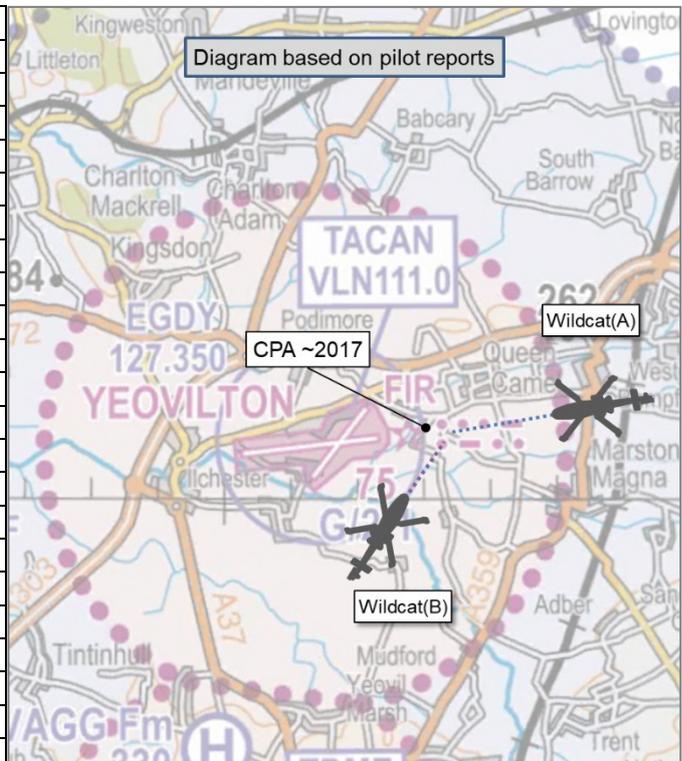


**AIRPROX REPORT No 2020158**

Date: 03 Nov 2020 Time: 2017Z Position: 5100N 00238W Location: Yeovilton

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	Wildcat(A)	Wildcat(B)
Operator	HQ JHC	RN
Airspace	Yeovilton ATZ	Yeovilton ATZ
Class	G	G
Rules	VFR	VFR
Service	Traffic	ACS
Provider	Yeovilton Talkdown	Yeovilton Tower
Altitude/FL	NK	NK
Transponder	A, C, S	A, C, S
<b>Reported</b>		
Colours	Grey	NR
Lighting	Strobes, Nav	NR
Conditions	VMC	VMC
Visibility	>10km	15km
Altitude/FL	800ft	1200ft
Altimeter	QFE (1022hPa)	QFE
Heading	264°	NR
Speed	100kt	NR
ACAS/TAS	TAS	TAS
Alert	TA	TA
<b>Separation</b>		
Reported	150-200ft V/100m H	400ft V/2-300m H
Recorded	NK	



**THE WILDCAT(A) PILOT** reports they were conducting a Practice Pan and were identified on a Traffic Service from Yeovilton Approach and vectored for ILS RW26 following a simulated inadvertent entry into IMC. The aircraft remained in VMC throughout and was being flown by the student HP with the Instructor carrying out NHP duties. RW26 lighting was requested to 'on'. The NHP thought that the lighting was still set to 'off' for NVG departures. At 1700ft QFE the Approach controller handed the aircraft over to the Talkdown controller and the Wildcat descended on the glidepath and at approximately 800ft QFE and 2NM from the airfield the crewman called "traffic 11 o'clock conflicting." The NHP called 'visual' and determined that the unidentified aircraft was approaching from left to right approximately 150-200ft above and appeared that the track would take it over the top of the Wildcat. The NHP decided that there wasn't safe separation, took control of the aircraft and turned SW maintaining a descent. Once clear of the unidentified aircraft the Instructor maintained at the controls, called an Airprox and landed on threshold RW26. Whilst monitoring the Tower frequency the crew heard comms from an aircraft in the circuit for RW22. RW22 was briefed as the duty runway during the night flying brief at 1630hrs but the crew could not recollect the Approach controller stating that RW26 was the non-duty runway when asking for the procedure minima or having any traffic reported throughout the sequence.

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

**THE WILDCAT(B) PILOT** reports that they called downwind RW22 Left at 1000ft QFE (non-NVD) and were informed of the ILS traffic and were visual. Wildcat(A) appeared to have a flight path that would place it below and behind them. As Wildcat(A) continued it 'bloomed' rapidly and the pilot could make out the navigation lights which indicated that it was closer than they had expected it to be. They instructed the student to start a climb to increase the separation and believed they reached 1200ft QFE as Wildcat(A) passed behind. They did not consider the proximity to constitute an Airprox, but it could have if they had not initiated a climb to increase separation. This was discussed in the debrief as they,

(Wildcat(B)) had called 'visual' and therefore assumed primary responsibility for deconfliction, and that distance estimation by night was difficult. Clearly [Wildcat(A) C/S] was not expecting circuit traffic and was operating on a different radio channel so was not aware that they were visual and deconflicting. The pilot noted that they held Wildcat(A) on TAS throughout. The TAS alert was generated as Wildcat(A) closed to 1NM from them. As they were visual they acknowledged the TAS alert and maintained the circuit pattern. They estimated that the closest proximity of the two aircraft was 400ft vertically and 2-300m horizontally, although as Wildcat(A) passed astern and below them, they were not visual with it as it did so. Had they not climbed their aircraft, the pilot believed that the vertical separation would have been approximately 200ft. They held Wildcat(A) visual from the ATC call and it did not hold a constant bearing (collision threat) from their aircraft; it steadily moved right and down across their field of vision, therefore they considered the risk of collision to be low.

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

**THE YEOVILTON TALKDOWN CONTROLLER** reports that whilst conducting the duties of Talkdown controller during the night flying period, [Wildcat(A) C/S] was vectored by the Approach controller for an ILS to the non-duty runway. RW22 was the active runway for the night flying period and one aircraft was active in the circuit to the duty runway. The Approach controller had requested the non-duty runway approach in advance and the talkdown was conducted in a standard pattern. The aircraft requested the runway lights to be switched on but due to the aircraft in the active circuit requiring the lighting on, there was a delay in changing the lighting. The aircraft was given a clearance to land on the threshold of RW26 and continued its approach. At 2.5NM a contact appeared on the talkdown tube that appeared to be the active circuit traffic. The contact although converging on the azimuth screen was height separated and never posed a direct collision threat. At approximately 1.5NM the aircraft not on their frequency began to climb to gain further separation from [Wildcat(A) C/S]. At this point [Wildcat(A) C/S] called an Airprox. The pilot stated that the Wildcat helicopter in the talkdown tube was 200ft above them. The controller acknowledged the Airprox call and the approach continued normally with the pilot calling visual with the airfield at decision height and changing frequency to the Tower controller.

The controller perceived the severity of the incident as 'Low'.

**THE YEOVILTON AERODROME CONTROLLER** reports they were the Aerodrome Controller during routine night flying operations at RNAS Yeovilton. Based on the weather forecast, the duty runway was RW22. Whilst they had no traffic on frequency, the Approach Controller had informed the DATCO that they would be vectoring an air system (Wildcat(A)) for an ILS to non-duty RW26. Shortly after, [Wildcat(B) C/S] conducted a PAR to RW22, to then join the green NATO T abeam the duty runway for further visual circuits. After two or three circuits to the T, another aircraft joined visually for the green NATO T. This prompted [Wildcat(B) C/S] to reposition for RW22 and operate standard left hand circuits to the duty runway. As this occurred, the previously prenoted ILS traffic (Wildcat(A)) had begun an ILS approach to RW26 with approximately 6NM to run (to land). The controller cleared an aircraft for take-off from the Green T. They then cleared [Wildcat(B) C/S] for take-off from RW22. When [Wildcat(B) C/S] turned downwind for RW22 and transmitted this, the Talkdown controller called to request the runway lights be set for RW26. The controller liaised with [Wildcat(B) C/S] to determine whether or not they needed runway lights for their approach to RW22, and it was determined that they did. Meanwhile the Talkdown controller broadcast a 4 mile range call for [Wildcat(A) C/S]. At this point they informed [Wildcat(B) C/S] of the radar traffic at 4NM and confirmed they were visual with it. Shortly after they issued a clearance for [Wildcat(A) C/S] to land threshold RW26, having determined that [Wildcat(B) C/S] was clear of the RW26 approach. At this point [Wildcat(B) C/S] stated they would orbit late downwind for RW22 while the lights were switched to RW26. Not long after, one of the controllers from the radar approach room informed the DATCO that [Wildcat(A) C/S] had declared an Airprox on the Talkdown frequency. [Wildcat(A) C/S] landed safely, and was held short of RW22 for [Wildcat(B) C/S] to make their approach after the runway lights had been switched back to RW22.

The controller perceived the severity of the incident as 'Low'.

**THE YEOVILTON SUPERVISOR** reports that they agreed with the narrative written by the ADC. They noted that they were unable to change the runways due to the fixed NATO T for RW22. This NATO T work would usually be conducted at RNAS Merryfield, however the aircraft using it elected to fly at RNAS Yeovilton instead. Furthermore, the runway selected earlier in the day was based on a forecast of 220° at 07 knots, however during the night flying period the wind was calm and favoured no runway in particular.

## Factual Background

The weather at Yeovilton was recorded as follows:

METAR EGDY 031950Z 03002KT 9999 FEW040CB 05/03 Q1024 NOSIG RMK BLU BLU=

## Analysis and Investigation

### UKAB Secretariat

The Airprox could not be seen on the NATS radars due to the aircraft being beneath the radar coverage. At Figure 1 the Wildcat(A) can be seen on the ILS to RW26, however the visual circuit traffic cannot be seen. The Wildcat fades from the NATS radars at the next radar sweep.

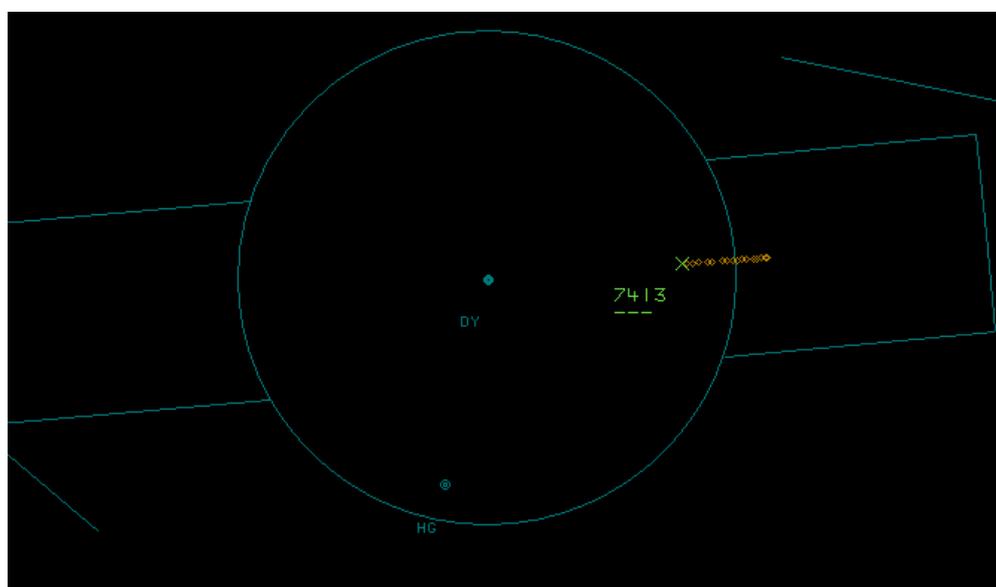


Figure 1: 2016:23

The Wildcat(A) and Wildcat(B) 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>

## Occurrence Investigation

### Yeovilton Investigation

The airfield opened for night flying at 1830hrs. The incident in question occurred at approximately 2000hrs. The controllers were all in the same position as they had been since 1830 and had therefore been controlling for around 1hr 30. Rotary air-systems were operating in the visual circuit to RW22. As a result, the runway lighting was aligned to RW22. The radar room then requested an ILS against the flow (RW26). The VCP team were aware well in advance and began planning when the ILS traffic (Wildcat(A)) was at 10NM. The VCP team were also visual with the ILS traffic at a range of 10NM. Discussion took place between DATCO and ADC off-comms regarding deconfliction with the visual circuit. A decision was made to not climb circuit traffic to 1500ft (as per fixed-wing

<sup>1</sup> SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

visual circuit vs ILS against the flow procedures). The plan was to ensure the pilot in the visual circuit became visual, or would be held to the south of the approach to RW26.

Traffic Information was passed to [Wildcat(B) C/S] (the only conflicting traffic). The pilot reported visual with the ILS traffic, and was therefore allowed to continue with the circuit pattern. The ILS traffic was handed to Talkdown at approximately 6.5NM. At 6NM [Wildcat(A) C/S] requested the runway lights for RW26. The lights were still aligned to RW22 to accommodate the visual circuit traffic. The lights remained aligned to RW22 for the first 2.5NM of the ILS approach. At around 4NM a discussion took place between the ADC and Talkdown controller regarding the lights being switched to RW26 to accommodate [Wildcat(A) C/S]. The ADC did not immediately change due to the requirements of the circuit traffic.

At 3NM the Talkdown controller requested clearance on the radar clearance line. Clearance was given and the lights changed for RW26. At approximately 2NM conflicting traffic appeared on the PAR display, with a risk of collision evident in both elements. Unbeknownst to the Talkdown controller, this traffic was [Wildcat(B) C/S] in a RH circuit to RW22. Although aware of the conflicting traffic, the Talkdown controller opted not to call it to [Wildcat(A) C/S]. No liaison call took place between VCP and the radar room regarding the circuit traffic.

Between 2NM and 1.5NM [Wildcat(B) C/S] initiated a climb to ensure vertical separation from the ILS traffic. This ensured there was no risk of collision in the elevation display. [Wildcat(B) C/S] passed in front and above [Wildcat(A) C/S].

At approximately 1.5NM [Wildcat(A) C/S] called an Airprox. The Talkdown controller acknowledged this, and confirmed it was traffic passing left to right above (therefore confirming it was [Wildcat(A) C/S]). [Wildcat(A) C/S] was visual at this point and elected to change to ADC frequency. A liaison call then took place between the radar room and VCP informing them that an Airprox had been reported.

The Investigation found that:

The Yeovilton DAM gave no specific guidance as to how rotary visual circuit traffic should be controlled during an ILS against the flow. The DAM did state that fixed-wing traffic should either be climbed to 1500ft by 6NM or 4NM (dependent on speed of ILS traffic), or landed by these same points, but made no reference to the control of rotary in the same situation. A recommendation was made to update the DAM and the ILS against the flow procedure has been suspended.

The VCP team did not communicate with the radar room with regard to the plan for visual circuit traffic. [Wildcat(B) C/S] was visual with [Wildcat(A) C/S] and able to achieve safe separation whilst conducting their circuit, but this information was not passed to either the Talkdown or APP controller.

The Talkdown controller did not call the conflicting traffic, despite there being a risk of collision in at least one element. This meant that [Wildcat(A) C/S] was unaware of the intentions and position of [Wildcat(B) C/S] until they became visual with it - at which point an Airprox was called on the Talkdown frequency.

During interviews post-incident, there was evident confusion as to whether the ILS against the flow procedure was a VFR procedure or an IFR procedure. This contributed to the Talkdown controller's decision to not call the traffic; they believed the aircraft on Talkdown was flying VFR and would therefore be aware of visual circuit traffic.

Although range calls were given by the Talkdown controller at 6, 4, and 3NM on the radar clearance line, these were not broadcast on the ADC frequency. This meant that the crew of [Wildcat(B) C/S] were reliant on estimating distance between themselves and [Wildcat(A) C/S] by visual means only.

The ADC controller had several aircraft on frequency at the time of the incident. There was also a requirement to change runway lights from RW22 to RW26 at an appropriate moment that did not negatively impact on traffic in the visual circuit. The DATCO was positioned by the lighting panel to enact this change. This all contributed to a distraction for both ADC and DATCO which likely led to the liaison call with Talkdown and range calls on ADC frequency being missed. Post-incident direction has been issued stating that frequent lighting changes are not to occur during night flying unless a command decision is made to the contrary during the night flying brief.

## Comments

### JHC

This is a clear example of how a lack of situational awareness (SA) can amplify the risk of a situation for one party and not the other. With no traffic information being passed on the circuit traffic, and specifically the fact it was operating to a different runway, this meant that the events and proximity of the other aircraft were not as the Wildcat on instrument approach would have expected. As such the pilot was concerned by the proximity of the other traffic and took action to increase separation. Whilst the circuit traffic also took action to increase separation they did so with enhanced SA and as such considered the risk of collision to be low, and not necessarily constituting an Airprox. To echo the findings of the investigation, better communication between the Visual and Approach controllers, and subsequently to the traffic they were controlling, would have prevented the surprise factor felt by the pilot on an instrument approach and perhaps changed the perception of the event from their view point. JHC welcomes the recommendations of the investigation to review the DAM and specifically the procedures for ILS against the flow.

### Navy HQ

An investigation was conducted in to this Airprox using DASORs from Yeovilton ATC, 815 NAS and 652 Sqn AAC, along with tape transcripts and radar replays.

From the investigation it was evident that there were a number of breakdowns within ATC both in adequately planning to deconflict the aircraft and in the communication between controllers that ultimately led to the incident. It was noted that the Talkdown controller failed to provide any form of Traffic Information and or situational awareness to the pilot conducting the ILS, despite a risk of collision being displayed on the talkdown console, contravening RA3291(1). This was further compounded by the VCP team failing to communicate their deconfliction plan with the APP room.

The investigation also highlighted an organisational breakdown within Yeovilton ATC, in the production of local procedures being robust enough to cater for situations controllers could reasonably be expected to be faced with. This ultimately led to confusion amongst the controllers over the correct procedure to apply for rotary-wing conducting ILS against the flow, as at the time, the procedures in the Yeovilton DAM only catered for fixed-wing.

It is also worth noting from the investigation that all controllers involved were relatively inexperienced first tourists. Many units have suffered recently from the dilution of experience within their controller workforce. Ultimately, the controllers involved, lacked the breadth of experience to fall back on to deal with the situation they were presented.

Post the occurrence, all controllers involved were thoroughly debriefed on the incident using radar and tape replays. Subsequently all underwent Unit Standards Checks prior to recommencing controlling duties. A Supervisor position has now been created and brought in to the night flying workforce structure to provide oversight for junior crews. The ILS against the flow procedure has also been suspended pending a full review.

This Airprox highlights not only the need for controllers to be fully conversant with local procedures but also to utilise them as back stop where situations are presented to them that may not have been necessarily catered for. It also highlights the need for thorough communication between all

individuals involved in the control of air systems. Had the above actions been considered and followed by the Yeovilton ATC team that evening, it is unlikely the Airprox would have occurred in the first instance. Due to good aircrew lookout and actions at the time, the potential for a MAC was avoided.

## Summary

An Airprox was reported when two Wildcats flew into proximity at Yeovilton at around 2017Z on Tuesday 3<sup>rd</sup> November 2020. Both pilots were operating under VFR in VMC at night, the Wildcat(A) pilot in receipt of a Traffic Service from Yeovilton Talkdown and the Wildcat(B) pilot in receipt of a ACS from Yeovilton 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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments.

The Board first looked at the role that ATC had to play. Members with controlling experience opined that a lack of communication had been a key component of the Airprox. They noted that initially confusion had occurred because of the ILS against the flow procedure. The Yeovilton DAM only contained procedures for fixed-wing aircraft and not helicopters (**CF1**) so the ADC did not climb the visual circuit traffic to keep it out of the way of the ILS, as they would have done had the visual circuit contained fixed-wing aircraft. In allowing the visual circuit to continue, the ADC then had the issue of the runway lights being needed by the instrument traffic on RW26 and the visual circuit traffic on RW22. The liaison calls between Talkdown and ADC about this probably served as a distraction because the ADC did not then broadcast the standard inbound calls at 6, 4 and 3NM (**CF2**), which meant that the Wildcat(B) pilot did not have accurate Traffic Information on the inbound ILS traffic (**CF5**). Furthermore, when the clearance to land on the threshold of RW26 was given at 3NM, the ADC did not include the details of the visual circuit traffic, so the Wildcat(A) pilot also did not have accurate Traffic Information (**CF7**). For their part the Talkdown controller could only pass the clearance as given by the ADC, although a more experienced controller may have queried the clearance and asked for a visual circuit state. Nevertheless, once the Wildcat(B) became visible on the Talkdown radar the controller should have provided Traffic Information to the Wildcat(A) pilot (**CF2, CF5**). The Board was told by the RN member that there would normally be an assistant on duty in the visual control room (VCR) and that this assistant would be responsible for switching the lights (once told to do so by the ADC). However, due to COVID restrictions, the assistant position was not manned, meaning that the ADC had additional tasks normally covered by the assistant (**CF3**). Additionally, Yeovilton operates with a DATCO in the VCR who would provide a degree of supervision, but on this occasion the DATCO was also involved in the switching of the lights and members thought the liaison required between the controllers was probably a distraction for both (**CF4, CF6**). The Board were told that on this occasion the controllers on shift, whilst being qualified in their controlling positions, were relatively inexperienced and as a consequence of this Airprox it had been decided that an additional Supervisor for the ACR would be rostered in future, which the Board were heartened to hear. Additionally they noted that Yeovilton had already identified that the ILS against the flow procedures needed to be updated and that in the meantime, the procedure had been suspended.

Remaining with the theme of Supervision, members queried whether it was standard practise for a duty pilot to be within the tower during night flying. They were told that a duty pilot was available on the night, but that it was usual for the role to be covered away from the tower, and the individual called to the tower if needed, therefore the duty pilot was not in the tower at the time of the Airprox. Turning to the flight elements of the Airprox, members first wondered whether the night briefing had been thorough

enough, given that the Wildcat(A) pilot was not aware that the duty runway was RW22 and that the other squadrons were not aware that an ILS against the flow would be undertaken (**CF8, CF9**). Once airborne and in the RW22 circuit, Wildcat(B) pilot did not receive Traffic Information on the range of the other Wildcat approaching RW26 from any ATC broadcasts, (**CF10**), however, ATC had warned them about the traffic and they were visual with it and had further situational awareness from their TAS alerts (**CF11**). Wildcat(A) pilot also did not receive any situational awareness from ATC (**CF10**) and without the information on visual circuit given with the clearance, had no knowledge that the RW22 visual circuit was active. Given that it was notoriously difficult to judge distances at night members could understand why the pilot would be concerned by the proximity of the other aircraft (**CF12**).

Finally, in assessing the risk of the Airprox, members quickly agreed that because the Wildcat(B) pilot had been visual with Wildcat(A), and that both pilots had taken action to increase the separation, there had been no risk of collision. Nevertheless, given the lack of communication from ATC and the confusion over the procedures for the ILS against the flow, they judged that safety had been degraded; Risk Category C.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

	2020158		
CF	Factor	Description	Amplification
	<b>Ground Elements</b>		
x	<b>• Regulations, Processes, Procedures and Compliance</b>		
1	Organisational	• ATM Information Provision	Inadequate regulations or procedures
2	Human Factors	• ATM Regulatory Deviation	Regulations and/or procedures not fully complied with
x	<b>• Manning and Equipment</b>		
3	Organisational	• ATM Staffing and Scheduling	Sub-Optimal establishment or scheduling of staff
4	Human Factors	• Leadership and Supervision	
x	<b>• Situational Awareness and Action</b>		
5	Human Factors	• ANS Traffic Information Provision	TI not provided, inaccurate, inadequate, or late
6	Human Factors	• Distraction - Job Related	Controller engaged in other tasks
7	Human Factors	• ATM Coordination	
	<b>Flight Elements</b>		
x	<b>• Tactical Planning and Execution</b>		
8	Organisational	• Flight Planning Information Sources	Inadequate planning material
9	Human Factors	• Pre-flight briefing and flight preparation	
x	<b>• Situational Awareness of the Conflicting Aircraft and Action</b>		
10	Contextual	• Situational Awareness and Sensory Events	The pilot had generic, late or no Situational Awareness
x	<b>• Electronic Warning System Operation and Compliance</b>		
11	Contextual	• Other warning system operation	Warning from a system other than TCAS
x	<b>• See and Avoid</b>		
12	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk:

C.

## Safety Barrier Assessment<sup>2</sup>

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 the Yeovilton DAM did not have procedures for rotary-wing ILS against the flow.

**Manning and Equipment** were assessed as **partially effective** because COVID restrictions meant that there was no assistant on duty in the VCR, which meant the DATCO was not able to properly supervise because they became embroiled in covering the assistants' tasks.

**Situational Awareness of the Confliction and Action** were assessed as **ineffective** because neither controller gave accurate Traffic Information to the aircraft on their frequency.

### Flight Elements:

**Tactical Planning and Execution** was assessed as **ineffective** because neither pilot was given sufficient Traffic Information to enable them to adapt their plan to the circumstances.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **partially effective** because the Wildcat(A) pilot was not given Traffic Information on the visual circuit traffic and the visual circuit traffic was not given 6NM, 4NM and 3NM broadcast calls.

Airprox Barrier Assessment: 2020158		Outside Controlled Airspace						
Barrier	Provision	Application	Effectiveness					
			Barrier Weighting					
			0%	5%	10%	15%	20%	
Ground Element	Regulations, Processes, Procedures and Compliance	⚠	✅					
	Manning & Equipment	⚠	⚠					
	Situational Awareness of the Confliction & Action	✅	❌					
	Electronic Warning System Operation and Compliance	⚪	⚪					
Flight Element	Regulations, Processes, Procedures and Compliance	✅	✅					
	Tactical Planning and Execution	❌	✅					
	Situational Awareness of the Conflicting Aircraft & Action	⚠	✅					
	Electronic Warning System Operation and Compliance	✅	✅					
	See & Avoid	✅	✅					
<b>Key:</b>			Full	Partial	None	Not Present/Not Assessable	Not Used	
Provision	✅	⚠	❌	⚪				
Application	✅	⚠	❌	⚪		⚪		
Effectiveness	✅	⚠	❌	⚪			⚪	

<sup>2</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).