for RW16. The [P68 C/S] was continuing to right-base and was told they were No2. The [P68 C/S] pilot reported visual and was told to position behind. Whilst the [J/S41 C/S] was at 4NM the P68 crossed final approach ahead to loop and position behind. This was not the clearance given and no instruction was given for the P68 to cross final approach at any time. The [J/S41 C/S] pilot informed them that they were going around and were given standard missed approach instructions.

Factual Background

The weather at Aberdeen was recorded as follows:

```
EGPD 171220Z 17012KT 9999 FEW021 19/14 Q1010 NOSIG
```

Analysis and Investigation

NATS Investigation

[P68 C/S] was inbound to Aberdeen airport on the Inverurie Lane Entry/Exit Route and operating on a VFR clearance not above 2000ft QNH. [J/S41 C/S] was also inbound to Aberdeen airport and conducting an ILS approach to RW16. The pilot of [P68 C/S] had been instructed by the Tower controller (ADC) to hold overhead Kintore (5NM northwest of Aberdeen airport) in a right hand orbit. It was the controller's intention to sequence [P68 C/S] behind [J/S41 C/S] which was 12NM from touchdown. At this time an EMB45 was also conducting an ILS approach to RW16 and was 3NM from touchdown.

1231 - ADC: "[P68 C/S] *continue orbit, just becoming number three, number two is a Jetstream 41 at 12 miles, report in sight*".
[P68 C/S]: "*Wilco*."
ADC: "[J/S41 C/S] *continue approach, as you get closer, PA68 right hand side will position behind VFR*".
1233:10 – No1 aircraft landed and [P68 C/S] continued in a right hand orbit.
ADC: "[P68 C/S] *the Jetstream 41 you're looking for is 10 o'clock, 4 miles 2500ft, are you visual*?"
[P68 C/S]: "*Negative*."
ADC: "[P68 C/S] *your orbit is cancelled, you can route right base RW16, report the Jetstream in sight*".

At this time [P68 C/S] was in a right hand turn approximately passing through east. The aircraft was then observed to immediately roll out of the orbit and tracked southeast towards right base RW16. At this point [J/S41 C/S] was 6NM from touchdown.

At **1234:09** the pilot of [P68 C/S] reported becoming visual with the traffic but the ADC was engaged in a phone call with the Approach Radar controller (Figure 1).

Figure 1

1234:27 ADC: "[P68 C/S] *did you say you were visual*?"
[P68 C/S]: "*Affirm, visual with the traffic*."
ADC: "*Position number 2, Runway 16*."

This was correctly read back by the pilot (Figure 2).

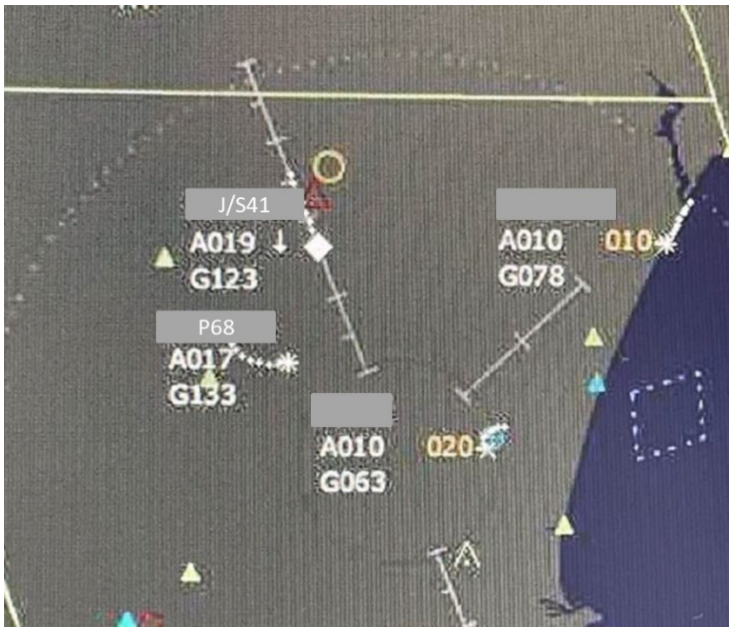


Figure 2

At 1234:30 [P68 C/S] was 0.5NM west of the final approach track, abeam 3NM final approach position. [J/S41 C/S] was approximately 5NM from touchdown. [P68 C/S] commenced a slight left turn to the northeast, appearing to position behind [J/S41 C/S].

ADC: "[J/S41 C/S] *just to confirm for you, the PA68 has you in sight positioning behind*."
[J/S41 C/S]: "*That's understood*."

The separation between the two aircraft was 1.4NM/0ft with [J/S41 C/S] tracking 160° with groundspeed of 106kts and [P68 C/S] tracking 060° and groundspeed of 132kt (Figure 3).

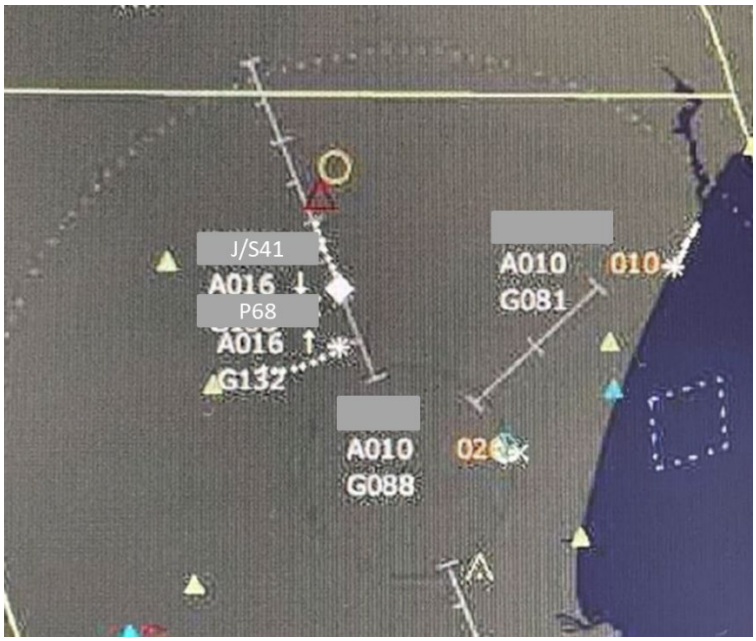


Figure 3

1234:45 - [P68 C/S]'s left turn stopped and the aircraft tracked east towards the ILS final approach track. The Mode C of both aircraft indicated 1600ft.

1235:08 - ADC attempted to make a transmission to resolve the confliction but this was blocked by a call from the pilot of [J/S41 C/S].
[J/S41 C/S]: "*Just going around*".

[J/S41 C/S] was at 1500ft tracking 160° at 110kts while [P68 C/S] was at 1700ft tracking 060° at 126kts. Separation was now 0.87NM/200ft with [P68 C/S] flying through the final approach track in front of [J/S41 C/S] (Figure 4).

Figure 4

ADC: "[P68 C/S] *I thought you said you were visual with the Jetstream positioning behind*?"
[P68 C/S]: "*Affirm, visual, just positioning behind now*."
ADC: "*They are going around now, you are not meant to fly over someone when they are on final approach*."
[P68 C/S]: "*Roger*."

Figure 5

Both aircraft subsequently completed safe approaches and landings on RW16.

The pilot of [P68 C/S] provided the following feedback points:
- They had misidentified the aircraft they were supposed to be following and hence flew towards the final approach in front of [J/S41 C/S].
- By the time they had seen the Jetstream and realised that was the aircraft they should be following, they felt that continuing a left orbit to pass west of the Jetstream and then behind would have been a safety issue and so they elected to pass through the final approach.

The crew of [J/S41 C/S] reported:
- The pilots remembered being told the Traffic Information on [P68 C/S] and that it would be positioning behind them.
- They could see [P68 C/S] on their TCAS screen and then saw [P68 C/S] visually out to the right and above, turning in front of them and descending "towards the airport".
- The crew assessed that [P68 C/S] passed in front of them by less than a mile and slightly above.
- They then received a TCAS TA and elected to perform a go-around. During the go-around the TA became an RA to continue climb. The pilots reported that they continued to see the [P68 C/S] pass through the final approach track eastbound, now down to their left and below them.

TRAFFIC PICTURE

The pilot of [P68 C/S] reported visually acquiring an aircraft they believed to be the one they should have been following. Whilst still orbiting at Kintore the Traffic Information passed by ADC to [P68 C/S] clearly stated that the J/S41 they were to follow was in the pilot's 10 o'clock position. Although the aircraft being in the turn at the time would have meant the clock code bearing was of limited currency especially with [P68 C/S] turning away from the stated position, there were no other aircraft on that bearing that could have been mistaken for [J/S41 C/S] by the pilot of [P68 C/S]. The first “visual” report was received at 1234:09 when the preceding IFR arrival, the EMB45 had landed at 1233:10.

CONTROLLER FEEDBACK

In a discussion with ADC, the following points were noted:
- The controller didn't feel the pilot of [P68 C/S] was too familiar with the local airspace and geography. As a result they elected to hold the P68 at Kintore rather than bring the aircraft closer to the airfield and final approach track.
- ADC noted [P68 C/S] drifted slightly closer to the final approach track than anticipated when holding at Kintore.
- In order to further 'declutter' the visual circuit to provide the most straightforward traffic situation, ADC elected to hold two helicopters to the east of the airfield - one at the Perwinnes Radar head (2.5NM east of the airport) and one offshore at Balmedie 5NM northeast of the airfield.
- When clearance to join in right base was given to the pilot of [P68 C/S], ADC didn't expect them to roll out of the right hand orbit with a left turn to position onto base-leg. The controller had expected the pilot would complete a full orbit and continue onto base-leg.
- Due to the presence of the northern edge of the Tyrebagger ridge to the northwest of the airfield, ADC couldn't visually monitor the position of [P68 C/S] when the aircraft was holding at Kintore (a clear picture was available on the Aerodrome Traffic Monitor). However, once the aircraft had rolled out of the orbit and onto right base, ADC could see both [P68 C/S] and [J/S41 C/S].
- It was while ADC was visually monitoring the position of both aircraft that they became concerned with the track of [P68 C/S] and sought confirmation that the pilot was visual with [J/S41 C/S].
- The controller tried to intervene but their first transmission crossed and the next message received was from the pilot of [J/S41 C/S] reporting going around. At this point ADC confirmed that [P68 C/S] was east of the RW16 extended centreline.
- Despite the fact ADC believed the pilot of [P68 C/S] may have been unfamiliar with local airspace, the controller did not expect the pilot to position the aircraft behind [J/S41 C/S] in the way that they did.

CONCLUSION

ADC passed appropriate Traffic Information to the pilots of both aircraft in order to allow the crew of [P68 C/S] (and of lesser importance, [J/S41 C/S]) to visually acquire the other aircraft, which from initial RT reports was successfully achieved. Although the pilot of [P68 C/S] reported having mis-identified the traffic they had been instructed to follow, it was not clear exactly which aircraft they were following as the preceding arriving aircraft (EMB45) was 10NM ahead of [J/S41 C/S] and the two helicopters holding to the east of the airfield were also in significantly different positions in terms of bearing and distance from that of [J/S41 C/S].

The crew of [J/S41 C/S] and belatedly, the pilot of [P68 C/S], became visual with the other aircraft (when the orbit was cancelled on [P68 C/S] the pilot had not reported visual with [J/S41 C/S], but did so shortly afterwards). The Tower controller was also visual with both aircraft from the point [P68 C/S] was established on right base. Having received confirmation from the pilot of [P68 C/S] that they were visual with No1 and having passed appropriate Traffic Information to the crew of [J/S41 C/S], the Tower controller believed the situation had been satisfactorily resolved. However as [P68 C/S] was observed to be continuing towards the final approach track and converging with [J/S41 C/S], the controller attempted to intervene. This transmission crossed with that of another aircraft, possibly that of [J/S41 C/S] as the pilot reported going around immediately after the crossed transmission having received a TCAS warning against [P68 C/S], which they were visual with at that stage.

UKAB Secretariat

The J/S41 and P68 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] An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation.[2]

Summary

An Airprox was reported when a J/S41 and a P68 flew into proximity at Aberdeen at 1235Z on Friday 17th September 2021. The J/S41 pilot was operating under IFR in VMC and in receipt of a ACS from Aberdeen. The P68 pilot was operating under VFR in VMC and also in receipt of a ACS from Aberdeen.

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.

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 a combination of written contributions and dial-in/VTC comments.

The Board first looked at the actions of the J/S41 pilot. They were making an ILS approach to Aberdeen and had been told by the controller that the P68 would position behind them. They were therefore unnerved when they saw the P68 appear to be positioning in front of them and received the TCAS TA (**CF11**). Having decided that they didn't know the other pilot's intentions, and concerned by the proximity of the P68, they elected to conduct a go-around (**CF13**). Members thought that the J/S41 pilot had acted appropriately, could not have foreseen that the P68 would position ahead of them and could have done little more in the circumstances.

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

Turning to the actions of the P68 pilot, members noted that having been told to conduct a right-hand orbit at Kintore, the pilot was held in a position that should have allowed them to take stock of the situation prior to joining the circuit. As early as 1231Z they were informed that they were No3 and were to position behind the J/S41, and although two minutes later the Traffic Information on the J/S41 was given as a clock code, still members thought that they had been given enough information to know to position behind it (**CF6**, **CF8**). Furthermore, both pilots were on the same frequency and the P68 pilot should have been able to hear the ATC calls to the other pilot. They wondered whether the P68 pilot was unfamiliar with Aberdeen operations, they were operating in Class D airspace at a busy airfield and should have ensured that they were familiar with Aberdeen procedures. Noting that the Aberdeen report mentioned that the pilot may have mis-identified the landing EMB for the J/S41, members felt that the two aircraft looked very different and thought this should not have been an issue for the P68 pilot, nevertheless they highlighted that if at all unsure pilots should request more information from ATC, rather than pressing on with flawed situational awareness (**CF9**, **CF10**). Once the P68 pilot had started to incorrectly position in front of the J/S41, their options became limited, however in choosing to go directly in front of the other aircraft at the same level members thought that the pilot had flown close enough to cause the other pilot concern (**CF12**) and wondered why they had not climbed to increase the vertical separation (**CF7**). Once again members thought that a call on the RT may have at least reassured the J/S41 pilot that they were visual with it and they could have told the other pilot, and ATC, what they intended to do next, eliminating any element of doubt (**CF9**). Members opined that ultimately the pilot was told by ATC to position behind the J/S41 and did not do so (**CF5**).

The Board then looked at the actions of the Aberdeen controller. Some members wondered whether in holding the P68 at Kintore, the controller had positioned it too close to the circuit. However, they heard from members familiar with operations at Aberdeen that Kintore was a standard place to hold aircraft and that putting the P68 in a right-hand orbit should have enabled the P68 pilot to see the J/S41 on the approach. Noting that the controller passed Traffic Information as a clock code, members thought that this was not as accurate as it could have been to a pilot in an orbit (**CF1**). Furthermore, some members wondered whether the controller cancelled the P68's orbit prematurely; the controller asked whether the pilot was visual with the J/S41 and the pilot replied negative, yet was still instructed to cancel the orbit and route to right-base. However, others countered that with the P68 in the right-hand orbit, and having clearly stated that the P68 pilot was No2 to the J/S41, the controller would have expected the pilot to continue the right-hand orbit to position behind, not immediately turn onto final (**CF3**, **CF4**). With the inaccurate mental model that the P68 was positioning behind the J/S41 the controller did not detect the conflict until the same time as the J/S41 pilot had started their go-around (**CF2**).

In determining the risk, members looked at the reports of the pilots and controller and the radar replay screenshots. They agreed that because the J/S41 pilot was visual with the P68 throughout, and the P68 pilot was visual with the J/S41 once they had turned onto base, although uncomfortable for the J/S41 pilot, there had been no risk of collision. Despite this, they agreed that safety had been degraded and therefore assigned a Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021187			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
2	Human Factors	• Conflict Detection - Detected Late	An event involving the late detection of a conflict between aircraft	
3	Human Factors	• Expectation/Assumption	Events involving an individual or a crew/ team acting on the basis of expectation or assumptions of a	

			situation that is different from the reality	
4	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, inaccurate or no Situational Awareness
	Flight Elements			
	• Regulations, Processes, Procedures and Compliance			
5	Human Factors	• Flight Crew ATC Clearance Deviation	An event involving a deviation from an air traffic control clearance.	
	• Tactical Planning and Execution			
6	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
7	Human Factors	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
	• Situational Awareness of the Conflicting Aircraft and Action			
8	Human Factors	• Flight crew response to communications	An event related to the flight crew taking the incorrect action following communication	
9	Human Factors	• Lack of Communication	Events involving flight crew that did not communicate enough - not enough communication	Pilot did not request additional information
10	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			
11	Contextual	• ACAS/TCAS TA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system traffic advisory warning triggered	
	• See and Avoid			
12	Human Factors	• Incorrect Action Selection	Events involving flight crew performing or choosing the wrong course of action	Pilot flew close enough to cause concern
13	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: 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:

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **ineffective** because the controller believed the P68 pilot was visual with the J/S41 and so expected them to sequence behind it.

Flight Elements:

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

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the P68 pilot was told to position No2 behind the J/S41, but did not.

Tactical Planning and Execution was assessed as **partially effective** because the P68 pilot did not sequence correctly behind the J/S41.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the P68 pilot had inaccurate situational awareness on the position of the aircraft they were meant to sequence behind.