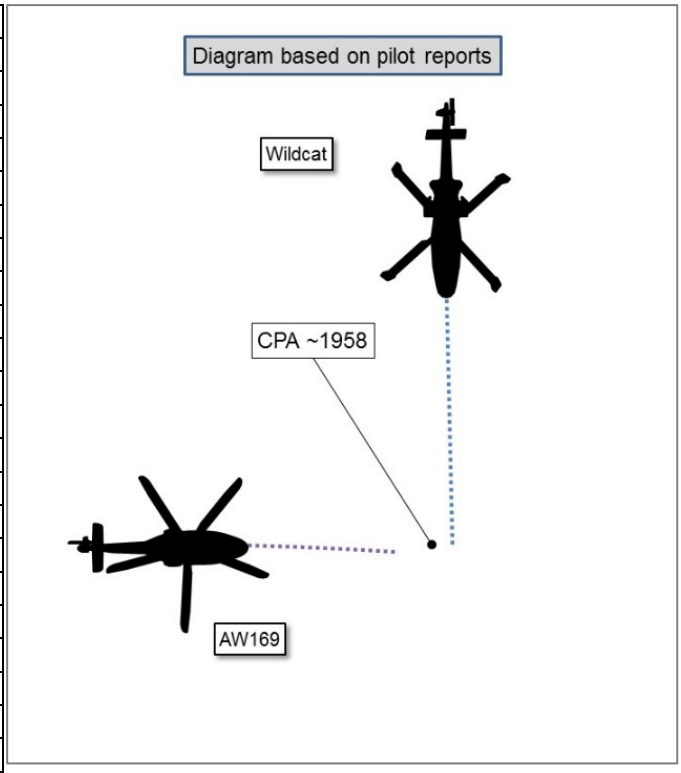
AIRPROX REPORT No 2019047

Date: 25 Mar 2019 Time: ~1958Z Position: 5058N 00219W Location: ~2nm east Henstridge

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Wildcat	AW169
Operator	RN	HEMS
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	None
Provider	Yeovilton	N/A
Altitude/FL	NK	NK
Transponder	A, C, S	Off
Reported		
Colours	Grey	Yellow
Lighting	Strobe, Nav	Strobe, Nav
Conditions	VMC	VMC
Visibility	10km	>10km
Altitude/FL	300ft	1000ft
Altimeter	NK	QNH (1033hPa)
Heading	180°	090°
Speed	90kt	100kt
ACAS/TAS	TAS	TCAS II
Alert	None	None
Separation		
Reported	0ft V/0.25nm H	Not seen
Recorded	NK	



THE WILDCAT PILOT reports that he was on a Low-Level NVD NAVEX, flying at about 90kts, having climbed to a minimum safe height (MSH) of 300ft AGL in the vicinity of an unlit mast. The handling pilot in the right-hand-seat saw an aircraft/strobe at 2 o'clock slightly low, constant bearing just emerging from behind the aircraft frame at the right-hand-side on the windscreen. The other aircraft was also masked by cultural lighting. He turned the Wildcat to the right to increase the separation and pass behind. The other aircraft made no discernible change in direction. His TAS registered no contact or alert. He informed Yeovilton ATC and filed an Airprox.

He assessed the risk of collision as 'Medium'.

THE AW169 PILOT reports that he had been tasked to recover a medical crew from Southampton General Hospital after a previous HEMS mission. Whilst on the ground during take-off checks it was noted that the aircraft's transponder had selected 0000 by itself instead of the usual 0020 Squawk. 0020 was therefore reselected but he believes he failed to turn on the TA/RA selection at this point. He departed Henstridge and climbed to 1500ft. During the climb out no other aircraft was observed by either himself or the technical crewman. He believes that his aircraft's TCAS system would have potentially alerted him to the position of the other aircraft, but he was in a sustained climb throughout the incident having just departed his operating base and with high ground on track to the east.

During a telephone conversation with the Secretariat the AW169 pilot said that there is a known fault with the transponder on this aircraft type where it will occasionally reset to 0000. It was whilst resetting the transponder to the HEMS code that he inadvertently forgot to turn the transponder back on, this was discovered later in the sortie and rectified. Unfortunately this was after the Airprox and therefore resulted in the AW169 and Wildcat electronic warning systems not being able to function as expected.

He assessed the risk of collision as 'Low'.

THE YEOVILTON CONTROLLER reports that an Airprox was called by a Wildcat pilot. At 1959Z he received a transmission from the Wildcat pilot asking whether he had observed a track in the Wildcat's immediate vicinity, to which he replied negative because the Wildcat was transiting low-level on a navigational exercise (the Wildcat was displaying approximately 800ft on SSR Mode C and therefore at the base of radar cover at that range). The position of the Wildcat at the time of this transmission was approximately 2nm east of Henstridge airfield, with the coordinates being passed by the pilot in a later transmission along with other pertinent information. Once he had stated to the Wildcat pilot that he was not able to see anything on radar, he quickly followed it up with a 'standby', as a primary radar contact began to paint on radar, approximately 2nm east of Henstridge, heading eastbound. The Wildcat pilot passed that they were tracking southbound, with an airspeed of 80kts, and good VMC. The point of closest separation was passed as approximately ¼ of a mile, coordinates 50.58.9N 002.19.9W, with the unknown aircraft climbing through the level of the Wildcat and levelling at approximately 1000ft AGL. He maintained track identification (as no squawk was observed) on the aircraft in question and liaised with Bournemouth radar to track where the aircraft routed. On further liaison with Bournemouth radar, the aircraft had established contact with Bournemouth and was operating as [callsign provided], routing to Southampton General hospital.

He perceived the severity of the incident as 'Low'.

THE YEOVILTON SUPERVISOR reports that she was in the VCR so did not witness the incident. The radar controller reported it to the ADC controller and she then spoke with them afterwards and ensured they took a note of any details that they could and informed the Duty Flying Supervisor.

Factual Background

The weather at Yeovilton was recorded as follows:

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METAR EGDY 251950Z 28001KT CAVOK 07/01 Q1035 BLU NOSIG
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Analysis and Investigation

UKAB Secretariat

The Wildcat and AW169 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]. If the incident geometry is considered as converging then the Wildcat pilot was required to give way to the AW169[2].

Occurrence Investigation

As part of the investigation into this incident the RN have recommended that there is closer liaison between RNAS Yeovilton ATC and Henstridge in order to educate crews to the risks of launching at night in a busy low-level environment without any R/T or squawk.

Both aircraft were low level at the time of the Airprox and do not appear on radar until about 5mins after the reported CPA. When the AW169 does appear on radar it is as a primary contact with no transponder displaying, which explains why the Wildcat pilot did not receive a TAS alert.

Comments

Navy HQ

This airprox highlights the natural limitation of operating on NVG and acts as a reminder of the need for good lookout particularly within Class G airspace where aircraft may be encountered at any time. The lack of a TAS alert due to the other aircraft non-squawking supports this requirement but also

[1] SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.
[2] SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

serves as a reminder for good electronic conspicuity discipline where fitted. Due to the geographical location of this Airprox and its proximity to RNAS Yeovilton operations, the need for formal ATC liaison has been established and is ongoing.

Summary

An Airprox was reported when a Wildcat and an AW169 flew into proximity about 2nm east of Henstridge at about 1958hrs on Monday the 25th of March 2019. Both pilots were operating under VFR in VMC, the Wildcat pilot in receipt of a Basic Service from Yeovilton and the AW169 pilot not in receipt of a service.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, 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 began by hearing from the HQ Navy member. She said that Yeovilton are very aware of the helicopter task operating from Henstridge and, due to the task that these helicopters fly, they are alert for squawks from there and are vigilant in looking out for pop-up contacts. However, due to reduced radar coverage in that area, primary-only contacts don't show on the radar until they have climbed out of Henstridge. She went on to comment that although there had never previously been an incident like this, the Navy and Henstridge have been pro-active in considering this incident and have quickly agreed a Temporary Memorandum to prevent a recurrence; in future, Yeovilton pilots will contact Henstridge if operating in the vicinity, and the Henstridge pilots will contact Yeovilton when lifting from Henstridge.

The Board then turned to the actions of the AW169 pilot. Noting that the pilot had discovered that the AW169's transponder did not have the usual HEMS squawk and so had had to reset it, helicopter members speculated that the pilot may have turned the system off or to standby and then forgotten to turn it back on after selecting the pre-assigned squawk (although some modern transponder units automatically go to standby and restart when changing squawks so they could not be certain that this was what had occurred). Regardless of how it occurred the AW169 was not transponding **(CF1 & 3)** which prevented the Wildcat's TAS and the AW169's TCAS II from alerting the pilots to the other aircrafts presence **(CF6)**. A military member noted that CADS was available to all HEMS units for planning purposes so they can identify any military flying that may affect their route. Given that this was a pre-planned routine transit, they wondered whether Henstridge HEMS had been using CADS to aid their planning **(CF2)**. The Board agreed that the AW169 crew would have benefitted from doing so and wondered to what extent CADS was a feature of their operational processes. Although there was no requirement at the time of this incident for the AW169 pilot to contact Yeovilton, members agreed that it would have been good practice to have done so before lifting **(CF4)** and, if he had, this would have allowed Yeovilton to pass, at least, generic Traffic Information (TI) to the AW169 and the Wildcat pilots **CF5)**. Finally, members noted that although the Wildcat had strobe and navigation lights selected on, the AW169 pilot did not see the Wildcat **(CF8)** and this reinforced the need for a robust lookout when lifting from field sites, especially at night.

Turning to the actions of the Wildcat pilot, members commented that the limitations of Night Vision Devices (NVD) are well known and that this, compounded by the light interference from the surrounding areas, meant that it was understandable that the Wildcat crew did not see the AW169 until its strobe emerged from behind the Wildcat's cockpit frame (**CF7 & 9)**. The Board noted that, once the AW169 was sighted, the Wildcat pilot had sufficient separation to conduct a timely and effective turn to increase separation and pass behind.

The Board then turned to the risk. Members noted that the AW169 pilot did not see the Wildcat at all, and that, although the Wildcat pilot saw the AW169 late, it was with enough time to turn right and pass behind the AW169. Therefore, the Board assessed the risk as Category C; safety had been degraded but there had been no risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Contributory Factors:

	2019047-Barriers		
CF	**Factor**	**Description**	**Amplification**
	Flight Elements		
	• Regulations, Processes, Procedures and Compliance		
1	Human Factors	• Flight Crew ATM Procedure Deviation	Regulations/procedures not complied with
	• Tactical Planning and Execution		
2	Human Factors	• No Decision/Plan	Inadequate planning
3	Human Factors	• Transponder Selection and Usage	Not correctly selected
4	Human Factors	• Communications by Flight Crew with ANS	Pilot did not communicate with appropriate airspace controlling authority
	• Situational Awareness of the Conflicting Aircraft and Action		
5	Contextual	• Situational Awareness and Sensory Events	Pilot had no, only generic, or late Situational Awareness
	• Electronic Warning System Operation and Compliance		
6	Technical	• ACAS/TCAS System Failure	Incompatible CWS equipment
	• See and Avoid		
7	Contextual	• Poor Visibility Encounter	One or both aircraft were obscured from the other
8	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots
9	Human Factors	• Monitoring of Other Aircraft	Late-sighting by one or both pilots

Degree of Risk: C.

Safety Barrier Assessment[3]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **not used** because neither aircraft was visible on the radar display due to their altitude.

Flight Elements:

Regulations, Processes, Procedures and Compliance was assessed as **partially effective** because the AW169 pilot inadvertently did not select his transponder on after code reset.

Tactical Planning and Execution was assessed as **partially effective** because the AW169 pilot could have requested a service from Yeovilton ATC to enhance everyone's situational awareness.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had any information on the other aircraft.

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

Electronic Warning System Operation and Compliance were assessed as **ineffective** because neither aircraft's equipment could detect the other because the AW169 was not transponding.

See and Avoid were assessed as **partially effective** because the AW169 pilot did not see the Wildcat and the Wildcat pilot saw the AW169 later than desirable due to the AW169 being masked by his aircraft frame and background lighting.