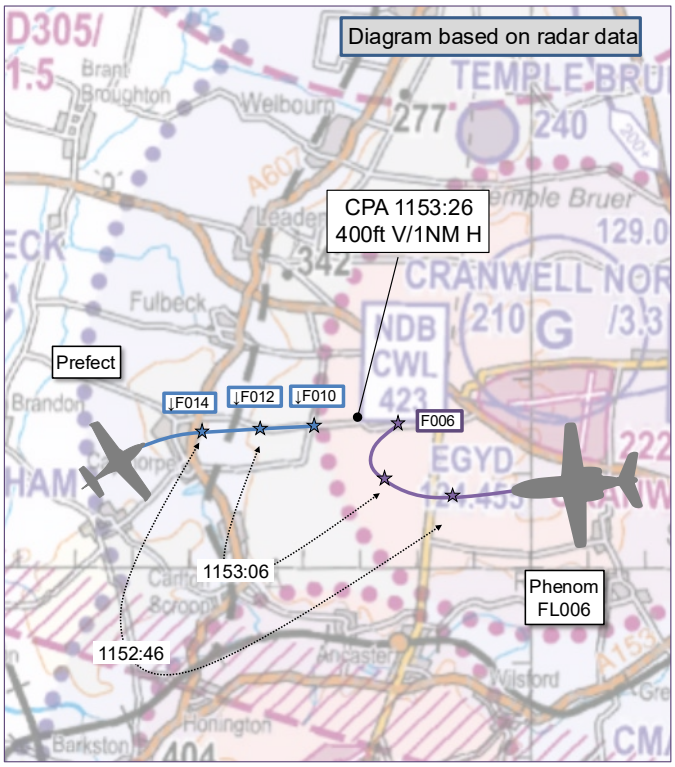
AIRPROX REPORT No 2025179

Date: 12 Aug 2025 Time: 1153Z Position: 5301N 00032W Location: Cranwell

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Prefect	Phenom
Operator	HQ Air (Trg)	HQ Air (Trg)
Airspace	Cranwell ATZ	Cranwell ATZ
Class	G	G
Rules	VFR	VFR
Service	Traffic	ACS
Provider	Cranwell PAR	Cranwell Twr
Altitude/FL	FL010	FL006
Transponder	A, C, S	A, C, S
Reported		
Colours	White, Blue	White, Blue
Lighting	Nav, HISLs	Strobes, Landing, Nav
Conditions	VMC	VMC
Visibility	5-10km	5-10km
Altitude/FL	1200ft	400ft
Altimeter	QNH (1015hPa)	QNH
Heading	080°	080°
Speed	120kt	140kt
ACAS/TAS	TAS	TAS
Alert	None	Information
Separation at CPA		
Reported	100mV/300m H	Not seen
Recorded	400ft V/1NM H	



THE PREFECT PILOT reports that they were the QFI and non-handling pilot on an instrument flying test (IFT). While the weather was good, the visibility was restricted by haze, but still VMC. They were positioned for a PAR recovery to RW08 at Cranwell, with the intention of carrying out a missed approach procedure. While working Cranwell Approach, they were aware of [the Phenom] formation recovering to join through initials for a visual run-and-break. The Prefect changed to Cranwell Talkdown (Stud 8) and commenced the PAR. They saw the Phenom formation execute the break, but lost sight of them as they turned downwind (the Prefect was at about 4.5NM on the PAR - on the centreline and on the glidepath). Their assumption was that the Phenom formation would extend downwind and turn final behind them [the Prefect]. At 3NM the PAR controller suddenly called “Prefect XX break off, go around, carry out the missed approach procedure”; the tone of their voice conveyed a sense of urgency so the QFI took control to execute a go around. As they did so, they saw a Phenom in front of them, slightly below in a right-hand turn and belly-up to them. In their peripheral vision they saw a second Phenom turning behind them. They lost sight of the first Phenom and reported the Airprox to the PAR controller. The missed approach was flown without further incident and the sortie continued. They noted that, were it not for the timely intervention by the PAR controller, they may not have seen the Phenom at all, as it would have been in the blind-spot under the Prefect nose.

The pilot assessed the risk of collision as ‘High’.

THE PHENOM PILOT reports that they were the captain and handling pilot of Phenom formation [formation C/S 2], leading back one other Phenom [formation C/S 1], on a visual recovery to Cranwell RW08. During the recovery they discussed the position of another aircraft in the instrument pattern, which they had picked up on the R/T, but were not aware of their exact position and there were several contacts on TCAS in the vicinity of the Cranwell radar pattern.

The recovery was flown through initial at 700ft 240kt, and they did not recall any calls being made of traffic on radar in response to their 'Initial' radio call. They were made aware of an aircraft joining overhead, which they could see they would be well ahead of and below, to break safely into the circuit. They broke downwind abeam the upwind threshold, and a call was made by the PM '[C/S] on the break, low, land, landing order 2, 1'. They did not recall any calls from ATC to advise of radar traffic ahead. They turned final in the normal place and, as they were about to call final, ATC called '[C/S] confirm visual with radar traffic'. The PM called '[C/S] 2 final' and they were cleared to land. Despite not being visual this time with the Prefect, they continued as they had been cleared to land. They (the QFI) attempted to gain visual contact as they turned, but were unable to do so, however, they had SA on the traffic from TCAS and their ADS-B iPad and could see that they were going to be ahead and below the Prefect, so they continued. They briefly mentioned that should a go-around be required, they would maintain runway centreline until they could assure separation from the Prefect which was now above and behind them. There were several calls at this time between [C/S] 1 and ATC as [C/S] 1 had elected to go around behind the Prefect, but they concentrated on their own final turn at this point, so they were unable to recall the exact details of the calls.

The event was discussed at in-brief and during formation debrief, and none of the crews (6 in total – 3 on each aircraft) could recall any calls to say there was radar traffic ahead. They called the ATC Supervisor to check if they had missed something and were made aware that the Prefect crew had filed an Airprox. They chatted the details through with the Prefect captain and advised that they would submit their own accounts to the Air Safety Team.

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

THE CRANWELL PAR CONTROLLER reports that they were in the PAR position for their 3rd talkdown of the day, the handover from TATCC had been standard, as had the talkdown, although the student had indicated that they were 'readability 3' which they addressed. Prior to taking the aircraft on, they had noticed the Phenom pair recovering for their standard VRIAB (Visual run in and break). The 7-mile call had been carried out iaw SOP, as had the gear check. When they went through for the clearance (at 3NM) they were told to break off the approach with aircraft ahead. They gave the instruction to break off the approach to which the Prefect Instructor replied 'I think I've had an Airprox with a Phenom', the controller immediately replied 'execute missed approach procedure' to ensure the best departure from the finals traffic as they only had one turning ahead visible on radar. The pilot then repeated that they had had an Airprox with a Phenom, before changing to Approach iaw SOP for [the] missed approach procedure.

THE CRANWELL AERODROME CONTROLLER reports that they were the Aerodrome controller, Cranwell was operating on RW08RH and in BLU met conditions. They had been on position for almost 60min, following-on from a period on Talkdown, in what had been medium intensity with a busy departure wave post lunch, including several aircraft from all 3 station-based assets and 4 x AEF. Coningsby 'sterile' had become active during this session, with aircraft given the necessary restrictions accordingly. At the time of the incident, they had a formation of 2 x Phenoms on recovery, as well as 1 x AEF returning via the overhead and radar traffic at 7NM to low approach for further. With the formation of Phenoms calling downwind to land, in the order 2 then 1, [the controller's] intentions were to give them priority and to continue the radar traffic visually if needed. This is why the Phenoms were not given [the call] 1 ahead on radar. The lead aircraft seemed to extend further downwind than anticipated and, knowing that they had heard the 7NM radar call from the controller, they thought there was the potential that the lead aircraft had decided to go around. When the first Phenom called finals gear down, having turned inside the radar traffic, they issued the clearance to land. Immediately, having continued with the plan of giving the Phenoms priority, they felt that the safest thing to do was then issue a break-off to the radar traffic. This was issued to the PAR controller and broadcast to the circuit traffic. The 2nd Phenom pilot reported not being visual with the broken-off radar traffic and elected to go around. The Tutor in the circuit landed with the 1st Phenom on the runway and the 2nd Phenom landed when the runway was clear.

In hindsight, and after watching the radar replay, their plan should have been to either break-off the radar traffic earlier or send the formation around for radar. Trying to get the formation in first, even with the 'continue visually' rule for the radar traffic, would have been too expeditious to implement.

Factual Background

The weather at Cranwell was recorded as follows:

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METAR EGYD 121150Z 06006KT CAVOK 26/14 Q1016 NOSIG RMK BLU BLU=
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Analysis and Investigation

Military ATM

Background

The Prefect was conducting an instrument approach (PAR) into RAF Cranwell and the Phenom was 1 of 2 aircraft in a formation conducting a Visual Run in Break (VRIAB) to RAF Cranwell. There was a Tutor in the circuit at the same time conducting an overhead join.

Cranwell was operating RW08RH which had not been in use as frequently as RW26 due to the prevailing westerly winds. The threshold is much further away from the Tower and pillar positions in the VCR obscure the Final portion of the visual circuit.

Sequence of Events

At 1149:25 the [lead pilot of the] pair of Phenoms reported "*field in sight to tower*" and changed to the Cranwell Tower frequency. At this same time, the Prefect was turning onto the base-leg of the radar pattern.

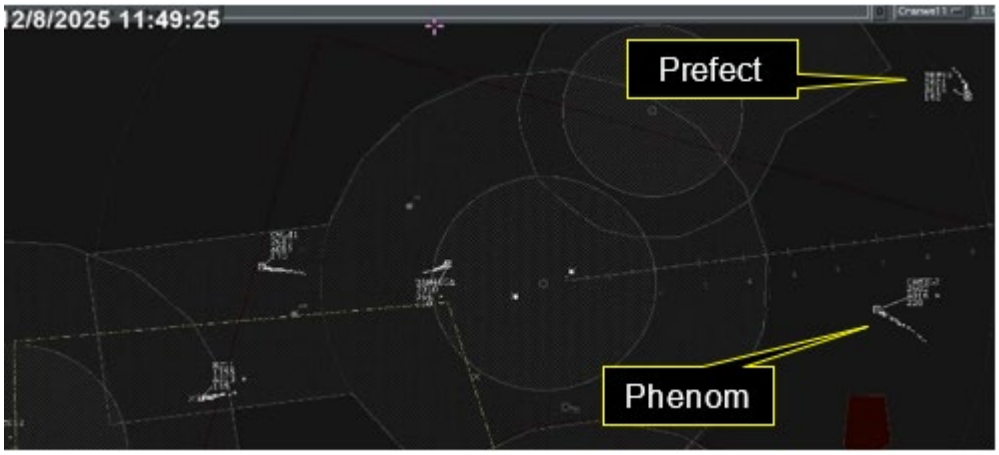

Figure 1- location of the Prefect and the Phenom formation at 1149:25.

[UKAB Secretariat note: presentation is with south to the top of the picture.]

At 1149:38, the [lead pilot of the] pair of Phenoms transmitted to Cranwell Tower *"…request join, 0-8, 1-0-1-6 set, For low run-in and break*"

At 1150:21, the Prefect was positioned at 8NM final for PAR and handed over to Cranwell Talkdown.

At 1150:34, the [lead pilot of the] pair of Phenoms reported Initials, "*Initial, Low, er, For the run-in and break, landing order will be 2 then 1.*"

At 1150:48, the [pilot of the] Tutor in the circuit transmitted "...*is visual with formation and, er, continuing with the, er, overhead join.*"

At 1151:13, Cranwell Tower broadcast "*Prefect, Seven miles, Low Approach, Further*" after receiving notification from Cranwell Talkdown.

At 1151:31, the Phenom lead [pilot] reported "…*On the break, low, land, landing order [C/S] 2, [C/S] 1*"

At 1152:59, Cranwell Tower transmitted "…*Confirm visual with the radar traffic at three miles?*", however the callsign was slightly clipped and could have been unintelligible by the Phenom pilot.

At 1153:03, the Phenom [pilot] reported "...*is final, gear down*"

At 1153:04, Cranwell Tower issued the landing clearance to the Phenom [pilot] "*Roger, Cleared to land*"

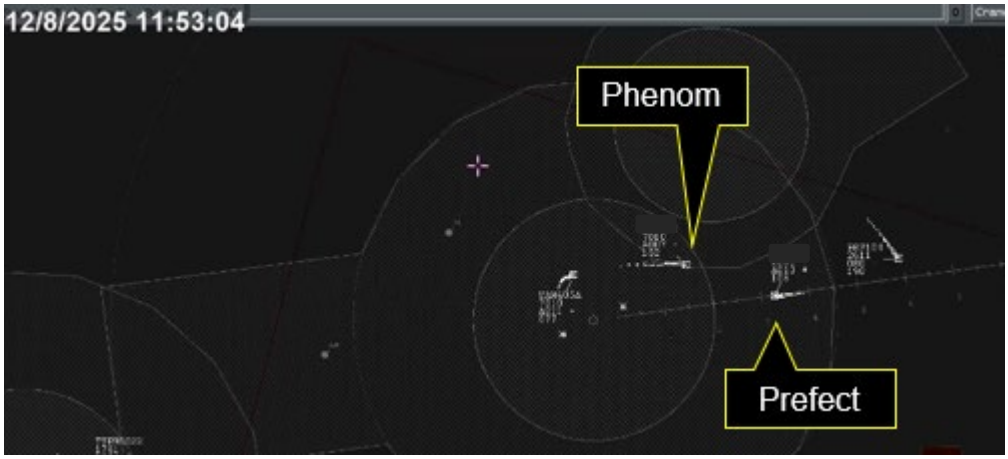

Figure 2 - location of the Prefect and Phenom formation at 1153:04 when the clearance was issued to the formation.

At 1153:13, Cranwell Talkdown requested clearance from Cranwell Tower for the Prefect "*Three miles, [C/S], low approach*". Cranwell Tower instructed "*[C/S], Break off the approach, two ahead.*"

At 1153:25, the Tutor [pilot] transmitted *"[C/S], downwind, land*", Cranwell Tower responded "*[C/S], Roger, Two ahead, formation.*"

At 1153:26, Cranwell Talkdown asked the Prefect [pilot] "*You visual with the aerodrome?*" The Prefect [pilot] responded, "*I think we just had an Airprox with the Phenom*".

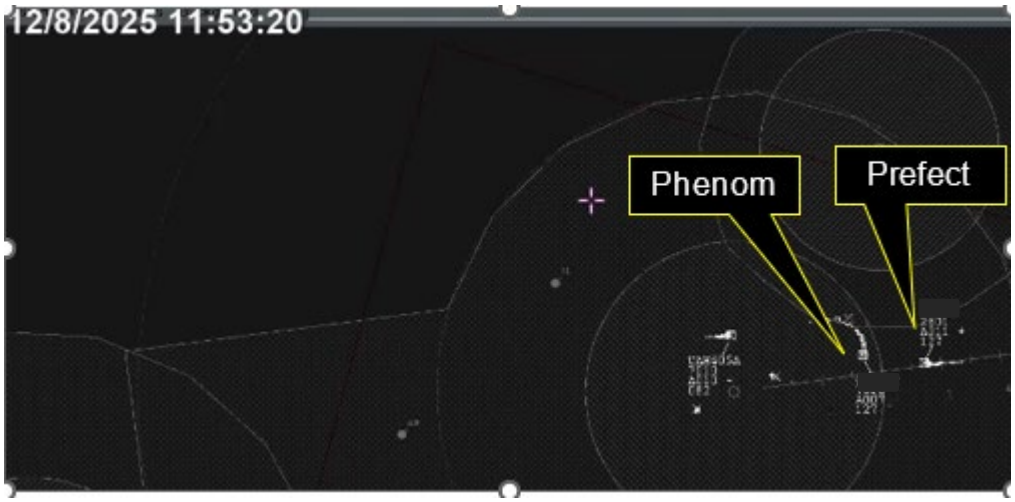

Figure 3 - radar picture at 1153:20, 6sec before the Airprox was declared by the Prefect pilot. The formation was indicating 700ft and the Prefect indicating 1100ft with ~ 1NM separation.

CPA occurred at 1155:03, with a separation of 0.1NM laterally and approximately 2800ft vertically. CPA occurred over a minute after the Airprox was declared and therefore is not accurate to the Airprox.

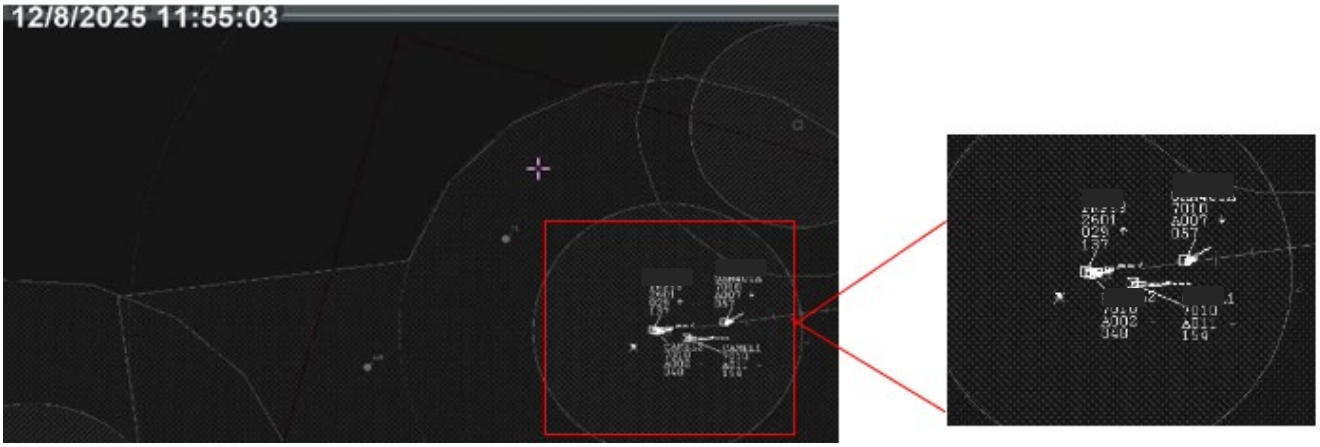

Figure 4 - radar picture at the point of CPA. This shows the Prefect conducting a Missed Approach and the lead Phenom landing.

Local BM Investigation

A local investigation was conducted by Cranwell following the event to identify the ATS-related factors. The outcome of the event was found to be that the Prefect and Phenom flew into confliction on simultaneous approaches to RW08RH.

It was found that it was the Cranwell Tower controller's belief that the Phenom formation was ahead and aware of the Prefect, therefore the Cranwell Tower [controller] acted iaw with local orders. Upon reflection after the event, it was suggested that an earlier decision to reassess the situation may have resolved the proximity in the final turn.

Contributory Factors/Actions.

The local investigation found the following:

a. Safety barrier of 7NM broadcast failed as the Phenom crews did not recall it.

i. Action. Several operating procedures were identified for review including Phenom VRIAB, IFR/VFR integration and circuit priorities.

b. The Cranwell Tower controller based the landing order assumptions on a legacy VRIAB Order. When the Phenom did not turn final at 1NM past the threshold, this assumption should have been reassessed.

i. Action. The investigation found a local farm had requested crews avoid overflight when on RW08RH due to noise. The crews were aware but stated it did not influence their decision. Nonetheless, an update was issued to all controllers to highlight this as a consideration.

c. The Phenom and Prefect pilots were only vaguely aware of each other due to their comms with TATCC Radar.

i. Action. Review the 3 minute to the break call and, if required, formalise the requirement for TATCC to always state the position of radar traffic to visual joining traffic.

d. All controllers were working at 'stretch' with little currency in busy/complex traffic levels.

i. No Action. Scheduling is outside ATC control. Traffic volume is monitored closely and restricted when required.

2 Gp BM Analysis

The local investigation conducted by the unit provided both an in-depth assessment of the controllers' actions but also has identified several areas within local procedures for review. The Cranwell Tower controller provided all relevant Traffic Information required in the form of visual circuit positions, however, it was based upon an assumption that the Phenom formation would be the first to recover, ahead of the Prefect.

Early reassessment of this assumption may have enabled an amendment to approach order and allowed the Phenom formation to position behind the Prefect. This scenario therefore demonstrates the importance of controllers regularly reassessing situations and remaining proactive to prevent a loss of safe separation.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft could be seen and identified using Mode S data with altitude shown in Flight Levels. The diagram at the top of the report was compiled using this data. The Phenom formation was visible in SSR only, probably due to their height and range from the NATS radar; this was not the picture available to the Cranwell controllers. As mentioned in the BM report, CPA was shortly after the Airprox was reported (see Figure 4), but by this time the Prefect pilot had been visual and established in the go-around, therefore, for analysis purposes, the Airprox separation was deemed to be at the point at which the Prefect pilot broke off the PAR with the Phenom turning final ahead of them (Figure 5).

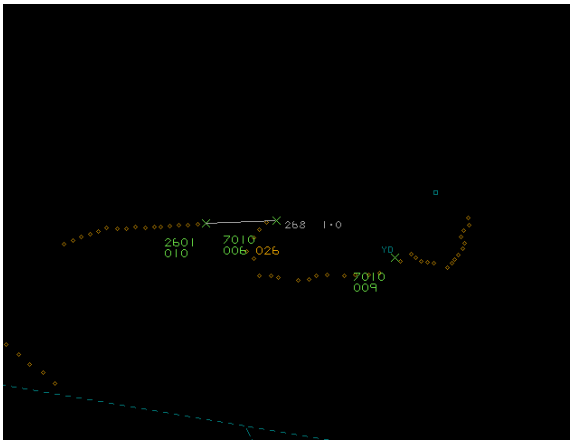

Figure 5 – 11153:26, the time at which the Prefect pilot reported the Airprox

The Prefect and Phenom 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] When two or more aircraft are approaching any place for the purpose of landing, the handling pilot of the aircraft at the lower altitude possesses the right of way but should not cut in front of another aircraft that is on final approach to land.[3]

Cranwell Occurrence Investigation

Sequence of Events

[1] MAA RA 2307 paragraphs 1 and 2.
[2] MAA RA 2307 paragraph 17.
[3] MAA RA 2307 paragraph 19.

A Prefect on a PAR and Phenom formation in the visual circuit flew into confliction on the approach to RW 08RH. This resulted in the lead Phenom rolling out on Final ahead of the Prefect, with the other Phenom extending and going around behind the Prefect.

The Prefect was on an IFT and the trainee was flying a PAR to RW08 at Cranwell. This permitted the QFI to monitor the trainee's performance via the PAR calls and had a good opportunity for lookout. They were on Stud 5 initially (TATCC) then passed to Cranwell for Talkdown (Stud 8). They heard [the] formation on Stud 5 and were expecting them to be in the circuit at approximately the same time. The weather conditions were hazy, however, the QFI could see the formation commence their break at the airfield and noted they were within 7NM of touchdown, therefore made the assumption the Prefect would be ahead of the Phenom for runway priority. Due to the haze, combined with colour scheme and aircraft cross section reducing, they lost sight of the Phenoms once they broke and turned downwind, but still expected they would be priority to the formation. A moment after hearing the 3NM call they were told to "*break off the approach 2 ahead*". From the PAR screen it can be seen the [Phenom C/S] 2 had only started to paint on the PAR, coincident with the call. The Prefect Captain took control and looked up to see a Phenom ahead, slightly below and unexpectedly close, belly up to them. They also saw a further Phenom at approximately the 4 o'clock position from their periphery view. The PAR controller tried to determine if they were visual with the aerodrome, but this was not confirmed as the crew declared an Airprox. They were unsure that they had sight of all aircraft in the vicinity nor were they confident they had full SA given their mental model that the Phenom formation would be routeing behind. Talkdown then told them to fly the "Missed Approach Procedure". A second R/T call from the Prefect [pilot] to re-state an Airprox was then made. The Prefect QFI was content to follow the MAP to ensure they safely flew away from the potential confliction.

Phenom crew

[The] formation was recovering and this was a staff training event with two trainees in the spare jump seats. The formation lead was passed to [C/S] 2 with the Pilot Flying as the Captain (LHS), and the Pilot Monitoring in the RHS. On the Phenom, the PM conducts the R/T. Whilst on stud 5 (RA) they were aware there was another aircraft (the Prefect) being vectored for the instrument pattern but were not aware of the exact position or intentions. The lead PM called 'visual to Tower' and left stud 5 to check in with Cranwell ADC. This was done promptly with no opportunity for Traffic Information to be passed. In any case, the TATCC RA controller, noting this was not a mandatory requirement, felt that the Prefect's position was sufficiently geographically separated that it would not affect the safe transfer of Phenom to Tower and had not intended to pass any information.

On checking in with Tower, [the formation] was informed of the visual circuit traffic, namely a Tutor in the overhead. The recovery plan was a run-and-break. Being on RW08RH, the PF Captain was in the LHS which made sight lines a little more difficult for seeing visual cues for turning. This was a busy time in the cockpit. The 7NM call was broadcast by the ADC which should have warned the formation of the IFR aircraft. However, this was sandwiched between calls from a Tutor (for departure) which may have caused [the Phenom] crews to assume this was a response to the Tutor rather than a call they should be listening for, as none of the [Phenom] crew members recall hearing the call. There is no requirement to respond to the 7NM warning call. The Captain stated that had they heard or been aware of this call, they would have questioned the prioritisation. The formation was visual with the Tutor in the overhead and not concerned with this aircraft. The formation broke approximately abeam the far threshold, overhead the tower. There is no standard place to commence the break for a VRIAB, but the Captain stated that they wished to permit sufficient time for all the downwind checks to be completed by both crews. They remained unaware of the Prefect being in the vicinity until Tower called "*confirm visual with radar traffic*" coincident with the lead aircraft turning in for final. Neither the PM nor PF in the lead aircraft were visual, although the PF consulted the ADS-B tablet and TCAS, and heard an aural cue in their headphones, and assessed from the returns that they were sufficiently ahead to safely continue the turn. The PM responded with the planned "Final" turn call albeit this did not fully address the query from ATC. Of note, [formation C/S] 2 commenced the Final turn marginally later than ATC expected. The second crew (formation wingman) became visual with the Prefect and assessed that it was unsafe to follow [the]

lead and extended behind prior to going around.

Findings and Recommendations

The crews had limited awareness of each other. The formation only became aware of the exact position of the Prefect when turning Final, while the Prefect pilot had assumed they had priority ahead of the Phenom. In reality, the formation was prioritised for recovery by the ATCO, with the Prefect on PAR expected to descend to decision altitude to fly a planned MAP behind the formation. However, the Prefect was closer than anticipated, resulting in the confliction.

Recommendation: A circuit usage review was initiated immediately after this occurrence, examining all conflict causes and contributory factors since flying training commenced under the UKMFTS umbrella. Preliminary findings have already been shared with the DDH, with further, all-stakeholder SQEP panels, being planned.

The ATC plan for recovery was to sequence the Phenom formation ahead of the Prefect on PAR, however this was not achieved due to insufficient spacing between the two elements.

Recommendation: To consider the reintroduction of the 3min warning call for units intending to conduct a VRIAB. This was recently removed for Phenom from the FOB in order to align with the lack of requirement for other aircraft types at Cranwell but should be reintroduced for all and additionally should specify an information broadcast call to visual circuit traffic by ATC.

The Prefect crew were aware of [the formation] recovering from previous transmissions on Stud 5 and were visual with the formation breaking into the circuit. However, there were no specific R/T SA calls made to them regarding landing priority and they lost visual with [the formation] post-break. PAR is conducted on a discrete frequency and there is no requirement to tell PAR traffic about visual circuit traffic until the 3NM call. This event occurred coincident with the 3NM call.

Recommendation: SQEP panel to be convened to discuss amending the 3/7 miles calls to 4/8 which is aligned with the majority of FJ RAF airfields.

There was no TAS traffic shown and no TAS warnings noted by the Prefect crew. This was an unmodified (ongoing fleet embodiment of TAS aerial relocation and hardware upgrade to improve performance and permit ASD-B in) aircraft with TAS being unreliable when detecting aircraft in the ahead and slightly below sector. Additionally, the Phenom wingman would not have been squawking. This resulted in SA of the Prefect pilot being limited to lookout only.

No Recommendation: Phase 1 of the modification programme (hardware) that includes relocation of the TAS antenna is due to be completed by end Jan 26.

The combination of hazy met conditions and the aircraft colour schemes of both Prefect and Phenom resulted in crews struggling to maintain visual contact. This was exacerbated by the mutual geometry in the latter stages.

No Recommendation: Paint scheme for both aircraft is a known operating concern that has been sentenced by the ODH.

[The] formation was aware of a Prefect somewhere in the IF pattern but was unaware of its proximity on the PAR (no mandated requirement to be told on Stud 5 prior to changing to Tower frequency) and missed the broadcasted 7NM call (due to assumption this was a response to a Tutor transmission). Furthermore, the ADC's response to their initial join call only included visual circuit traffic to affect, as per SOP, with the radar traffic not yet warned in.

No Recommendation: 45 Sqn is reiterating via Phenom SOPs and verbally, the requirement to await a radar traffic awareness call prior to moving to Stud 2. In addition, TATCC will remind controllers to provide this call. This second aspect is to be recorded separately on the ATC DASOR. There is

no requirement to read back the 7NM call as it is a broadcast call to all traffic in the visual circuit . Had [the formation crews] assimilated the 7NM call, the formation lead states they would have queried the circuit priority.

The formation lead commenced the VRIAB at the far threshold in order to permit formation elements adequate time for checks, believing that the circuit was clear with no potential conflicts.

No Recommendation: Break point to be determined on a case-by-case basis by formation lead dependant on circuit traffic and crew experience.

Visual references on RW08 are less prominent than on the reciprocal runway, exacerbated by the PF being in the LHS on a RH circuit. Although in this instance the lead Phenom turned final in the standard place, the observation angle from the Tower does not allow an accurate assessment to be made of the turn-in point.

No Recommendation: ATC has issued a stop press to highlight that RW08RH circuits may see aircraft extend downwind due to reduced visual references and that turn-in position assessment from the Tower is difficult due to the observation angle.

Observation: ATC has recently observed crews extending downwind on RW08. This is possibly due to a noise complaint raised by a house on the approach lane. However, although crews have been directed to avoid overflight where possible, it was clearly articulated that crews should not let this impact normal circuit activity. This was not a factor on this occasion.

Comments

HQ Air Command

The Phenom formation joined the visual circuit at RAF Cranwell without full situational awareness of the traffic situation around them. The Traffic Information provided by the Tower controller regarding the position of the Prefect was not assimilated by the crew of [the formation lead], and the Phenom pilot started their final turn without realising that they were turning to converge with the Prefect. The Prefect captain was monitoring the student's performance at conducting an instrument approach and would have expected priority over the visual circuit traffic given the published Priority List in the Cranwell Flying Order Book. The Tower controller did not expect the lead Phenom to turn final where they did, which brought the Phenom into conflict with Prefect, however they should not have issued the clearance to land to [formation C/S] 2; according to the FOB priority list, the Prefect had priority over the Phenom at that point, and the VCR controller should have instructed the Phenom to "Go around at circuit height". The PAR controller's instruction to the Prefect to "Break Off the Approach" was timely and probably increased the miss-distance between the Phenom and the Prefect at CPA. RAF Cranwell safety cell has conducted a thorough investigation and has made a number of recommendations to change procedures which should reduce the risk of reoccurrence.

Summary

An Airprox was reported when a Prefect and a Phenom flew into proximity at Cranwell at 1153Z on Tuesday 12th August 2025. The Prefect pilot was operating under VFR in VMC in receipt of a Traffic Service from Cranwell PAR, and the Phenom pilot was operating under VFR in VMC in receipt of an ACS from Cranwell Tower.

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 discussed the actions of the Prefect pilot. They had been conducting an IRT and had been on final approach receiving a PAR, with the instructor monitoring the student. The Prefect instructor had been aware of the Phenoms joining visually, but had assumed that, as the radar traffic, they would have had priority. Military members advised the Board that, as the Prefect pilot had been on an IRT, they had been correct in assuming that they should have had priority for their approach, but that, unfortunately, the ADC had believed that they could fit in the Phenoms ahead of the Perfect. When that plan had not worked out as envisaged, the ADC had issued a break-off instruction in order to ensure the safe separation of the aircraft. The Prefect pilot had followed the instructions issued by the Talkdown controller but had been concerned by the positioning of the Phenom turning onto final ahead of them (**CF8**). Members noted that the TAS on the Prefect would have been expected to have alerted to the Phenom, but had not (**CF6**), and military members briefed that there was a known aerial issue on the Prefect, furthermore, that there was a programme in place to rectify the issue and upgrade the hardware.

The Board then discussed the actions of the Phenom crews. When on the Approach frequency, they had heard that the Prefect had been recovering for a PAR, so had been broadly aware of the radar traffic. However, when they had called at Initials for their join, the Prefect had been outside 7NM, and so not included in the circuit Traffic Information provided by the ADC. When the ADC gave the 7NM broadcast for the radar traffic, the Phenom crews had not heard the broadcast, perhaps because it had followed a call from another pilot and had therefore been discounted. Nevertheless, members noted their surprise at this; there had been multiple crew members on board the two aircraft and it appeared that none of them had heard the call (**CF4**). However, the 7NM broadcast is not a call that would need to be acknowledged, so the ADC had not been aware that the Phenom crews had only had generic situational awareness about the position of the Prefect (**CF5**). The Phenom crew had broken onto downwind at a position later than would normally be expected, and some members wondered whether this had been contributory to the Airprox, because it would have made a difference to the controller who had believed that the Phenoms could have been sequenced ahead of the Prefect. However, they were told by military members that, whilst a call by aircrew if they know they will be breaking into the circuit at a position different to normal would be helpful to ATC, it had been for the controller to continually assess and reassess the situation. Similarly, the Board discussed whether the extension to the downwind leg for the noise avoid had affected the controller's plan, and again controlling members thought that the ADC had had the opportunity to amend the runway order if they had realised the situation. Indeed, some members opined that, had the Phenoms not extended their downwind leg, the Airprox may well have occurred with the second Phenom anyway. The Phenom lead therefore had continued their circuit as planned, without the knowledge that they would turn in front of the Prefect on radar. It had only been once they had called final, and the ADC had asked whether they had been visual with the radar traffic, that the lead crew had realised the situation but, as the controller had given a clearance to land, they had continued with their approach. The pilot of the lead Phenom, having turned ahead of the Prefect, had not been visual with it (**CF7**), although the pilot in the second Phenom had elected to go around.

The Board then turned to the role of ATC. They had already heard from military members that, according to Cranwell's FOB, the Prefect on the IRT should have had priority, but they were told that the controller had assessed that, because the Prefect pilot had intended to conduct a missed-approach anyway, the plan had been for the Phenoms to land ahead of the Prefect, meaning that everyone would have achieved the approach that they had required. Some members opined that, whilst it might be expected that the Prefect would be significantly slower than the Phenom, in fact the speed on the approach had been similar, and they wondered whether that had affected the controller's planning. Whilst it was not known whether this had been a factor, what was known was that the controller had expected that they would have been able to sequence the Phenoms ahead of the Prefect, but that due to various factors, including the positioning of the Phenom formation on the break, this had not happened (**CF3**). Members thought that the controller should have had plenty of time, once the Phenom formation had turned downwind, to have reassessed the situation, and that waiting until the Phenom pilot had called final before asking whether they had been visual could be considered to have been too late (**CF1**) and that, by that stage, the only option left to the controller had been to allow the Phenom pilot to continue their turn in front of the Prefect, and break off the Prefect pilot's approach (**CF2**).

When determining the risk of the Airprox, the Board considered the reports from both pilots and the controllers together with the radar replay data. Members noted that, although the controller had allowed the situation to develop, once it had become obvious that the Phenom lead had been closer to the Prefect than anticipated, the controller had opted for the safe option and had issued a break-off clearance. They therefore unanimously agreed that, although safety had been degraded, there had been no risk of collision; Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2025179			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Human Factors	• Conflict Detection - Detected Late	An event involving the late detection of a conflict between aircraft	
2	Human Factors	• Conflict Resolution - Provided Late	An event involving the late provision of conflict resolution	
3	Human Factors	• Traffic Management Information Provision	An event involving traffic management information provision	
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
4	Human Factors	• Monitoring of Communications	Events involving flight crew that did not appropriately monitor communications	
5	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			
6	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			
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	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[4]

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 **partially effective** because the Tower controller had not realised that the Phenom formation had extended their circuit, and that this would conflict with the Prefect on the PAR and were therefore not able to offer a conflict resolution until a late stage.

Flight Elements:

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

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the Phenom crews had not heard the 7NM radar broadcast and had only generic information on the Prefect on a radar approach.