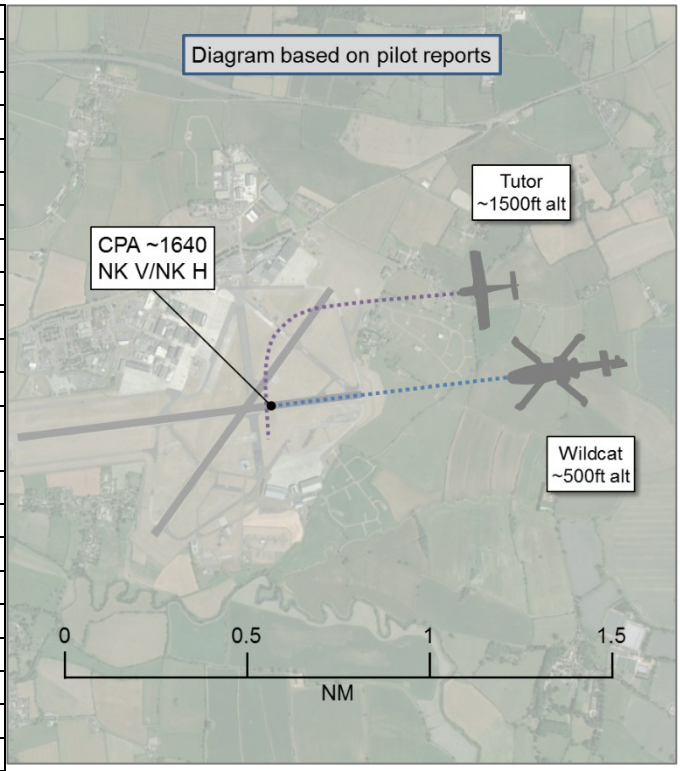
AIRPROX REPORT No 2020016

Date: 05 Feb 2020 Time: 1640Z Position: 5100N 00238W Location: RNAS Yeovilton

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Wildcat	Tutor
Operator	HQ JHC	RN
Airspace	Yeovilton ATZ	Yeovilton ATZ
Class	G	G
Rules	IFR	VFR
Service	Traffic	ACS
Provider	Yeovilton Approach	Yeovilton Tower
Altitude/FL	NK	NK
Transponder	A, C, S	A, C
Reported		
Colours	NR	White/Blue
Lighting	Strobe lights, nav lights, landing light	HISLs, strobe lights
Conditions	VMC	VMC
Visibility	20km	20km
Altitude/FL	500ft	1500ft
Altimeter	QFE (1033hPa)	QFE
Heading	264°	180°
Speed	100kt	80kt
ACAS/TAS	TAS	TAS
Alert	TA	TA
Separation		
Reported	150m V/NR H	1000ft V/0m H
Recorded	NK	



THE WILDCAT PILOT reports that the handling pilot was conducting simulated instrument flying, with the other 2 members of the crew looking out. Vectors for an ILS approach to RW26 and a Traffic Service were requested and given. The intent for further instrument approaches had also been passed to ATC. While carrying out the ILS, the non-handling pilot noticed a fixed-wing aircraft crossing the RW centreline approximately 500m ahead. The fixed-wing aircraft remained on the dead-side while the rest of the approach was carried out. On passing Decision Height, the handling pilot (simulated not visual) carried out the go-around procedure as instructed by ATC, initiating a climb on RW track to a height of 2000ft. As directed, the crew changed from the Yeovilton Talkdown frequency to the Yeovilton Approach frequency; instructions were given again to climb on RW track to 2000ft. At this point, the non-handling pilot noticed the fixed-wing aircraft above banking left and crossing the RW centreline. The non-handling pilot told the handling pilot to stop the climb in order to avoid climbing into the fixed-wing aircraft. The fixed-wing aircraft then passed approximately 150m above. Once clear, the non-handling pilot informed ATC of the Airprox and continued with a further ILS as planned.

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

THE TUTOR PILOT reports that they were flying the circuit element of an Elementary Flying Training pre-end-of-course check. After making the 'final' call, they were instructed to go around due to radar traffic. Their aircraft had only descended a few hundred feet, so they climbed back up to the glide circuit height of 1500ft, became visual with the radar traffic at 2NM and positioned dead-side. Realising that the 2 aircraft had similar groundspeeds, and with nothing else in the visual circuit, the instructor elicited from their student that the best course of action was to turn very early to downwind to pass over the instrument traffic by about 1000ft, rather than follow it into wind while it visually climbed through the visual circuit. They therefore passed over the Wildcat prior to reaching the runway intersection. In summary, they were visual with the traffic, in an active visual circuit in Class G airspace and maintained

greater than the minimum distance required, estimating never less than 1000ft separation at the closest point.

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

THE YEOVILTON APPROACH CONTROLLER reports that the Wildcat pilot was carrying out a low-approach with the intention of conducting further approaches. As the aircraft climbed, they instructed the pilot to climb to 2000ft and, on passing 1700ft, turn right onto a heading of 040°. The Wildcat pilot then reported a light fixed-wing aircraft crossing right-to-left. The controller acknowledged this and the Wildcat pilot informed them that their climb would be stopped. The controller asked the pilot to report clear of the traffic, which they did, and then continued their climb. Once the Wildcat was approximately 4NM downwind to RW26, the Wildcat pilot informed them that they wished to report an Airprox. The Wildcat was estimated to be within 150m of the fixed-wing aircraft.

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

THE YEOVILTON TOWER CONTROLLER reports that the Tutor was in the fixed-wing visual circuit for RW26, conducting a glide circuit to touch-and-go; the Wildcat was conducting an instrument approach to RW26. The controller was aware from visual lookout, radar liaison calls and the Aerodrome Traffic Monitor that it was likely that one of the aircraft wasn't going to be able to complete their intentions. However, they decided to allow the aircraft to proceed and adhere to the 'first come first' principle. The 3-mile clearance call came from the Radar controller and they issued a clearance to the Wildcat pilot to conduct a low-approach. However, before they could transmit the information call on the radar traffic at 3 miles, the Tutor pilot called finals and so they instructed the Tutor pilot to go around. They used the Radar Clearance Line to notify the Radar controller that there was "*one in, going around*". They then transmitted the information call on the radar traffic. The Tutor pilot went around and was established dead-side as the Wildcat flew down the RW in level flight at about 200ft. As both aircraft came abeam the ATC Tower, and with the Wildcat still in level flight along the RW, the Tutor pilot – at circuit height – elected to turn early downwind. From the view of the ADC position, the Tutor pilot turned over the top of, or slightly behind, the Wildcat with at least 500ft of separation.

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

THE YEOVILTON DUTY ATCO reports that it was a moderately busy afternoon. The Tower controller was working fairly hard with hover checks, non-standard recoveries and two Tutors in the circuit, but they were not overburdened. The Wildcat was on the PAR display and the Tower controller had broadcast this to the circuit traffic. The Tutor was downwind conducting a glide circuit. The 3-mile call was made for the Wildcat and a clearance to conduct a low-approach to RW26 given. Following this, the Tutor pilot called final. Due to the position of the radar traffic, and the fact that it had already been given a clearance, the Tutor pilot was instructed to 'go around' – this was broadcast on the Radar Clearance Line and read back by the PAR controller. The Tutor crossed ahead of the radar traffic to the dead-side, north of the RW, at approximately 1000ft. The Wildcat pilot maintained runway track and flew along the runway at approximately 500ft. When abeam the tower, the Tutor pilot turned crosswind early; from the controller's perspective, the Tutor looked to be turning behind the Wildcat and well above. The Tutor pilot was visual with the radar traffic. The DATCO was later informed that the Wildcat pilot had declared an Airprox.

Factual Background

The weather at Yeovilton was recorded as follows:

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METAR EGDY 051650Z 17003KT 9999 FEW038 SCT200 08/03 Q1036 NOSIG RMK BLU BLU=
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Analysis and Investigation

UKAB Secretariat

The incident took place below the base of NATS radar coverage. Therefore, it has not been possible to measure the vertical and/or lateral separation between the 2 aircraft.

The Wildcat and Tutor pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[1] An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation.[2]

Occurrence Investigation

The Wildcat helicopter was conducting instrument approaches to RW26 at Yeovilton. The handling pilot was flying with reference to their instruments; the aircraft commander and the aviation crewman were maintaining lookout. The weather was reported to be good, with 10km or more visibility and broken cloud at 3000ft. Another helicopter was conducting hover checks on the airfield and there were 2 fixed-wing aircraft in the visual circuit. The Tower controller was working fairly hard but was not overloaded. A Grob Tutor was conducting the circuit element of an Elementary Flying Training exercise (pre-end-of-course-check).

The Wildcat pilot requested vectors for the ILS for RW26 and a Traffic Service, both of which were given. The pilot then passed their intentions for further instrument approaches to be conducted. The Tower controller broadcast the intentions of the Wildcat when it was 6 miles out, and this was quickly followed by a call from the Tutor pilot reporting "*downwind, glide, touch-and-go*", which was acknowledged by the Tower controller immediately before passing the details of a Merlin about to depart. The Tower controller could see that it was likely that one of the aircraft was not going to be able to complete their intentions, but decided to let them proceed and adhere to the 'first come, first served' principle. No priority was given to either aircraft.

When the Wildcat was 3NM from the RW, the Radar controller requested a clearance from the Tower controller for the Wildcat to conduct a low approach, which was approved by the Tower controller. However, before the Tower controller could transmit the information call about the radar traffic to other traffic operating at Yeovilton on different frequencies, the Tutor pilot called finals for RW26. It has not been possible to determine the Tutor's exact position in the circuit when the pilot called finals; however, it is likely that the Tutor pilot would have called finals just as they began their final turn.

The Tower controller instructed the Tutor pilot to go-around and used the Radar Clearance Line to notify the Radar controller that one aircraft in the visual circuit was going around; this was read back by the PAR controller. The Tutor pilot acknowledged the go-around and, having only descended a few hundred feet, climbed back up to the glide circuit height of 1500ft. Whilst visual with the radar traffic, the Tutor pilot then crossed the RW centreline to position on the dead-side. Just prior to reaching Decision Height, the Wildcat pilot was informed of the traffic in the circuit going around and acknowledged the call. Although there are conflicting reports on the approximate distance between the 2 aircraft at this point, both crews were visual and no avoiding action was deemed necessary.

At their Decision Height of 400ft, the Wildcat pilot called going around and, at approximately 500ft, reported holding height due to the fixed-wing traffic crossing their flight path approximately 200m ahead. Once clear of the traffic, the Approach controller gave go-around instructions to the Wildcat pilot to climb on runway track to 2000ft and, on passing 1700ft, turn right onto a heading of 040°. The Tutor pilot reported that, having estimated a similar groundspeed to the Wildcat, and to avoid extending too far upwind, an early turn onto the downwind leg was commenced. This was transmitted to the Tower controller and they confirmed that they were visual with the Wildcat. It has

[1] MAA RA 2307 paragraphs 1 and 2.
[2] MAA RA 2307 paragraph 15.

not been possible to determine the exact height or distance at which the fixed-wing aircraft passed in front of and above the Wildcat. Both crews remained visual with each other throughout and avoiding action of stopping the climb by the Wildcat pilot ensured separation was maintained.

Comments

JHC

JHC acknowledges that no rules were broken in the events that led to this Airprox and indeed both pilots maintained visual contact throughout. However, this Airprox is a perfect example of how deviation from the expected can cause concern to one party, when the other remains content with the situation. The Wildcat pilot was conducting an instrument approach under simulated IF conditions with the non-handling pilot and crew member looking out. The Tutor was observed dead-side shortly before the Wildcat pilot commenced the low-approach. Because they were conducting further instrument approaches, the Wildcat pilot was transferred direct from the Talkdown controller to the Approach controller, and so did not have the benefit of the situational awareness that would have been gained from being on the Tower frequency. As such, they did not hear the information call from the Tutor pilot and were not aware of their intentions to take an early turn onto the downwind leg. Sensing a potential conflict, the Wildcat pilot stopped the climb until clear of the perceived confliction.

Navy HQ

The investigation into this Airprox was conducted using details contained in 5 occurrence reports submitted by aircrew and ATC staff and the audio recording transcripts. The Wildcat aircrew were interviewed; however, due to COVID-19 restrictions, the investigator was unable to interview all other parties. Conflicting reports of the distance between the aircraft were received and, unfortunately, the proximity of the 2 aircraft cannot be confirmed as no PAR recording was available.

The intentions of the pilots of each aircraft were known and communicated internally and externally by ATC in the lead-up to this incident. Both pilots acknowledged the position of the other aircraft and remained visual. RNAS Yeovilton procedures allow VFR and IFR traffic to operate concurrently and instructions and information calls were issued to both pilots by ATC in accordance with these procedures. Both pilots were responsible for maintaining separation from each other in accordance with the airspace classification, the conditions of the ATS and the Rules of the Air. The Tutor pilot felt that they executed this correctly and made their decisions for positioning and to maintain separation from the instrument traffic based on visual lookout and information calls. However, the Wildcat pilot felt that they were unable to comply with the ATC instruction issued by the Approach controller due to the positioning of the Tutor in the visual circuit, as this would have introduced a possible collision. The severity of this incident and the perceived distance between the aircraft was reported differently by both pilots.

Overall this Airprox highlights that, together with procedures that are in place to allow mixed visual and IFR traffic to operate safely, it is incumbent on aircrew to maintain separation and comply with the Rules of the Air. However, the procedures in place at Yeovilton for mixed visual circuit and instrument traffic will be reviewed to ensure that they remain appropriate, particularly when aircraft are climbing away from an instrument approach and could come into close proximity to aircraft conducting a go-around in the visual circuit.

Summary

An Airprox was reported when a Wildcat and a Tutor flew into proximity in the Yeovilton visual circuit at 1640Z on Wednesday 5th February 2020. The Wildcat pilot was operating under IFR in VMC and the Tutor pilot was operating under VFR in VMC. The Wildcat pilot was in receipt of a Traffic Service from Yeovilton Approach and the Tutor pilot was in receipt of an Aerodrome Control Service from Yeovilton Tower.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided dial-in/VTC comments. Although not all Board members were present for the entirety of the meeting and, as a result, the usual wide-ranging discussions involving all Board members were more limited, sufficient engagement was achieved to enable a formal assessment to be agreed along with the following associated comments.

The Board first discussed the actions of the Tower controller and wondered why they had not intervened when they first realised that there had been a potential conflict between the 2 aircraft. The Board heard from a military member that the ATC Order Book at Yeovilton does permit the controller to issue instructions to pilots to resolve conflicts in the visual circuit but, equally, that military pilots are trained to integrate themselves with the information provided by the controllers. Members agreed that the controller had, in fact, issued instructions to the Tutor pilot to resolve the initial conflict as he had turned final (**CF1**), but that this had led to the 2 aircraft effectively flying parallel tracks at very similar speeds and remaining in proximity, and felt that the controller may have been better served by instructing the Tutor pilot to either orbit or extend downwind. The Board also heard that a Safety Assessment of IFR and VFR integration procedures had been conducted at Yeovilton approximately 2 years ago, but that no consensus could be reached and thus no changes had been made. The Board was heartened to hear that a further assessment (through the use of a SQEP[3] panel) is planned in the wake of this incident.

Turning to the actions of the pilots involved, the Board acknowledged that the mixture of instrument approaches and visual circuit traffic is commonplace at military establishments. However, a number of recent Airprox have highlighted potential frailties in the deconfliction of aircraft going around from an instrument approach and aircraft already established in the visual circuit. In this case, the Wildcat pilot had been unable to execute the clearance issued to them by the controller due to the presence of the Tutor. That said, the Wildcat crew had been visual with the Tutor but, by virtue of the fact that they had been on a different frequency to that of the Tutor pilot, had been unaware of the Tutor pilot's intentions (**CF2**) and had been concerned by the aircraft's proximity (**CF5**). For their part, the Tutor pilot had been visual with the Wildcat and had planned to turn early downwind (with vertical separation) in order to resolve the potential conflict before the Wildcat pilot climbed through the height of the circuit (**CF4**).

Considering the risk involved in this Airprox, the lack of radar recordings hindered the Board's ability to fully understand the separation between the 2 aircraft. Although each aircraft had received a TAS alert regarding the proximity of the other (**CF3**), members agreed that this would have been expected given the environment in which the 2 aircraft had been operating. The Board agreed that, by virtue of both pilots having been visual with the other aircraft, any risk of collision had effectively been removed. However, some members felt that safety had been degraded and that a Rick Category of C was warranted; others argued that, in a Class G visual circuit environment, both pilots had fully executed their responsibilities for collision avoidance and that normal safety standards had pertained. After further discussion, the Board agreed to assign a Risk Category E to this event.

[3] Suitably Qualified and Experienced Personnel

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2020016		
CF	**Factor**	**Description**	**Amplification**
	Ground Elements		
	• Situational Awareness and Action		
1	Human Factors	• Conflict Resolution - Provided Late	
	Flight Elements		
	• Situational Awareness of the Conflicting Aircraft and Action		
2	Human Factors	• Situational Awareness and Sensory Events	Pilot was concerned by the proximity of the other aircraft
	• Electronic Warning System Operation and Compliance		
3	Contextual	• ACAS/TCAS TA	
	• See and Avoid		
4	Human Factors	• Perception of Visual Information	Pilot perceived there was no conflict
5	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: E

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:

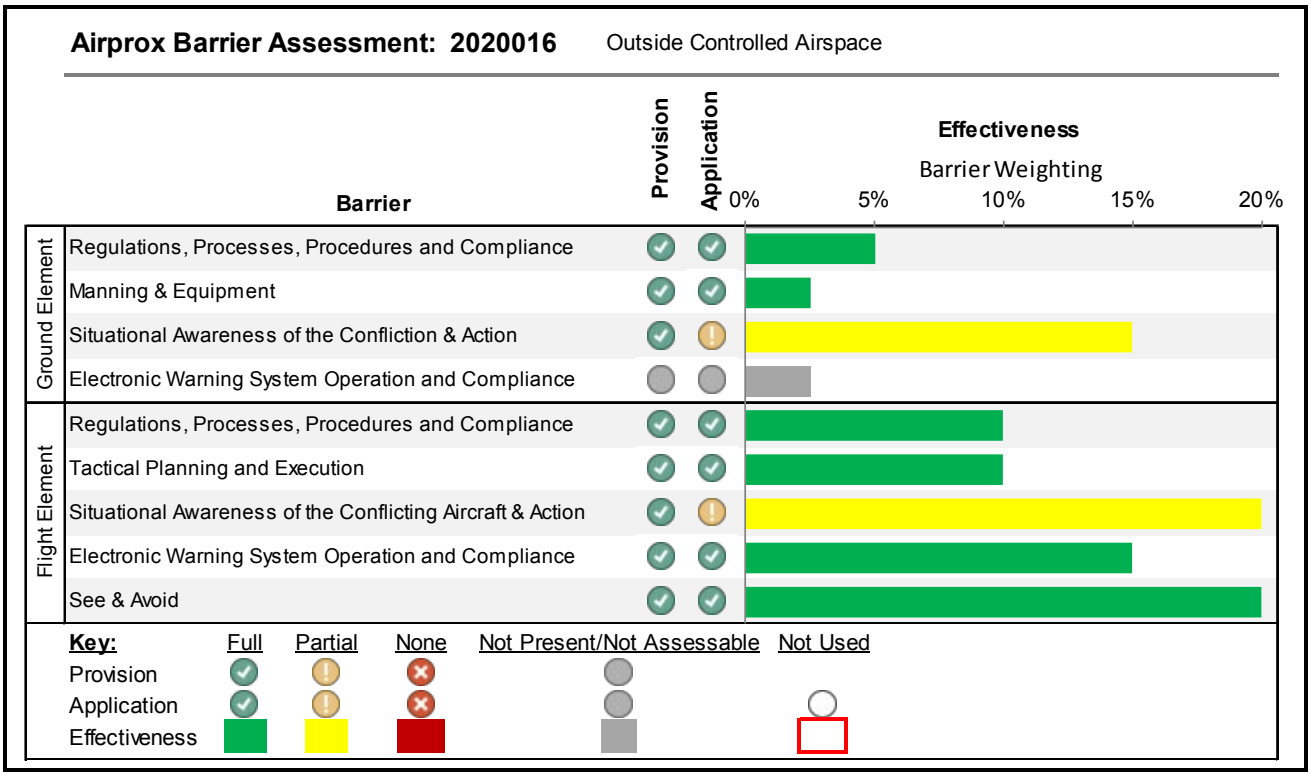
Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **partially effective** because the Tower controller had detected the potential for the aircraft to conflict but chose not to instruct the Tutor pilot to conduct an orbit or extend downwind in order to resolve the confliction prior to the Tutor pilot turning final.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the Wildcat pilot, although visual with the Tutor, did not know of the intentions of the Tutor pilot to turn early onto the downwind leg.

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


Airprox Barrier Assessment: 2020016
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
Key:
Full
Partial
None
Not Present/Not Assessable
Not Used
Provision
Application
Effectiveness