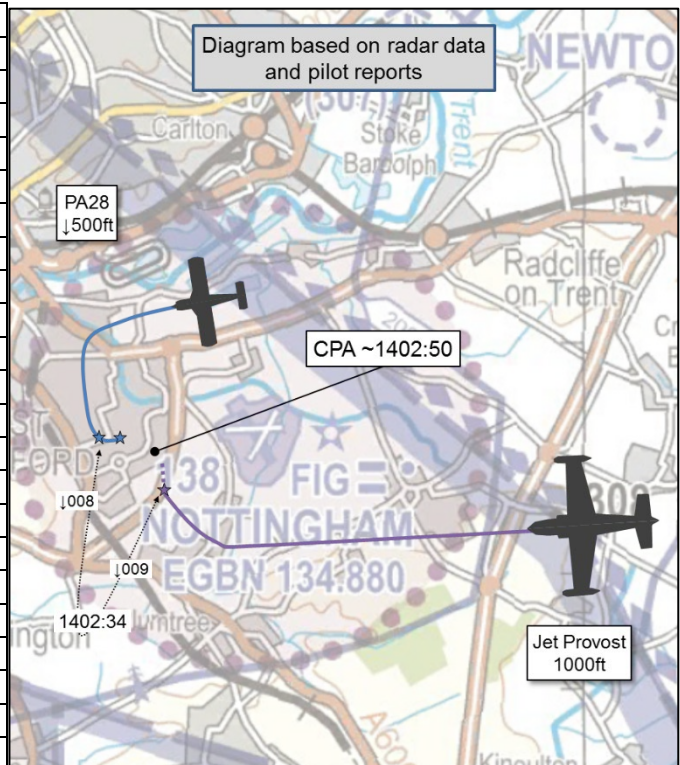


AIRPROX REPORT No 2019287

Date: 21 Sep 2019 Time: 1402Z Position: 5255N 00106W Location: Nottingham

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	Jet Provost
Operator	Civ FW	Civ FW
Airspace	Nottingham ATZ	Nottingham ATZ
Class	G	G
Rules	VFR	VFR
Service	Unknown	AGCS
Provider		Nottingham Radio
Altitude/FL	600ft	
Transponder	A, C, S	A, C
Reported		
Colours	White	Camouflage
Lighting	NR	NR
Conditions	VMC	VMC
Visibility	NR	>10km
Altitude/FL	600ft	1000ft
Altimeter		QFE
Heading	180°	NR
Speed	NR	120kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	'Very Close'	300ft V/1nm H
Recorded	NK	



THE PA28 PILOT reports that the incident occurred whilst he was in the circuit, descending normally on left-base with the student flying. The Jet Provost joined the circuit flying downwind on the deadside then turned sharply onto right-base putting themselves on a collision course with his aircraft, with both aircraft aiming for the same position at the start of final approach. In his opinion, the join was in complete contravention to the AIP entry for EGBN which states 'For noise abatement, join overhead or dead-side only'. The Instructor took control and initiated avoiding action, a descending turn to the right, until the risk of collision was averted, then he performed a standard go-around. The Jet Provost then turned sharply onto final approach, performed a low pass down RW09 and then a steep left-hand climbing turn onto the downwind leg. He opined that there was an immediate high risk of aircraft collision at Tollerton if the Jet Provost continued to operate without regard to circuit direction procedures and without regard to the ab-initio training environment at the airfield.

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

THE JET PROVOST PILOT reports that they reported their position as they approached Tollerton and then reported 'on the deadside turning right onto RW09 to pass over runway at 600ft on QFE', followed by the appropriate downwind and final call. They were informed about 2 aircraft in the circuit and therefore did not join downwind, as their speed downwind was higher than the light-aircraft. They reported their intentions and joined on the deadside at 1000' QFE, 200kt, made a tight right-turn onto RW09 and descended to about 700-800ft at the runway threshold. At the end of the runway, they made a climbing left turn to 1000ft. They flew downwind at 120kt, as slow as possible to keep a safe separation from the aircraft on the base leg. Then extended the downwind leg, turned left and reported long-final following the aircraft ahead on final at least a mile behind. They talked to the radio staff after the flight as usual and nothing was mentioned, no concerns were raised. They were informed by the airport manager the next day that an Airprox was filed. Although Sherwood club were called a number of times and a mobile number left, hoping to discuss their safety concerns, no-one called back.

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

THE NOTTINGHAM AIR GROUND OPERATOR reports that the Jet Provost pilot departed from RW09 and departed to the east, making all the correct RT calls. On his return about 30mins later the pilot made 2 position reports and then reported dead-side. The readability of his radio was only about 3 because of interference. He did not recall seeing the JP enter the circuit, but heard it overhead. He heard the PA28 pilot say over the RT 'do you know there is circuit traffic' and then 'I'm reporting an Airprox'. He saw the JP heading westerly, parallel to the runway and clearly on the deadside. It turned left at the runway intersection and joined crosswind, then flew a normal downwind at the correct height and the A/GO made a call to the circuit traffic that the JP was crosswind and turning downwind. He believed that the JP joined deadside and completed a steep right turn whilst descending in the position right of RW09, but maintaining deadside at the same time that the PA28 was left base.

Factual Background

The weather at East Midlands was recorded as follows:

METAR EGNX 211350Z 12014KT CAVOK 23/08 Q1010=

Analysis and Investigation

UKAB Secretariat

The NATS radars show the two aircraft in the lead-up to the Airprox. At Figure 1, the JP is on the deadside indicating 1000ft, the PA28 is on base-leg indicating 800ft. At 1402:34 (Figure 2) the two aircraft are 0.9nm apart but at the next radar sweep the JP then fades from radar and, shortly afterwards, at 1402:58 the PA28 also fades, therefore the exact radar separation is not known.

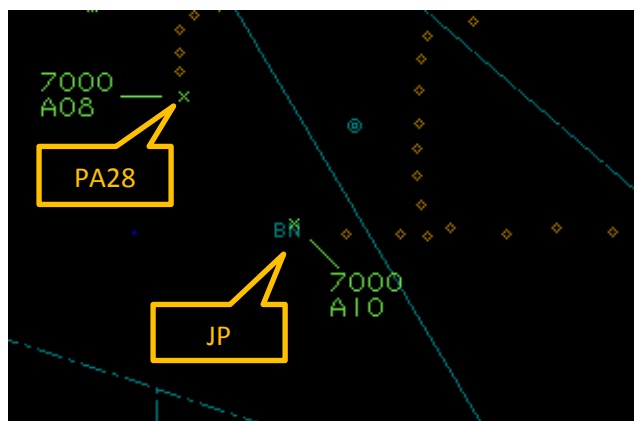


Figure 1 1402:22

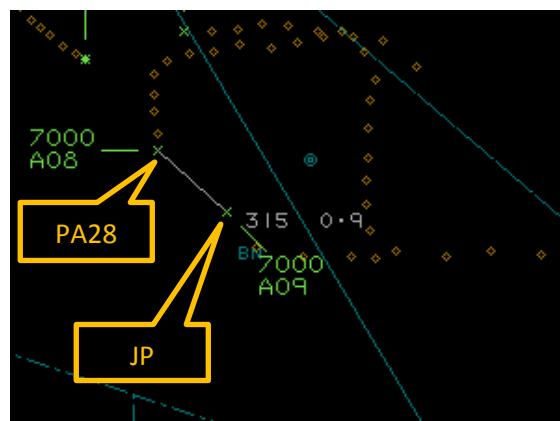


Figure 2 1402:34

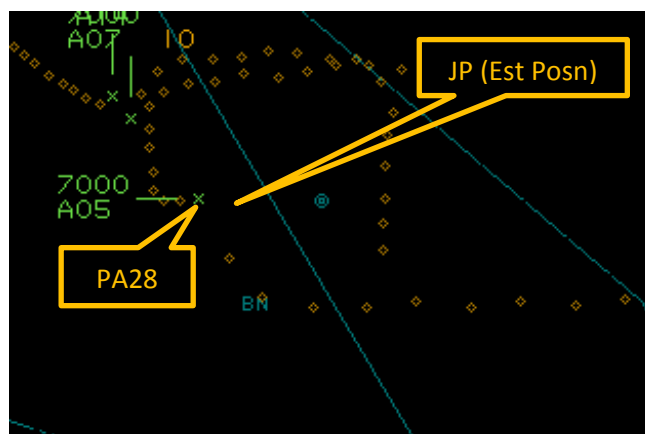


Figure 3 1402:50

The PA28 and Jet Provost 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

Occurrence Investigation

The Nottingham City Airport Safety committee reported that the Jet Provost departed to the east of the airfield and on his return performed a non-standard join. The PA28 pilot believed the risk of collision was high because the Jet Provost made a right-hand turn in the left-hand circuit; however, the PA28 pilot assumed the Jet Provost was on right-base for the runway, rather than setting up to join the circuit. The committee recommended that a notice is added to the AIP entry to advise users that a fast-jet operates out of the airfield. The callsign of the aircraft is pre-fixed with 'Jet Provost' to advise other airfield users that there is a fast-jet present. Posters/notices are created and placed in the flying schools warning that the Jet Provost is faster than normal circuit traffic and courtesy should be given when it is joining the circuit. The Jet Provost should be encouraged to join the circuit overhead, downwind or on base-leg and that orbiting outside the ATZ in order to better synchronise with any circuit traffic could allow for safer entry into the circuit.

Summary

An Airprox was reported when a PA28 and a Jet Provost flew into proximity in the Tollerton visual circuit at 1402hrs on Saturday 21st September 2019. Both pilots were operating under VFR in VMC, both in receipt of a AGCS with Tollerton.

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 a combination of written contributions and 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 looked at the actions of the Jet Provost pilot. They had joined the circuit for what military members considered to be a 'run-and-break'. However, those with fast-jet experience commented that, at military airfields, the turn-in for a fast-jet run-and-break would take place much further away from the circuit, with a notional 'initials' point 2nm on the extended centre-line, offset 100m or so to the dead-side. A 2nm stable run-in then allows the pilot time to identify all of the circuit traffic before they enter the circuit and to subsequently integrate and join safely downwind (**CF4**). Offsetting 100m or so deadside during the run-in is also important because, if any traffic is not identified then the fast-jet is not flying the same track as those on final; flying along the final track and then the runway during the run-in for the break is highly ill-advised for that reason. In this case, by joining through what was effectively right base in a continuous turn, belly-up to base-leg and final traffic to run-in along the runway, the pilot did not have the time or ability (due to obscuration belly-up) to integrate properly (**CF5**, **CF6**). The Jet Provost pilot reported being visual, however, members commented that a fast-jet joining the circuit and mixing with slower aircraft is likely to cause some concern to the other pilots in the circuit due to potential closing speeds and thought that the Jet Provost pilot could have given the PA28 a much wider berth, but in joining as they did, had flown close enough to cause the PA28 pilot concern (**CF7**).

¹ SERA.3205 Proximity

² SERA.3225 Operation on and in the Vicinity of an Aerodrome.

For his part, the PA28 pilot was visual with the Jet Provost as both aircraft turned onto opposite base legs and was concerned that the Jet Provost was also making an approach for the runway. The instructor's concern was sufficient that he took control from the student and took avoiding action in a critical stage of flight. Members agreed that there was little more he could have done in the circumstances.

The Nottingham AGO was not required to integrate the circuit traffic (**CF2**), although he did pass relevant circuit information to the Jet Provost pilot. Organisationally, members agreed that it appeared that there were inadequate procedures at the airfield for the safe integration of the Jet Provost with the slower light-aircraft traffic (**CF1**, **CF3**). They therefore resolved to make a recommendation that Nottingham/Tollerton airfield consider publishing procedures for the integration of faster jet aircraft with other circuit traffic.

When determining the risk, the Board were somewhat hampered by the lack of recorded information and could only base their assessment on the PA28 pilot's report and an estimate of the Jet Provost's track. The latter was facilitated by a video of the join from the cockpit of the Jet Provost, which showed its subsequent track after it faded from the radar. Notwithstanding the PA28 pilot's concern and decision to take avoiding action, interpolation of the radar seemed to indicate that the faster Jet Provost had always been ahead of the PA28 as it turned in. The PA28 pilot's avoiding action was also considered to have been timely and effective in removing the risk of collision, although safety had clearly been degraded. Accordingly, the Board assessed the risk as Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2019287		
CF	Factor	Description	Amplification
	Ground Elements		
	• Regulations, Processes, Procedures and Compliance		
1	Organisational	• Organisational Documentation and Publications	Inadequate regulations or procedures
	• Situational Awareness and Action		
2	Contextual	• Situational Awareness and Sensory Events	Not required to monitor the aircraft under the agreed service
	Flight Elements		
	• Regulations, Processes, Procedures and Compliance		
3	Organisational	• Flight Operations Documentation and Publications	Inadequate regulations or procedures
	• Tactical Planning and Execution		
4	Human Factors	• No Decision/Plan	Inadequate planning
	• Situational Awareness of the Conflicting Aircraft and Action		
5	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
6	Human Factors	• Monitoring of Other Aircraft	Pilot did not sufficiently integrate with the other aircraft
	• See and Avoid		
7	Human Factors	• Lack of Individual Risk Perception	Pilot flew close enough to cause the other pilot concern

Degree of Risk: C.

Recommendation: Nottingham/Tollerton airfield to consider publishing procedures for the integration of faster jet aircraft with other circuit traffic.

Safety Barrier Assessment³

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

Ground Elements:

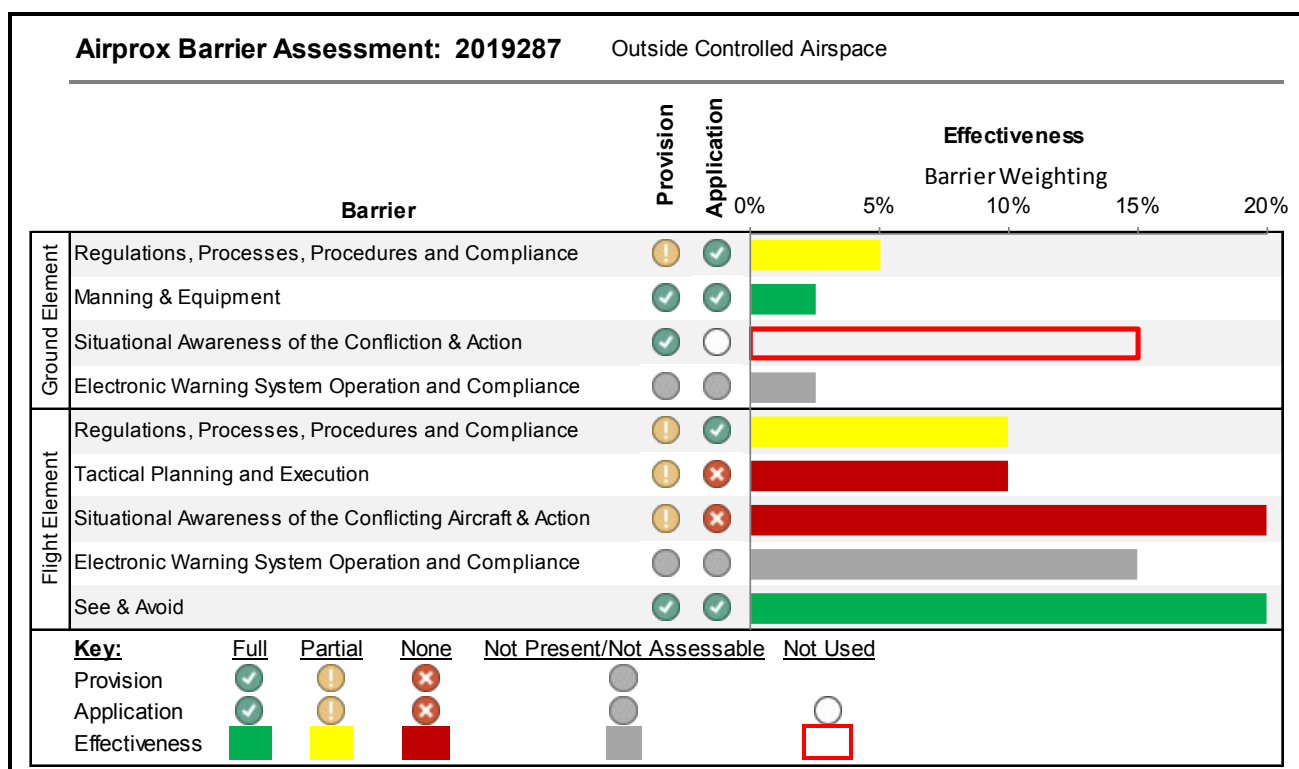
Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because Nottingham did not have any published procedures for a fast-jet run-and-break join.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the Jet Provost pilot needed to have a universal procedure for how they intended to safely execute a run-and-break not just at Tollerton but at other airfields at which they might operate.

Tactical Planning and Execution was assessed as **ineffective** because when executing the run-and-break, the Jet Provost pilot didn't allow for other circuit traffic.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because although the Jet Provost crew were told about 2 aircraft in the visual circuit, they didn't appear to make any provision for them when joining in the opposite direction.



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