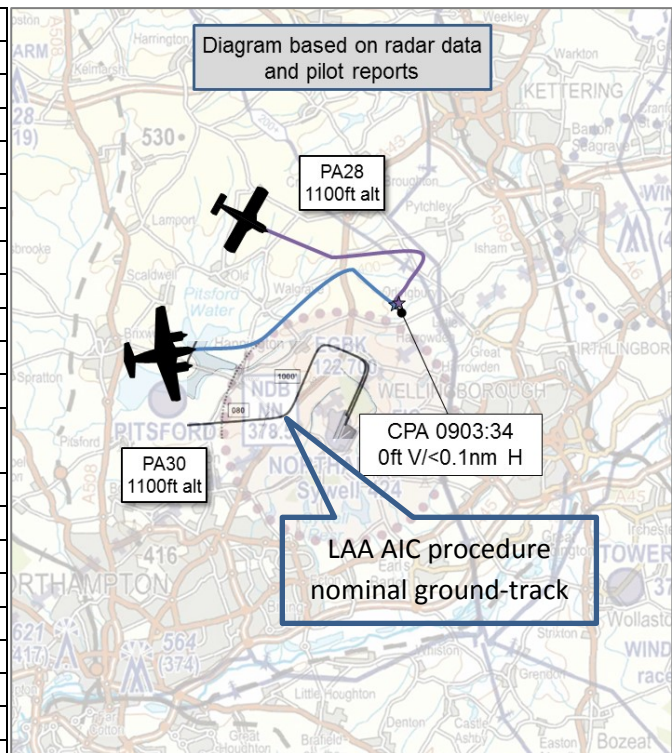


**AIRPROX REPORT No 2018237**

Date: 02 Sep 2018 Time: 0903Z Position: 5218N 00047W Location: Sywell ATZ

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA30	PA28
Operator	Civ FW	Civ FW
Airspace	Sywell ATZ	Sywell ATZ
Class	G	G
Rules	VFR	VFR
Service	AFIS	AFIS
Provider	Sywell	Sywell
Altitude/FL	1100ft	1100ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White, Blue	Red, White
Lighting	Strobe, LED, Landing	Strobe, Landing
Conditions	VMC	VMC
Visibility	>10km	10km
Altitude/FL	300ft	1000ft
Altimeter	QFE	QFE (1009hPa)
Heading	210°	210°
Speed	84kt	70kt
ACAS/TAS	PilotAware	TAS
Alert	Unknown	Unknown
Separation		
Reported	3ft V/0m H	300ft V/NK H
Recorded	0ft V/<0.1nm H	



**THE PA30 PILOT** reports that he was flying into Sywell for the LAA rally, with a slot time of 10:02 local (0902UTC). In his opinion he followed the procedure published in CAA AIC Y 074/2018, leaving the hold at Pitsford Water at 1000 ft QFE to join downwind for runway 21R. Whilst in the Pitsford hold, the PA30 pilot had heard the PA28 pilot calling Sywell for joining and the controller responding by advising the PA28 pilot to follow the published procedure; the PA30 pilot’s mental model at that stage was that the PA28 was behind him. As he routed from the Pitsford hold he was aware of an aircraft ahead flying more slowly, so he reduced speed and extended before turning base. On final he reduced speed further to maintain spacing with the aircraft ahead to land. In accordance with the published procedure, he did not make a final call because he was still No2 with one between him and the runway. He was at 300ft when the one ahead touched down. He was about to call final when he was overflowed by the PA28, with a separation of about one metre (he heard the PA28’s engine). The first he knew of the presence of the PA28 once he had left the Pitsford hold was when its pilot called ‘final’ before overflying him. He thought that the PA28 pilot had clearly not seen his aircraft. He transmitted that he was going around and that he would be filing an Airprox. The PA28 responded by saying that as he had already called final, he was cleared to land. The PA30 pilot felt that the PA28 pilot had not followed the published R/T procedure to be used on final, and he attributed this to an assumption that the PA28 pilot was not familiar with the AIC. Thinking that the PA28 pilot had not seen him ahead on the approach, the PA30 pilot could not explain how this could be so. The PA30 pilot opined that this was a very serious incident showing a reprehensible lack of airmanship [on the part of the PA28 pilot], which almost ended in tragedy.

He assessed the risk of collision as ‘High’.

**THE PA28 PILOT** reports that he advised Sywell of his reporting point and designated slot time of 1007 local, he then proceeded to final for the runway as advised. He reported final for RW21 and Sywell

Information requested him to confirm his choice of runway, the hard or grass. He confirmed RW21 hard and Sywell acknowledged this and cleared him for RW21 hard, No1, which he confirmed back. At this time, he was at approximately 900ft QFE on a 'standard' approach, and within one minute of his landing slot time. Soon after, another aircraft approached in front of him, on right base. This aircraft then positioned for final and he heard an aircraft cleared for RW21 grass [he recalled]; he assumed it was the aircraft that had just joined in front of him, there was a high level of radio traffic due to the LAA event. He had encountered parallel landings before onto both hard and grass runways, so he climbed and reduced power whilst maintaining the runway centreline for the hard runway. This positioned him high and to the right of the other aircraft, whose pilot maintained course to the left for the grass runway [he thought] so he remained on the centreline for RW21 hard. Both he and his passenger maintained visual contact with the other aircraft, high and to its right. During the final approach phase, the other aircraft moved right and passed underneath him, he maintained straight and level, as he had height clearance, but applied power. It was then that the other pilot declared that he had been overflown, in a calm voice. This prompted him to proceed with the landing, given that the other pilot had him visual and did not appear to sound anxious or flustered. The other pilot then advised that he wished to file an Airprox. The PA28 pilot stated that in his opinion he was given clearance for RW21 hard. He did not transmit any further radio messages in the final stages of landing but focused on flying the aircraft and not wanting to cause confusion in between all the other radio transmissions. The PA28 pilot commented that, in hindsight, despite the twin entering final whilst he was on final, he should have simply followed both his training and instinct and gone around. Instead of working on trying to mitigate the risk, he should have simply avoided the risk.

In addition to his Airprox report, upon reflection the PA28 pilot also submitted the following pertinent points that he believes may have contributed to his actions in relation to this incident:

- Previous negative learning from being both a pilot and passenger at airfield 'fly in' events in which aircraft were landing to both "Grass" and "Hard". He had elected to go around previously because he was not aware that aircraft would be occupying the parallel runway as he approached. He was then confronted with complexity in the circuit together with a disapproving tone from the tower for messing the slots up due to his go-around.
- At the time of entry into the Sywell airspace there were a couple of aircraft who had not observed the NOTAM [AIC]. This introduced some anxiety and increased his scan.
- Observing an aircraft cross the final approach from left to right as he was on route to commence his final approach.
- Hearing an aircraft cleared for final but not being able to visually identify the aircraft; this took him a while to gain visual on the aircraft before he called for final clearance.
- On subsequently seeing the twin aircraft enter final and believing he had heard a clearance for the final "Grass" he simply concluded this was another scenario where there was a staggered parallel landing routine in place. This belief and previous learning then completely guided his decision process. He also heard his TAS giving continuous alerts throughout.
- The track of the twin-aircraft was consistent with an approach to the 'grass' runway as he maintained the centre-line for the 'hard' [UKAB note: in fact, the PA30 pilot was also positioning to land on the hard runway]. This was simply adding to the conviction of his previous experience and he did not want to be faced with another go around that had the potential to cause further complexity for himself in the circuit. Yet his gut was saying, "go around", as it's what he would always do in the routine airfield environment.
- Radio traffic procedure at the LAA Rally is clearly governed to reduce the amount of additional calls, which again is unnatural for him as he likes to provide update information to other traffic for awareness.

- Regarding the point at which the twin-aircraft passed beneath him, he asked himself: 'did I perform the correct action for this eventuality?', but he was conflicted in his belief. His impulse thinking was 'You have maintained a degree of height separation, so keep the height constant but increase speed so the other aircraft can see me quickly'. Climbing and adding full power just didn't feel right given the loss of visual contact and considering the angle of engine wash in the climb. His instinctive training was to apply full power and climb but his former consideration came into mind.
- As soon as the other pilot announced he had been overflown in a calm and casual manner he concluded that the other pilot had visual on him, which prompted him to descend and continue with the landing.
- At this stage he was in instinct mode, simply focusing on flying the plane and not trying to operate the radio. He has considered other factors such as mental stress given his work has a number of challenges and, whilst this is high he didn't believe this played a significant part. He is conscious that he had a disrupted sleep the night before but again he didn't believe this was a significant factor. He was however probably feeling pressured to ensure he was away from the 'Fly In' in good time to drive to an important event. Therefore, he does believe some of these factors affected his actions.

He assessed the risk of collision as 'Medium'.

**THE SYWELL FISO** reports that during the LAA Rally silent joining procedures were in force as per AIC Y074/2018. A PA28 had reported on final approach to RW21L (this being the initial call to Sywell as per the promulgated Rally joining procedure). A PA30 subsequently also reported on final for RW21L, immediately after which he advised that he was going around stating that he had been overflown by the PA28 and that he intended to file an Airprox. The PA28 continued his approach to land on RW21L and the PA30 repeated the joining procedure and subsequently landed on RW21L.

## Factual Background

The weather at Cranfield was recorded as follows:

METAR EGTC 020850Z 13007KT CAVOK 19/12 Q1025

## Analysis and Investigation

### UKAB Secretariat

The PA30 and PA28 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>. 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<sup>2</sup>.

Both aircraft join from the same hold area, although the PA28 leaves the hold much further north than the procedure stipulates and therefore not where the PA30 pilot was probably expecting him. The PA28 (and PA30) then proceed to fly a much larger than intended ground track compared to the published procedure (see diagram on Page 1).

Figure 1 shows the subsequent geometry just before the PA28 pilot turns long final, with the crossing aircraft that the PA28 pilot mentions visible. Prior to this, an aircraft primary-only return (possibly a Jodel that landed ahead of the PA28) appears to be joining from the north-east ahead of the PA28, this subsequently disappears from radar at about 2nm.

<sup>1</sup> SERA.3205 Proximity.

<sup>2</sup> SERA.3225 Operation on and in the Vicinity of an Aerodrome.

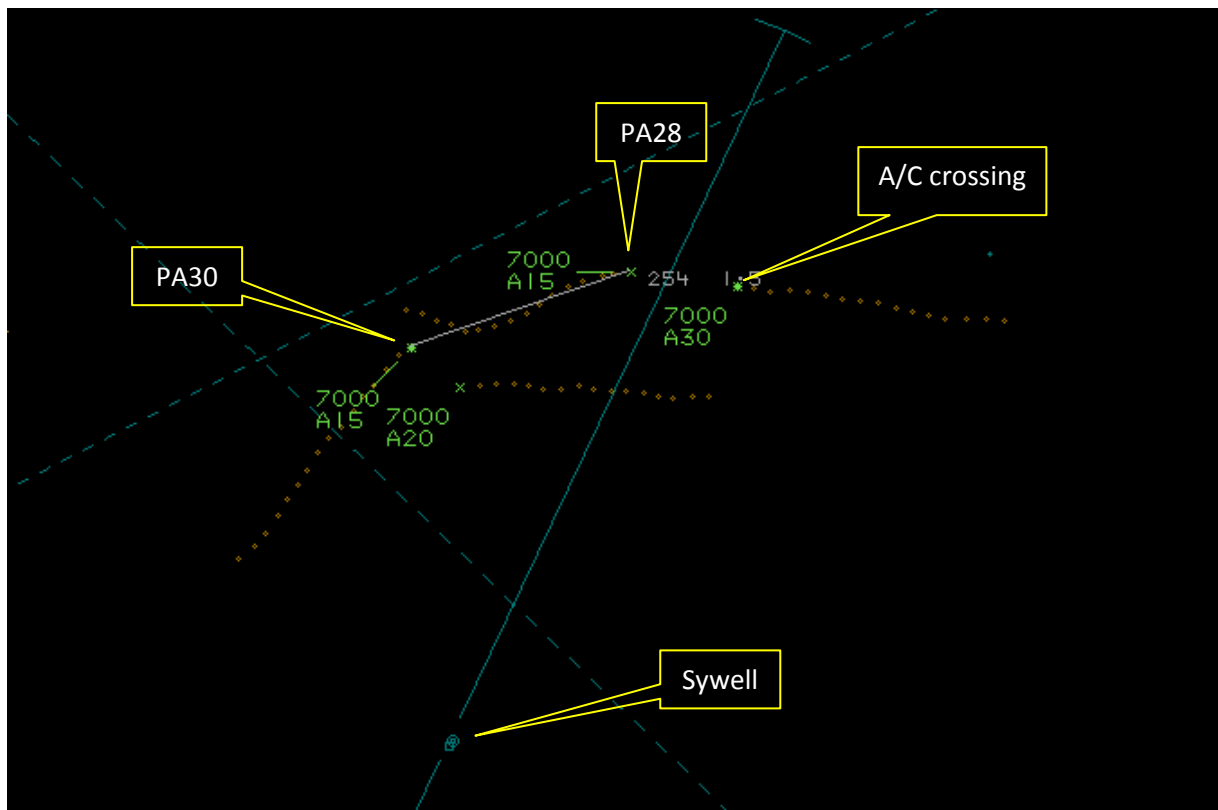


Figure 1

At Figure 2, the PA28 is ahead and has turned onto final at about 3nm. The PA30 is on an extended 'base-leg' and subsequently turns in for final at about 2nm.

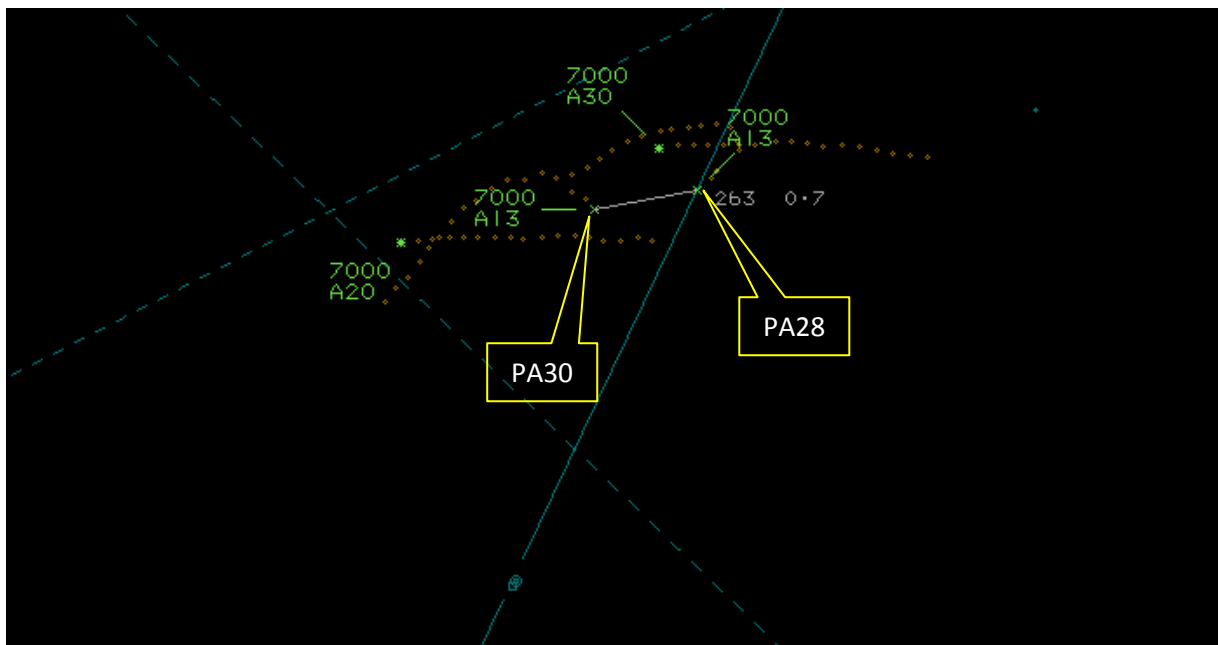


Figure 2

Initial CPA occurs when the aircraft tracks cross on final approach just after the PA30 turns final. Both aircraft are indicating the same level (Figure 3).

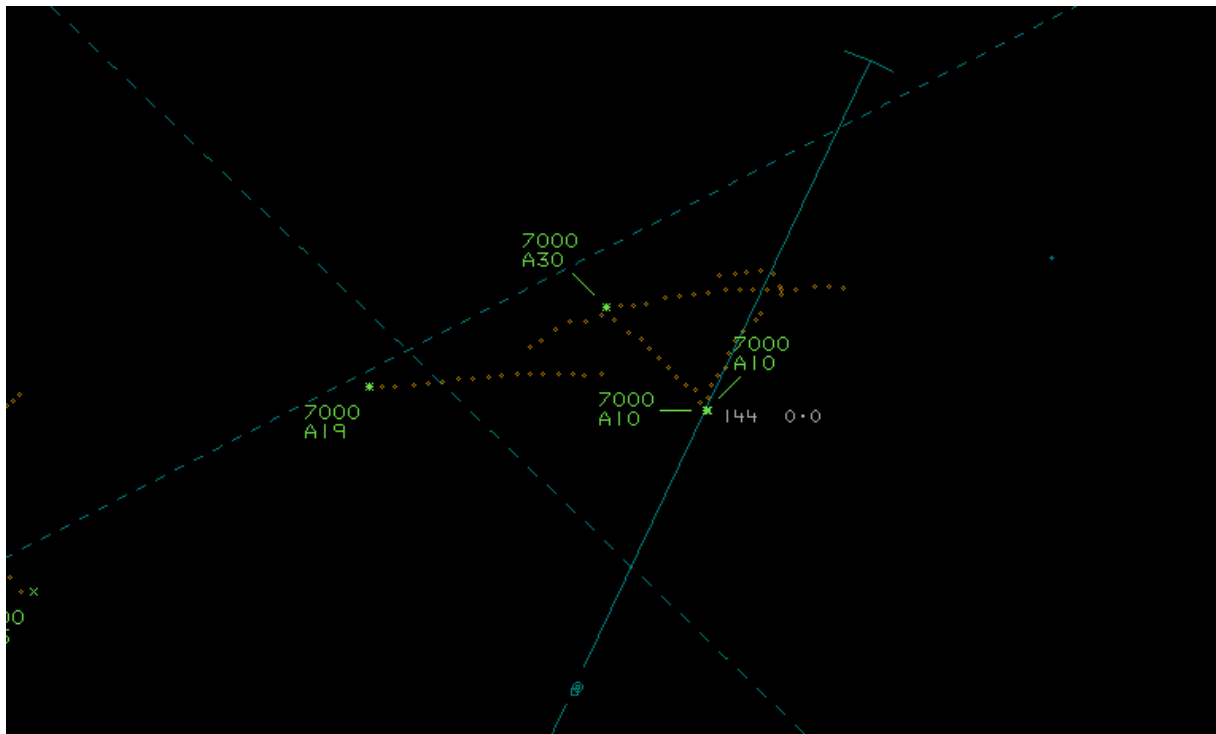


Figure 3

Figures 4, 5, and 6 show the aircraft at similar heights and position as they track down the final approach. From the PA30 pilots report, it is probably at Figure 5 that he saw the PA28 overtaking him and continuing to land as he goes around as indicated at Figure 6.

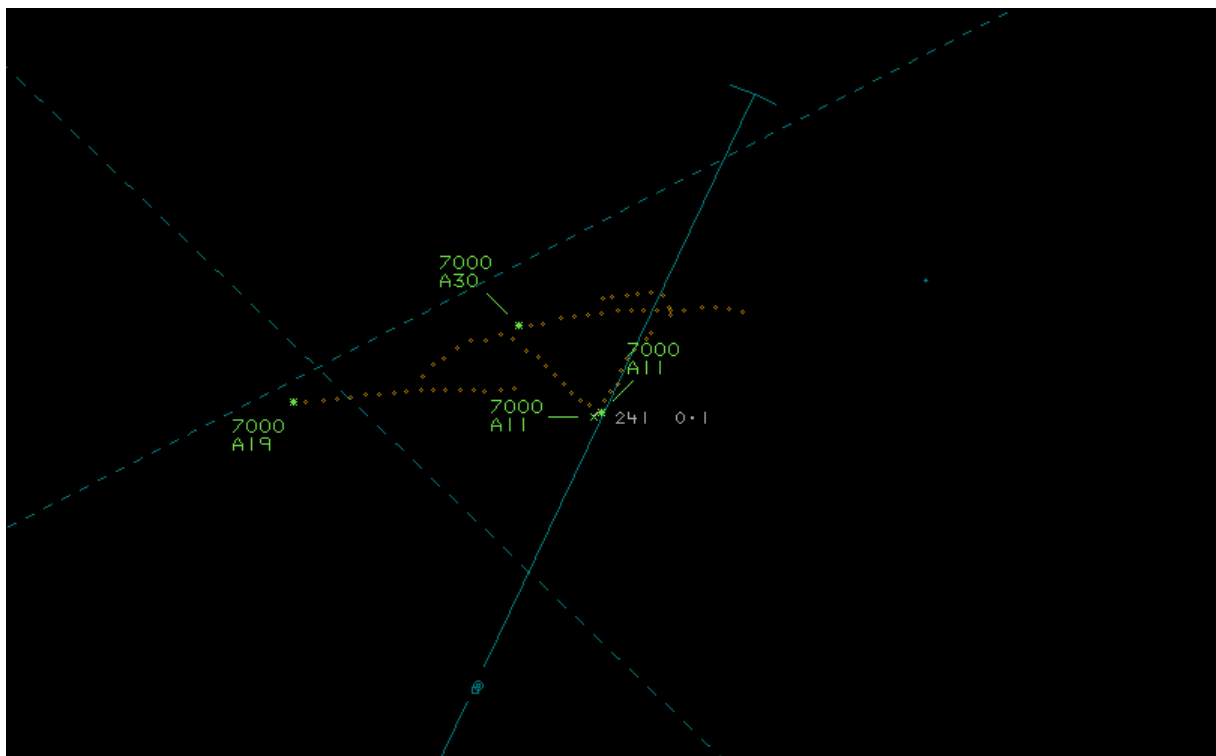


Figure 4

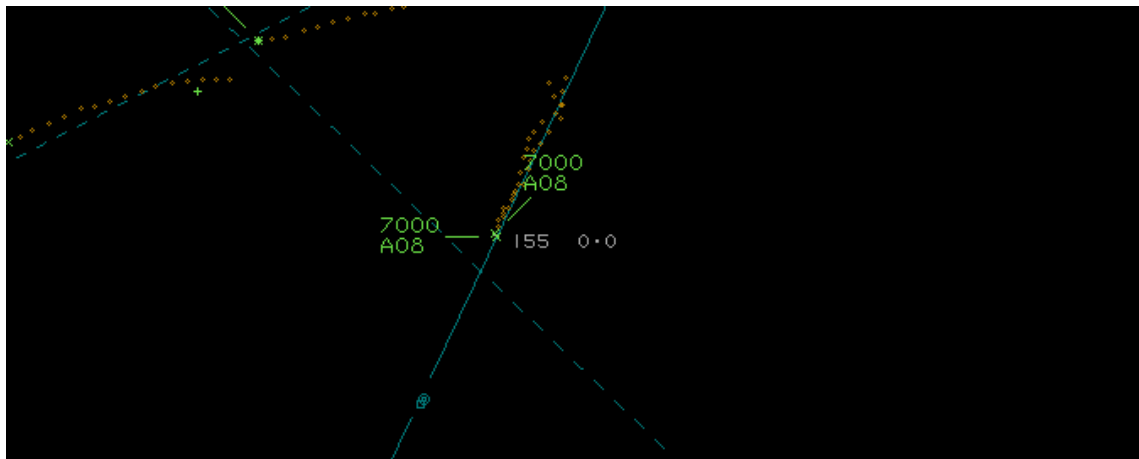


Figure 5

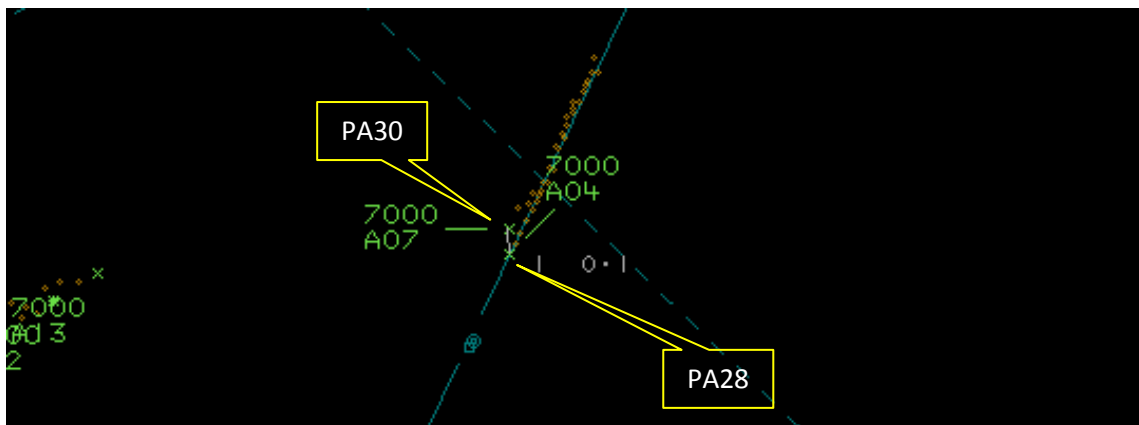


Figure 6

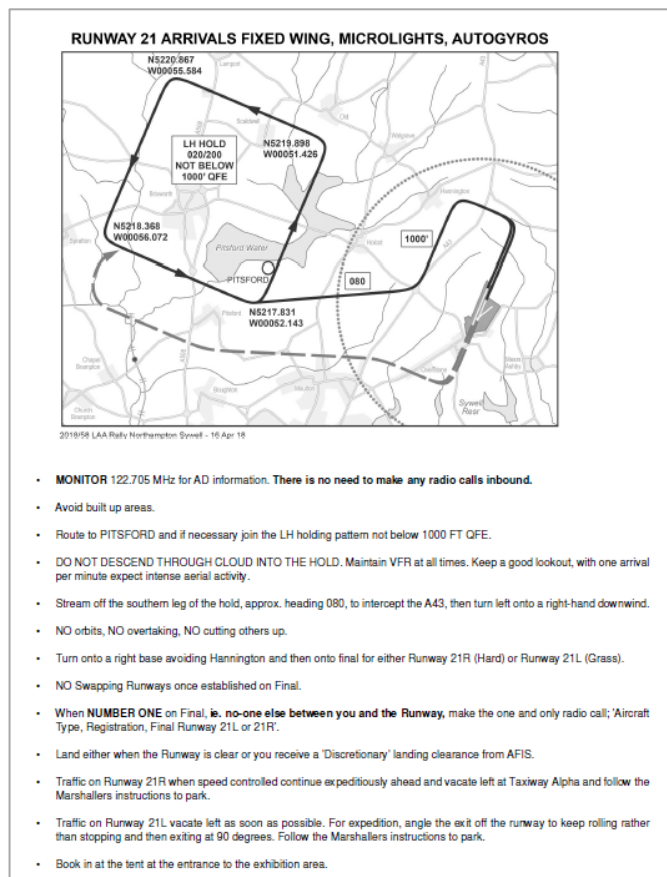


Figure 7: LAA Rally fixed wing arrivals procedure for RW21

## Summary

An Airprox was reported when a PA30 and a PA28 flew into proximity at 0903hrs on Sunday 2<sup>nd</sup> September 2018. Both pilots were operating under VFR in VMC and in receipt of a AFIS from Sywell.

### **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from the pilots of both aircraft, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate FISO.

The Board began by first looking at the actions of the PA30 pilot. He had left the hold at Pitsford Reservoir in accordance with the AIC, but it appeared from the radar replay that he had turned onto the downwind leg wider than the intended track shown in the AIC; it was subsequently disclosed by the PA30 pilot that his extended track was due to him positioning behind the slower Jodel. It was clear that he had heard the PA28 pilot in the hold, and the additional information from the PA30 pilot indicated that at this point he thought the PA28 was joining behind him. Having himself flown a wider than normal and extended ground track to maintain separation with the Jodel ahead, the PA30 pilot then turned onto final just outside the ATZ. When the PA30 pilot looked up the approach path before turning final, because he was not expecting to see anything beyond his own wider-than-normal track, it was likely therefore that his lookout scan did not acquire the PA28 which he thought was behind him.

The Board then turned to the actions of the PA28 pilot. It was clear that although he had flown to the area of the hold, he had not departed the hold at the specified point (south of Pitsford Reservoir, heading 080°). Thereafter, albeit he was trying to establish the location of aircraft joining ahead and crossing above, his route further deviated from the desired pattern such that he was now well off track and lining up for final well beyond the ATZ boundary. The Board felt that these large-scale deviations from the procedure was contributory to the PA30 pilot not visually detecting the PA28. Seeing no other aircraft ahead, the PA28 pilot had then called 'final' at long range, and GA members felt that although this was likely technically in compliance with the AIC (assuming there were no other aircraft ahead), to do so at such long range invited confusion for other pilots who would be expecting a call much closer to the airfield. Members debated whether the Sywell AIC could usefully include a maximum range (or ground position) for making the 'final' call but the Board eventually decided against making such a recommendation because this might compromise flexibility in the procedure. Notwithstanding, Sywell may wish to consider such an inclusion in the AIC.

When the PA30 also turned final, the PA28 pilot incorrectly assumed that both pilots were approaching for different runways and were carrying out parallel approaches; members agreed that although the AIC does not condone parallel approaches it does not prohibit them specifically. In the busy LAA Rally environment, the Board considered that explicit instruction should be made in the AIC regarding parallel approaches so that pilots would be in no doubt as to their responsibilities to go around in such circumstances; the Board recommended that Sywell consider such an amendment to their AIC. Although having been conditioned by previous experience to accept the parallel approach, when the PA28 pilot saw the PA30 adjust his course and start to fly beneath the PA28 members agreed that the PA28 pilot should have initiated an immediate go-around. He was the only one with the complete picture as to where the aircraft were and, notwithstanding his desire to meet his slot time, as soon as the PA30's turn towards was detected, he should have been in no doubt as to the need to go around at that point.

The Board then discussed the suitability of the AIC at length. They agreed that this and other incidents had demonstrated that some visiting pilots had not adequately adhered to the AIC, and that there were a number of assumptions and perceived pressures on visiting pilots to make their slot-times even to the detriment of safety. If everyone followed the procedure to the letter then there were undoubtedly numerous instances where things worked out as intended. Unfortunately, sometimes circumstances conspired to force pilots away from the procedure and it was in these circumstances that the fail-safe option of going around or returning to the hold should be emphasised. Although the recommendation to review parallel approaches was one such aspect, the Board agreed that a refresh of the AIC might be worthwhile to emphasise that pilots will not be in receipt of an Aerodrome Control Service, that pilots

are made fully aware that they are wholly responsible for collision avoidance, and that returning to the hold was a laudable course of action when faced with a conflict, as opposed to something to eschew.

The Board then turned to the cause and risk of the Airprox. A prolonged and sometimes heated debate ensued as to whether it had been the PA28 pilot's incompliance with the procedure that had caused the incident or whether deviation from the silent procedure was to be expected during the busy rally to the extent that this should be accommodated for by other pilots as they ensured their own collision avoidance through see-and-avoid. Although the PA28 pilot's failure to go around in the final stages of the conflict was relevant to the risk calculation, this was not considered to have been the cause of the aircraft coming into proximity. The debate ebbed and flowed, with GA members firm in their view that the PA28 pilot's deviation from procedures had been the root cause. Others were not convinced, and noted that, although unexpectedly on long-final, ultimately the PA28 was there to be seen as the PA30 pilot himself turned onto long-final. They argued that it was for the PA30 pilot to integrate with the PA28 already established and having called final, and the fact that the PA28 pilot had not followed the procedure was simply a contributory factor. Unable to discern a clear view either way, the Chairman held a vote and, whilst the result was close, the majority decision was that the cause had been that the PA30 pilot did not see the PA28 on long-final. Members agreed that, in addition to the PA28 pilot not following the joining procedure, there were 2 other contributory factors: the first of these was that both pilots had extended downwind well beyond the normal base position; and the second was that, having been conditioned to accept a parallel approach by previous experience, the PA28 pilot continued his approach despite being aware of the PA30 in close proximity. As for the risk, this was a more clear-cut debate and the Board quickly agreed that the 2 aircraft had come very close indeed, to the extent that separation had been reduced to the bare minimum at the point where, momentarily, neither pilot was visual with the other aircraft. Accordingly, the risk was assessed as Category A.

### **PART C: ASSESSMENT OF CAUSE AND RISK**

<u>Cause:</u>	The PA30 pilot did not see the PA28 on long final.
<u>Contributory Factor(s):</u>	<ol style="list-style-type: none"> <li>1. The PA28 pilot did not follow the joining procedure.</li> <li>2. Both pilots extended downwind beyond the normal base position.</li> <li>3. The PA28 pilot continued his approach despite being aware of the PA30 in close proximity.</li> </ol>
<u>Degree of Risk:</u>	A.
<u>Recommendation(s):</u>	That Sywell consider that parallel approaches are not to be conducted.

### **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:

#### **ANSP:**

**Regulations, Processes, Procedures and Compliance** were assessed as **partially effective** because the procedure did not robustly identify a method that ensures situational awareness if pilots depart from the procedure (e.g. a maximum range to call final), and the AIC did not specifically prohibit parallel approaches.

**Situational Awareness and Action** were assessed as **partially effective** because the AFISO did not identify the conflict and there were no procedures to determine the point at which an AFISO might intervene if aircraft were in conflict in such circumstances.

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<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](#).



**Flight Crew:**

**Regulations, Processes, Procedures, Instructions and Compliance** were assessed as **ineffective** because the PA28 pilot deviated to such an extent that he did not follow the joining procedure.

**Tactical Planning** was assessed as **partially effective** because the PA28 pilot did not fully follow the AIC instructions when leaving the hold.

**Situational Awareness and Action** were assessed as **partially effective** because the pilots had only generic awareness of each other prior to coming into proximity.

**Warning System Operation and Compliance** were assessed as **partially effective** because the installed TAS in the PA28 alerted but the pilot did not act upon it because he was visual with the PA30. The PilotAware in the PA30 either did not alert, or if it did, the alert was not reported or acted upon.

**See and Avoid** were assessed as **ineffective** because the PA28 pilot was visual with the PA30 as it turned in on final but, by continuing, he did not act sufficiently to avoid the conflict or increase the separation. For his part, the PA30 pilot did not see the PA28 already established on long-final as he himself turned final.

