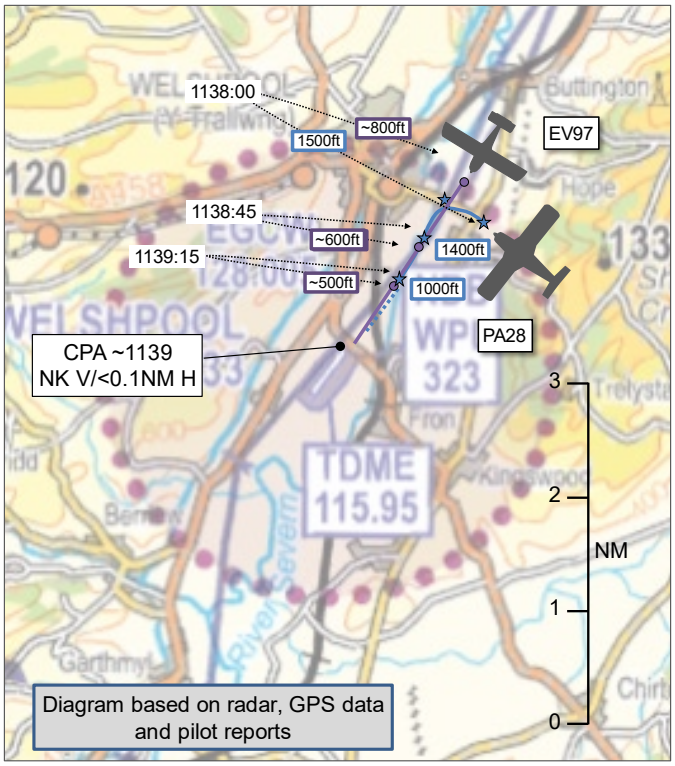
AIRPROX REPORT No 2024044

Date: 30 Mar 2024 Time: ~1139Z Position: 5237N 00309W Location: Welshpool

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	EV97
Operator	Civ FW	Civ FW
Airspace	Welshpool ATZ	Welshpool ATZ
Class	G	G
Rules	VFR	VFR
Service	AGCS	AGCS
Provider	Welshpool Radio	Welshpool Radio
Altitude/FL	NK	NK
Transponder	A, C, S	Not fitted
Reported		
Colours	Red, White	Silver
Lighting	Landing, Anti-col, Nav	NR
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	300ft	114ft
Altimeter	AGL	QFE
Heading	220°	NK
Speed	70kt	53kt
ACAS/TAS	Not fitted	PilotAware
Alert	N/A	None
Separation at CPA		
Reported	100ft V/0m H	25ft V/25ft H
Recorded	NK V/<0.1NM H	



THE PA28 PILOT reports that they joined overhead for RW22 at Welshpool. They proceeded to fly a standard published circuit at 1500ft on QFE. They believed that somewhere on the crosswind leg another pilot announced that they were joining on a 'long final' for RW22. They were aware of the potential conflict on the base to final turn so, as well as keeping a good lookout, they called 'base' in an attempt to make themself known to the pilot joining on a long final. They could see another aircraft ahead in the circuit and, having had a good look out and spotted nothing else to affect, they positioned behind the aircraft they could see on final approach, believing that this was the pilot who had joined on a 'long final'. The above pilot landed and cleared the runway, at which point they believed they were number one in the queue to land. Then, at about 300ft AGL, someone else called 'short final'. Given they were also on short final, they banked right in an attempt to try and see the other aircraft, and immediately made themselves known on the radio by also calling 'short final'. They were reluctant to go around immediately without seeing the aircraft who had just called, in case it was above them and for that reason, out of sight. A moment later however, they spotted the single engine aircraft directly beneath them by about 100ft, also conducting an approach to RW22. They immediately applied full power and initiated a go-around, whilst keeping the aircraft in a gentle right bank so as to increase separation still further. They recalled another pilot (or possibly the A/G operator) called on the radio at this point instructing the other aircraft not to climb, due to the fact their aircraft was flying directly overhead, but they did not remember all the finer details of what was said, as they were busy focussing on flying the go-around. They remember calling 'going around', however did not recall the pilot of the other aircraft involved making any further remarks on the radio or acknowledging the 'go-around' call, although they may be mistaken. To their knowledge, the other aircraft landed safely without incident. They asked the A/G Operator for the registration of the other aircraft after the incident occurred, and they agreed to try and find out, however, they were unable to confirm which aircraft it had been during the time they were speaking on frequency, and they had decided to return base, so changed frequency to London Information. Originally, they had planned to land and then discuss the incident with the

handling pilot of the other aircraft, however, due to the high density of traffic in the circuit and the runway not being clear, they proceeded to conduct another two go-arounds, before deciding to return to base after a touch-and-go, as they needed to return the aircraft.

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

THE EV97 PILOT reports that conditions were fine with very good visibility but unsettled air and some turbulence; they were following a second aircraft (C42) with good separation. Both pilots made contact with Welshpool Air Ground and requested a straight-in approach, which was agreed and granted [sic] by the AGO as traffic was light at the time of their arrival. On approach, they made regular calls to give their location as they were conscious and fully aware of the C42 being on approach and lined-up for landing. They reduced power to increase separation between their aircraft and the C42, all the time calling out to Welshpool traffic [sic] their position and intentions. They had full visual contact with the C42 as it landed as they were on approach. As the C42 backtracked, they called out again to Welshpool traffic [sic] that they were on Final and then on Short Final to keep the C42 pilot informed of their location. The C42 had cleared the runway with ease as they made their short final approach. At this point there were other aircraft on frequency, but they could honestly say that they did not hear any other calls from any other pilots stating that they were either on downwind, base leg or final. As they approached the threshold of RW22, at an altitude of around 50ft and traveling at around 53kt, they heard a panicked/emergency transmission on the frequency from the pilot of the C42. To the best of their knowledge the transmission was along the lines of "[Name], [EV97 C/S] Land immediately, other aircraft landing do not land, go-round NOW there is an aircraft below you, [EV97 C/S] Do not go round' After hearing this transmission from the C42 pilot both they and their passenger looked to the right and saw what they now know to be [PA28 C/S] break right overhead, at no more than 70ft above, in what can only be described as a heavily banked turn at low speed. This was the first and only time they were made aware of the situation and other pilot's position.

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

A WITNESS reports flying with the EV97 into Welshpool. As there had to be separation on landing at Welshpool, and as the lead aircraft, they came in on long finals in the C42, calling out all the way. The EV97 pilot held back enough for them to land and taxy back/park on the hard standing at Welshpool. Calls were made on approach all the way in by the C42 pilot and the EV97 pilot. When they had landed, [EV97 C/S] repeated "On Short Final", they had made several calls as to their location at the time. They recalled that they did also hear [PA28 C/S pilot] also say "Short Final". This was the only call that they heard the PA28 pilot make. When parked (with engine still running and radio still on) they looked to their right to see the EV97 approaching the field. They also noticed that another plane (which they believed to be [PA28 C/S]) had turned tight and was attempting to land. The PA28 was faster than [EV97 C/S] and, as such, had no indication of the Eurostar that they were about to land on top of. They [the C42 pilot] immediately went onto the radio and (to the best of their knowledge) said the following in a very firm and loud manner:

"[Name] Continue to land do not go up you have an aircraft above you"

"To the aircraft on final you have a plane below you go around immediately, do not land"

The PA28 then proceeded to power up and abort the landing, flying low over the top of their aircraft on full power at quite a bank angle. The pilot of the PA28, post the initial go-around climb-out, then radioed "Thank You". The EV97 continued to land as the PA28 went around. They did not see the pilot after they had landed, and they thought that the other pilot had paid for the landing then left. At the worst moment there could not have been more than 50ft separation (they would say a lot less). They opined that they believed that if they hadn't have seen this happening and acted, there was no doubt that the two planes would have collided at speed with serious injuries or worse.

THE WELSHPOOL AGO reports that 2 microlights joined the circuit from the north, both making regular calls of their position. The PA28 was joining the circuit from the south. Both microlights joined straight in from the north as at the time the circuit was quiet. The C42 landed first and the EV97 was No2. The

C42 backtracked and vacated the runway and the EV97 pilot called short final as the runway was now clear. Then the PA28 pilot also called short final. The PA28 pilot had earlier called final and traffic information had been passed however they had not sighted the traffic ahead. The C42 was parked on the grass apron and the pilot could see the approach and notified the two aircraft that they were almost on top of each other and insisted the PA28 pilot needed to go around. The PA28 went around and the EV97 landed. Neither pilot saw the other aircraft [they believed]. The PA28 continued to do 3 more attempts to land, by this time the circuit became very busy, and they ended up departing the circuit 20min later.

Figure 1 – Photograph taken from the CCTV at Welshpool

The AGO perceived the severity of the incident as 'High'.

Factual Background

The weather at Shawbury was recorded as follows:

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METAR EGOS 301120Z AUTO 16010KT 9999 BR OVC030/// 12/05 Q0993=
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The AIP entry for Welshpool states:

EGCW AD 2.22 FLIGHT PROCEDURES

1 CIRCUITS

a. Overhead Joins 2500 FT QFE.
b. Fixed Wing Circuit 22/04 LH 1500 FT AGL.
c. Rotary Circuit LH 22/04 1200 FT AGL inboard of fixed wing circuit.
d. State Position on first contact with Welshpool Radio.

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. The PA28 could be identified using Mode S data and could be seen conducting an overhead join to Welshpool. See Figure 1. Neither the EV97 nor the C42 could be seen on the radar.

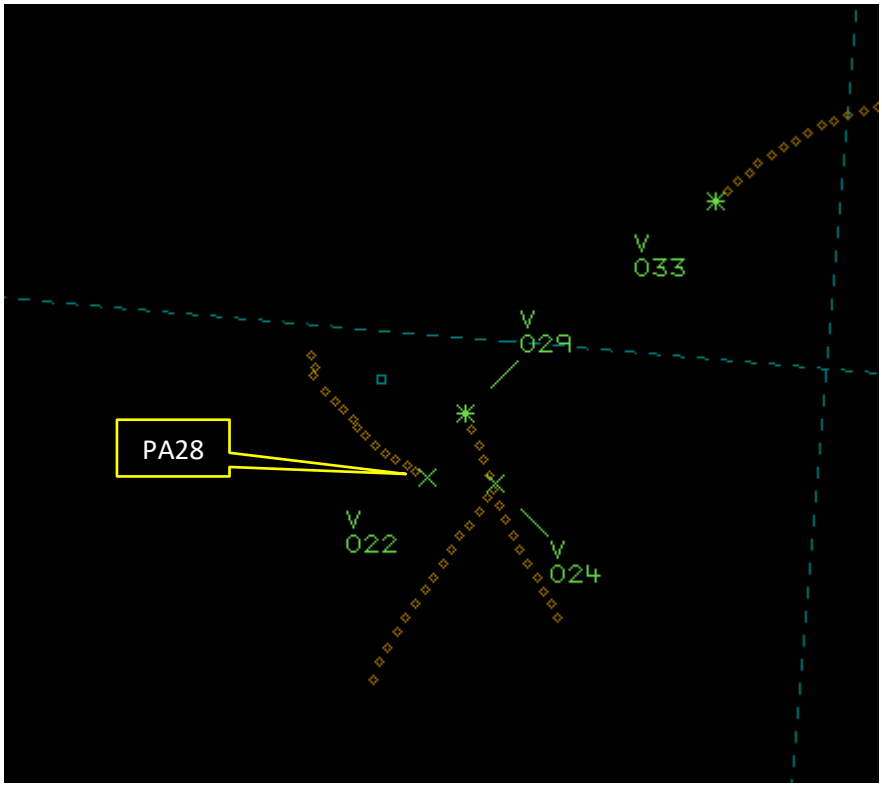

Figure 1 – 1136:20

The PA28 could be seen on the radar conducting a standard visual circuit (Figure 2), before disappearing from the radar at 1139:20.

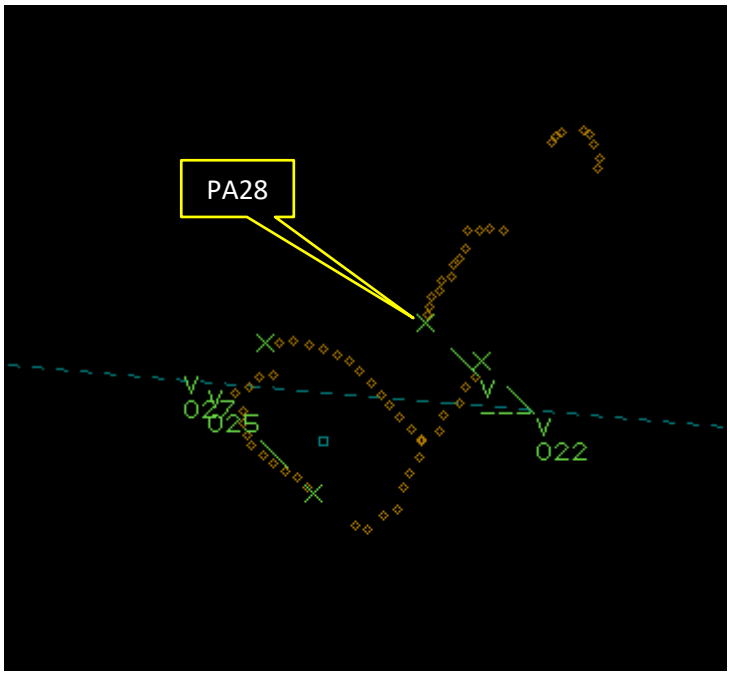

Figure 2 - 1139:16

Unfortunately, the EV97 did not show on the radar at all, however they did display on an ADB-S data tool. The diagram at the top of the report was compiled by amalgamating the radar and ADS-B data sources.

The PA28 and EV97 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 PA28 and an EV97 flew into proximity at Welshpool at around 1139Z on Saturday 30th March 2024. Both pilots were operating under VFR in VMC, both in receipt of an AGCS from Welshpool Radio.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots and a witness, radar photographs/video recordings, GPS data and a report from the AGO involved. 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 discussed the actions of the PA28 pilot. They had joined the Welshpool visual circuit via the overhead, fitting into the visual circuit downwind as would have been expected. The pilot reported that they had heard a pilot report joining via a straight-in approach and had become visual with the C42, but had not realised that there had been a second aircraft, the EV97, behind it (**CF4**). Members agreed that, although the EV97 pilot had not joined as might have been expected, the PA28 pilot should have checked the approach path prior to turning onto base-leg, and that once the EV97 pilot had called final, because it had been the lower aircraft, the PA28 pilot had been required to fit in behind it (**CF2**). As it happened, the PA28 pilot had not been visual with the EV97 and had therefore commenced their final approach, fitting in behind the C42. It had not been until the EV97 pilot had called short final that the PA28 pilot had realised that there had been another aircraft in their vicinity. The PA28 pilot had then become visual with the EV97, albeit extremely late (**CF6**), and had reported taking avoiding action by going around at the same time as the C42 pilot had made their warning call on the frequency.

The Board then turned to the actions of the EV97 pilot. They had been joining the Welshpool circuit behind the C42 and both aircraft had been conducting a straight-in join. Members discussed the pros and cons of conducting such a join; the pilot had reported that the join had been 'approved' by the AGO, but members noted that an AGO could not approve, or deny, such a request but that pilots should consider the effect that a straight-in approach has on other circuit users. Members highlighted that the CAA recommended that pilots join the visual circuit via the overhead, so that they could assess the circuit traffic and fit in accordingly.[3] By conducting a straight-in join, the Board agreed that the EV97 pilot had made it difficult for other pilots to fit in around them, particularly given their speed and relative size, making them notoriously difficult to see at range (**CF1**, **CF2**). The AIP entry for Welshpool stated that overhead joins should be conducted at 2500ft and members briefly discussed whether this was an instruction to join via the overhead or simply a note that, due to high ground, the procedure was to be conducted higher than would usually be expected; they noted that there was a certain degree of ambiguity in the AIP entry. The EV97 pilot had reported that they had not heard anyone else on the frequency, yet according to the AGO, the PA28 pilot had made the appropriate radio calls, and given that the radar showed that there had been at least 4 other aircraft in the circuit, there must have been other calls, leading the Board to wonder whether the EV97 pilot had been concentrating on other matters and not sufficiently monitoring the frequency (**CF3**). The Board noted that the EV97 had been fitted with a CWS and, although it would have been expected to alert for the transponder on the PA28, an alert had not been reported (**CF5**). Members agreed that, as a consequence of not hearing the PA28 on the radio and the CWS not alerting, the EV97 pilot had not received any situational awareness that the PA28 had also been on short final (**CF4**). The PA28 had been above and behind the EV97 and thus obscured from the EV97 pilot's view (**CF8**) and so the EV97 pilot had first become aware of its proximity when the C42 pilot had given a warning on the frequency and consequently had not seen the PA28

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.
[3] CAA Skyway Code Aerodrome Operations https://www.caa.co.uk/publication/download/16112

until after the other pilot had taken avoiding action, making this effectively a non-sighting by the EV97 pilot (**CF7**).

The Board briefly looked at the actions of the AGO, but noted that an AGO is not required to sequence aircraft in the visual circuit and on this occasion had not seen the two aircraft on final until after the C42 pilot had issued their warning. This led members to praise the C42 pilot for calling their warning on the RT, whilst the PA28 pilot had become aware of the EV97 shortly before the warning and had begun the go-around procedure, nevertheless, the warning had alerted the EV97 pilot to the situation.

Finally the Board discussed the risk, in doing so they considered the reports from both pilots and the AGO, together with the radar screenshots. They quickly agreed that there had been a risk of collision but, whilst a minority of members thought that there had been an element of providence in the separation, others countered that the avoiding action taken by the PA28 pilot had materially improved the separation. The latter view prevailed and the Board assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024044			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Tactical Planning and Execution			
1	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
2	Human Factors	• Monitoring of Environment	Events involving flight crew not to appropriately monitoring the environment	Did not avoid/conform with the pattern of traffic already formed
	• Situational Awareness of the Conflicting Aircraft and Action			
3	Human Factors	• Monitoring of Communications	Events involving flight crew that did not appropriately monitor communications	
4	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			
5	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
	• See and Avoid			
6	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
7	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
8	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other
	• Outcome Events			
9	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[4]

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

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 AGO at Welshpool had not been required to sequence the aircraft in the circuit.

Flight Elements:

Tactical Planning and Execution was assessed as **ineffective** because neither pilot integrated with the other when established in the circuit.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had received any situational awareness that the other had been on final at the same time.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the electronic conspicuity equipment on the EV97 had not detected the PA28.

See and Avoid were assessed as **partially effective** because the PA28 pilot had become aware of the EV97 late, but had managed to take emergency avoiding action.