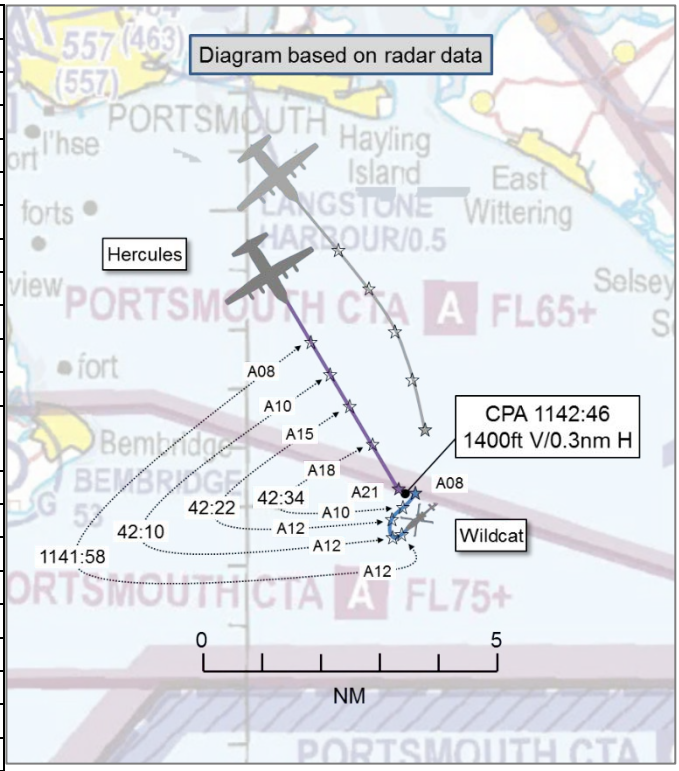
AIRPROX REPORT No 2019130

Date: 05 Jun 2019 Time: 1142Z Position: 5040N 00055W Location: E Isle of Wight

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Wildcat	C130x2
Operator	RN	HQ Air (Ops)
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Traffic
Provider	Swanwick Mil	Swanwick Mil
Altitude/FL	FL008	FL022
Transponder	A,C,S	A,C,S
Reported		
Colours	Grey	Dark green
Lighting	Anti collision, nav	White HISLs, wing tip taxi, nav
Conditions	VMC	VMC
Visibility	NK	10km
Altitude/FL	800ft	NK
Altimeter	QNH (1006hPa)	NK (1013hPa)
Heading	060°	NK
Speed	NK	NK
ACAS/TAS	TAS	TCAS
Alert	TA	Information
Separation		
Reported	150ft V/0nm H	Not reported
Recorded	1400ft V/0.2nm H	



THE WILDCAT PILOT reports that their aircraft was tasked to conduct maritime security operations in support of D-Day 75 tasking. Their aircraft was positioned in a barrier remaining to the south of the flypast RA(T) at 1000ft with a Basic Service from Swanwick Mil and under Broadcast Control from a Type 45 Destroyer. The aircrew contacted Swanwick Mil to ensure their position would not conflict with any flypast traffic that might be due through the area, they were informed that they were well clear from the intended routeing. As the flypast commenced, the crew kept eyes on elements of the formation as they passed through. At that point the handling pilot (HP) noticed a pair of C130 Hercules (diverging from the intended route he thought) at 9 o'clock at the same height and initiated a rapid descent. The C130s were seen to pass overhead by approximately 150ft as the aircraft descended through 800ft. No avoiding action was seen to be taken by the C130 pilots. At no point was any Traffic Information passed by either Swanwick Mil or the Type 45.

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

THE C130 HERCULES PILOT reports that he was operating within a formation of 2 x C130 aircraft that had been planned and coordinated to complete a complex flypast. This route had been thoroughly planned and deconflicted many weeks before between Swanwick Mil, the CAA and all elements, and a thorough brief for all elements was carried out 3 weeks before the event. The route was approved by the flypast coordinator, AOC 1 Group, and was also placed on CADS prior to departure. After completing the approved flypast in the vicinity of Southsea Common, the formation carried out the planned escape routeing off the datum point. This comprised of extending straight ahead for 1nm before turning right onto a heading of 155° and, at 5nm from the turn point, commencing a climb to FL50. Whilst following this planned egress, a Wildcat helicopter was observed in the 12 o'clock position both on TCAS and visually about 2-4nm ahead. This was also called on the Swanwick Mil briefed frequency. At this point, the formation had commenced its climb as planned and at no point felt threatened by the

Wildcat. They heard the Wildcat pilot report the Airprox and, when interrogated by Swanwick Mil as to who he was filing against, said the whole formation, which they took to mean the Voyager and Sentinel to their left and helicopters to their right. At this point they were operating their IFF with TA only selected as per the formation Op Order. The sighting of this helicopter came as a surprise to both crews as it was not on CADS when the crew walked and was not part of the briefed participation. The proximity of a non-planned aircraft to a complex, high-profile flypast on a planned and published (on CADS) egress route, comprising of a mixed formation of 24 aircraft was a surprise but the lead C130 pilot sighted the helicopter at a reasonable distance and at no time felt threatened.

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

THE SWANWICK MIL RA(T) CONTROLLER reports that he was responsible for helping to identify aircraft allowed into the RA(T) and any 'rogue' or unidentified aircraft in the vicinity of the RA(T). The Wildcat pilot had been inside the RA(T) on his frequency intermittently since the morning carrying out tasks. During the morning he had asked the pilots on his frequency if they were aware of the timings and routes for the flypast later and also to carry out radio checks on a back-up frequency that might be used during the flypast for non-essential calls. All pilots individually acknowledged that they were aware and completed the radio check, including the Wildcat pilot. Just before the flypast, the pilots involved checked-in on frequency and he acknowledged them. When they all had good 2-way communications, the frequency was handed over to the flypast Tac and Planner to use for the flypast. He then monitored his screen for any unknown aircraft near the RA(T) and liaised with external units and agencies to identify them. Following the flypast the frequency was returned to him after the pilots concerned had been transferred to their enroute frequencies. The Wildcat pilot then informed him that an aircraft had got close to him after the flypast and he had decided to descend.

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

THE SWANWICK MIL RA(T) MONITOR reports that he was working with the RA(T) controller ensuring that no unidentified aircraft entered the RA(T). Prior to the flypast, the Wildcat pilot and the pilot of a Police helicopter were given permission to operate in the RA(T) as per the permission from Hampshire Police (the RA(T) controlling authority). Actual sortie profiles were not known, and the Wildcat had been in and out of radar cover all morning due to the lack of radar coverage in that area. Both pilots were informed of the flypast and asked if they were aware and to confirm they would remain clear of the flypast aircraft. Both replied in the affirmative and were under a Basic Service. Once all flypast pilots had checked in on the frequency it was handed over to the flypast controller who monitored the flypast. As the flypast turned towards the holding area, post run in, the C130 formation tracked towards the Wildcat at similar heights. As he turned to see if the flypast controller had spotted the traffic, he called it to the C130 crew, who reported visual and they were already climbing above approximately 2nm to its northwest. The Wildcat pilot stated on frequency that he had descended to avoid the formation, but did not report an Airprox at the time. The flypast route and RA(T) activation times were subject to an ACN and therefore available to all airspace users.

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

THE SWANWICK MIL SUPERVISOR reports that the Unit was tasked with providing the air security for D-DAY75 commemorations as well as controlling the flypast and providing ATM services to routine flying across the UK. All available controllers were on console. The Unit's workload was diverse and higher than normal.

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

THE SWANWICK MIL CONTROLLER reports that the crew of the C130 formation called on frequency after leaving the D-Day 75 flypast climbing to FL50 as fragged iaw the D-Day Op Order. He identified the aircraft and provided a Traffic Service. He called traffic 12 o'clock 2nm, manoeuvring, 1100ft below. The pilot called, he recollected, visual with the traffic and continued enroute.

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

THE SWANWICK MIL FLYPAST SUPERVISOR reports that they were standing behind the Flypast controller as the aircraft dispersed from the flypast. The crew of the C130 formation called, they were identified, and the controller called the Wildcat traffic to the crew, who called visual.

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

THE TYPE 45 CONTROLLER did not submit a report despite requests.

Factual Background

The weather at Southampton was recorded as follows:

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METAR EGHI 051120Z 19010KT 9999 FEW030 SCT038 15/07 Q1007=
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Analysis and Investigation

Military ATM

The Airprox occurred during the flypast to celebrate D-Day 75 approximately 10nm east of the Isle of Wight between a Wildcat and 2x C130s. The Wildcat pilot was receiving a Basic Service from Swanwick (Mil), the C130 pilots were receiving a Traffic Service from the same controller. The Wildcat pilot was conducting maritime security operations and was in receipt of a Basic Service from Swanwick (Mil) and was also under broadcast control from a Type 45 Destroyer. The C130 pilots were part of the D-Day 75 flypast formation and had completed the 'flypast' element of their sortie and were returning to Brize Norton. The Swanwick (Mil) controller was responsible for the ingress and egress portion of the flypast and, at the time of the incident, had 11 speaking units on frequency including those involved in the Airprox.

The Wildcat pilot established a Basic Service with Swanwick(Mil) approx 90min prior to the Airprox occurring. The Wildcat pilot reported operating up to 1000ft between the Isle of Wight and Southsea and was given permission to manoeuvre within the RA(T) established for the flypast. The Swanwick(Mil) controller confirmed with the Wildcat pilot that he was aware of the intended routing and levels for the flypast. Approximately 30min prior to the incident, the Swanwick (Mil) controller made an all-stations broadcast that the flypast was running approximately 3min late.

Figures 1-4 show the positions of the Wildcat [squawking 1541] and the C130s [squawking 6151] at relevant times in the lead up to and during the Airprox. The screen shots are taken from a replay using the Pease Pottage Radar, which is utilised by Swanwick(Mil) and is therefore representative of the picture available to the controller.

Following the flypast, the agreed deconfliction plan was for the C130 to fly straight ahead for 1nm before turning onto a heading of 155° and commencing a climb to FL50 5nm after this turn.

Figure 1, timed at 1140:32, shows the point at which this turn was initiated and was approximately 2min prior to the C130s being identified and placed under a Traffic Service.

Figure 2, timed at 1142:10, depicts the point at which the C130s were identified and given a Traffic Service. Separation at this point was 3.2nm and 200ft.

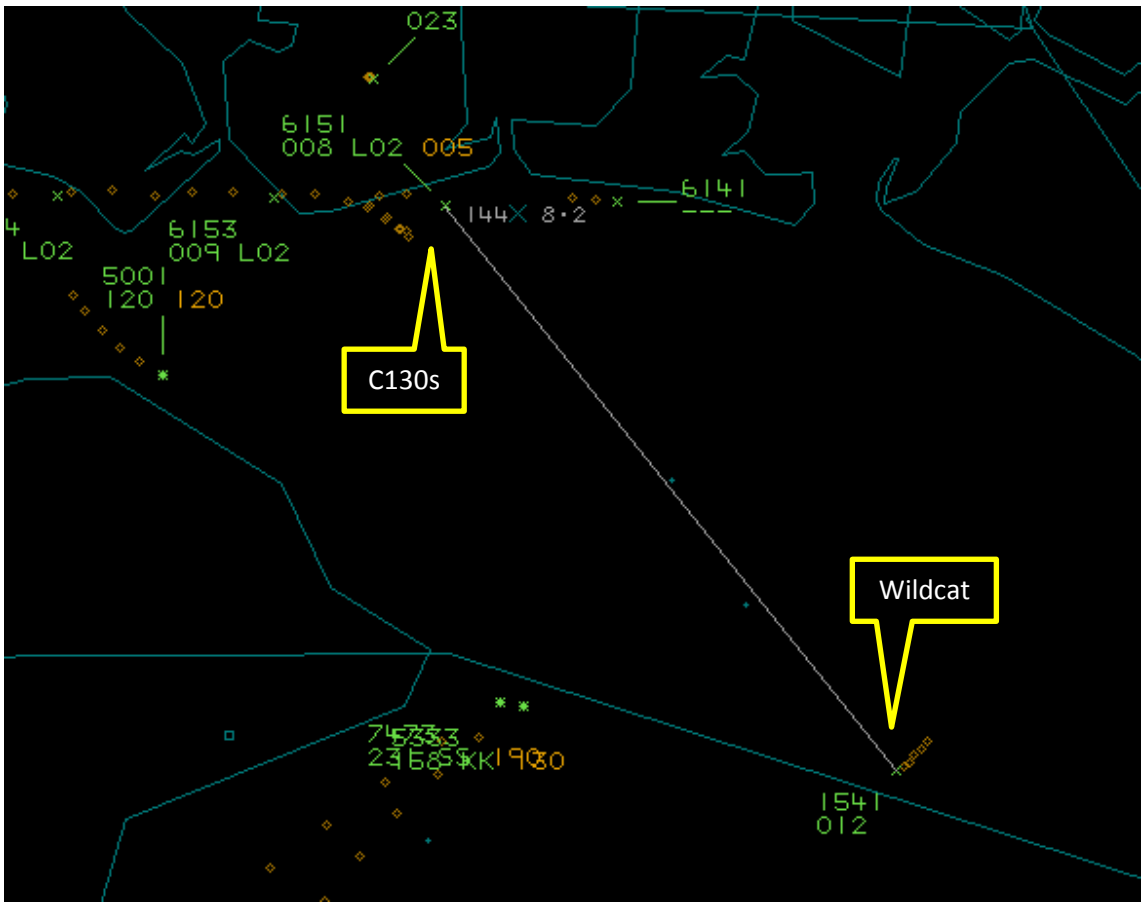


Figure 1.

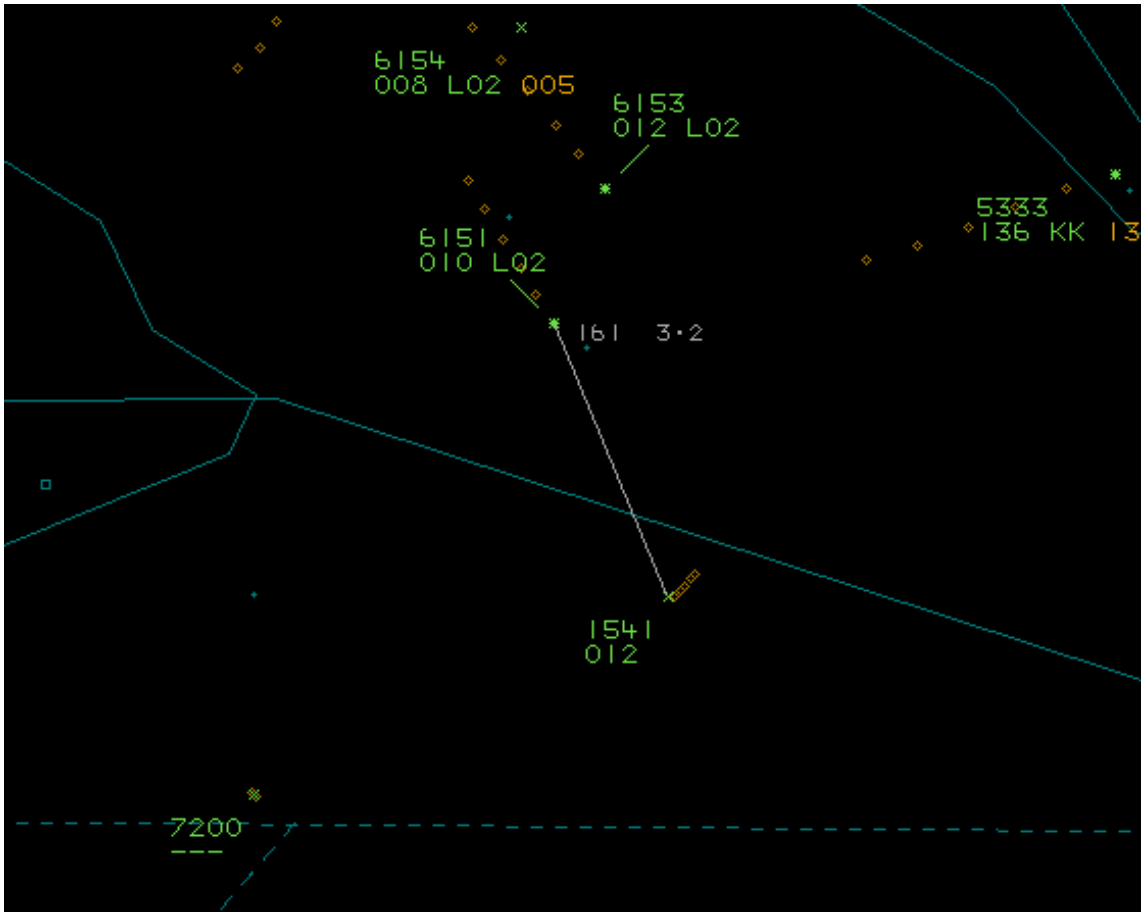


Figure 2.

At 1142:34 (Figure 3), the Wildcat pilot reported making an emergency descent to 800ft and noted that the C130s overflew the Wildcat by a reported 150ft. Analysis of the radar replay shows that this descent was concurrent with Traffic Information being passed to the C130 pilots. This Traffic Information noted that the Wildcat was indicating 2nm away and 1100ft below. Analysis of the radar replay shows the separation was actually 1.4nm and 700ft. The C130 pilots noted that they were visual with the Wildcat, had the aircraft on TCAS, and did not feel threatened by the Wildcat.

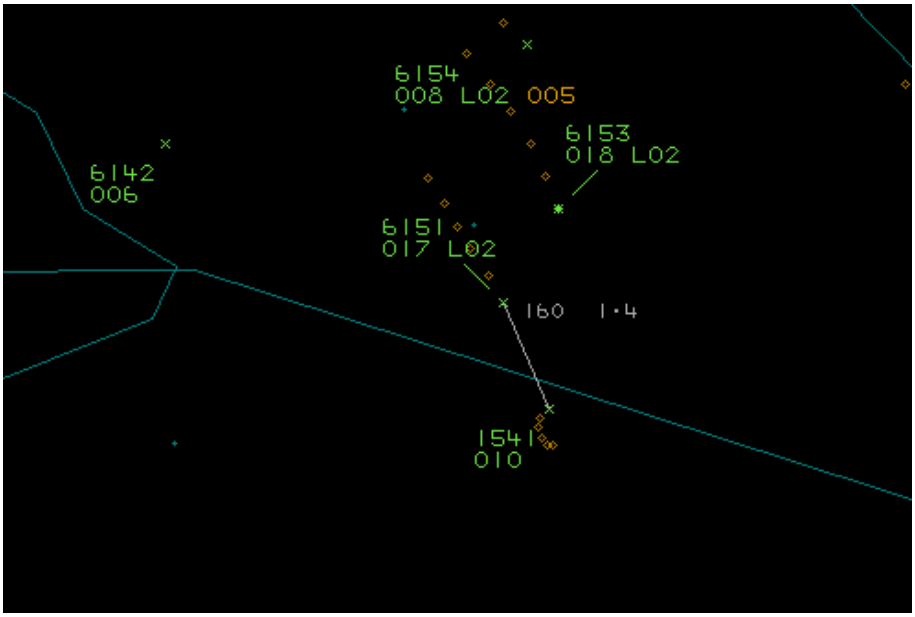


Figure 3.

CPA occurred at 1142:48 (Figure 4), and was measured as 0.2nm and 1400ft. This was 14sec after the Traffic Information was passed.

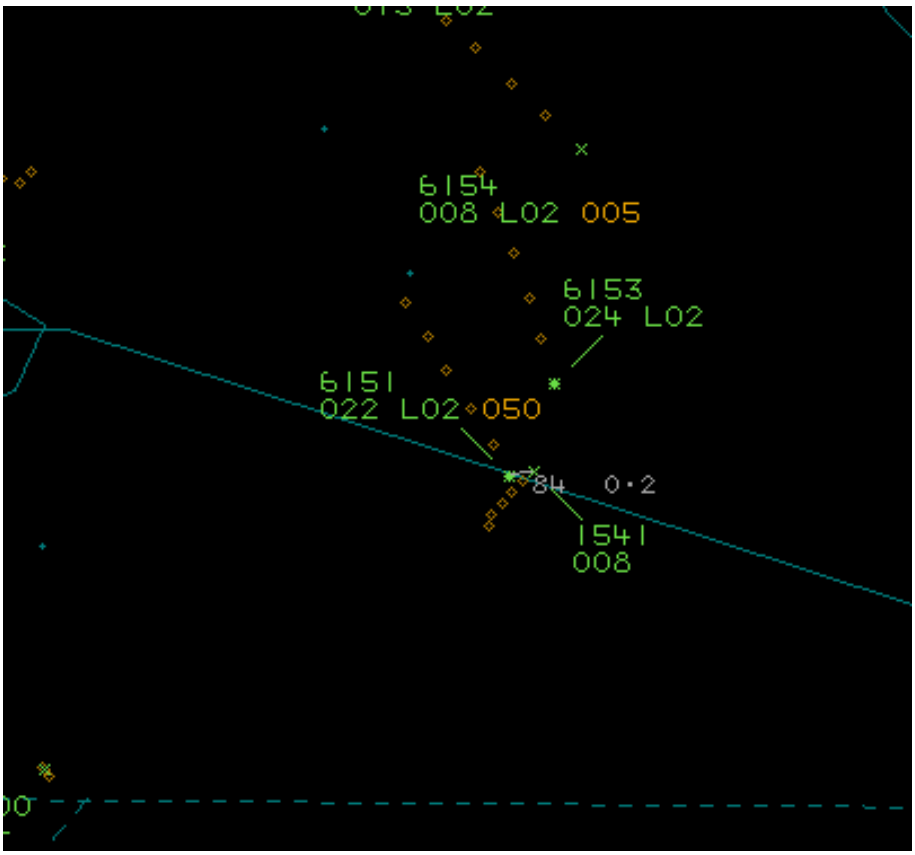


Figure 4 - CPA

The Swanwick (Mil) controller was part of a two-person team (TAC & Planner) to control the large volume of post flypast traffic. Although Traffic Information was passed at a less than ideal range, it was passed within 24sec of the C130 pilots being placed under the service. Given the workload of the controller it is unsurprising that Traffic Information was not passed to the Wildcat nor should the pilot have expected any under the terms of a Basic Service.

UKAB Secretariat

The Wildcat and C130 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 C130 pilot was required to give way to the Wildcat[2], which he did by climbing above.

Occurrence Investigation

Figure 5 shows the RA(T) designations as depicted in the flypast documentation.

RA(T) activity times were (UTC):

AREA A 1100-1130 / AREA B 1100-1140 / AREA C 1120-1145 / AREA D 0700-1900

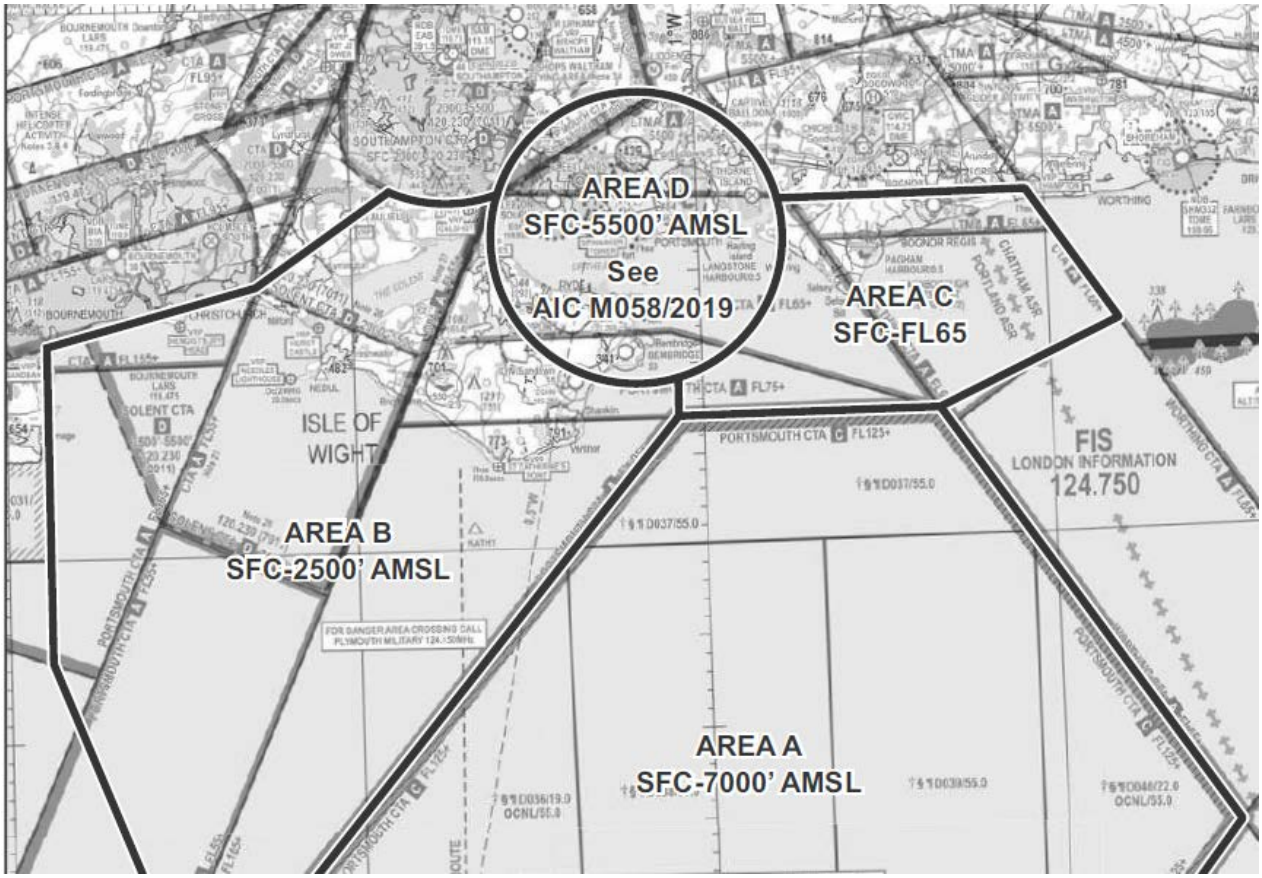


Figure 5.

Figure 6 is a schematic of the flypast egress plan overlain on the RA(T) graphic and showing that all aircraft were planned to egress to the south after completion of their run.

[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.

Figure 6

Figure 7 is a schematic of the incident taken from the RN incident investigation.

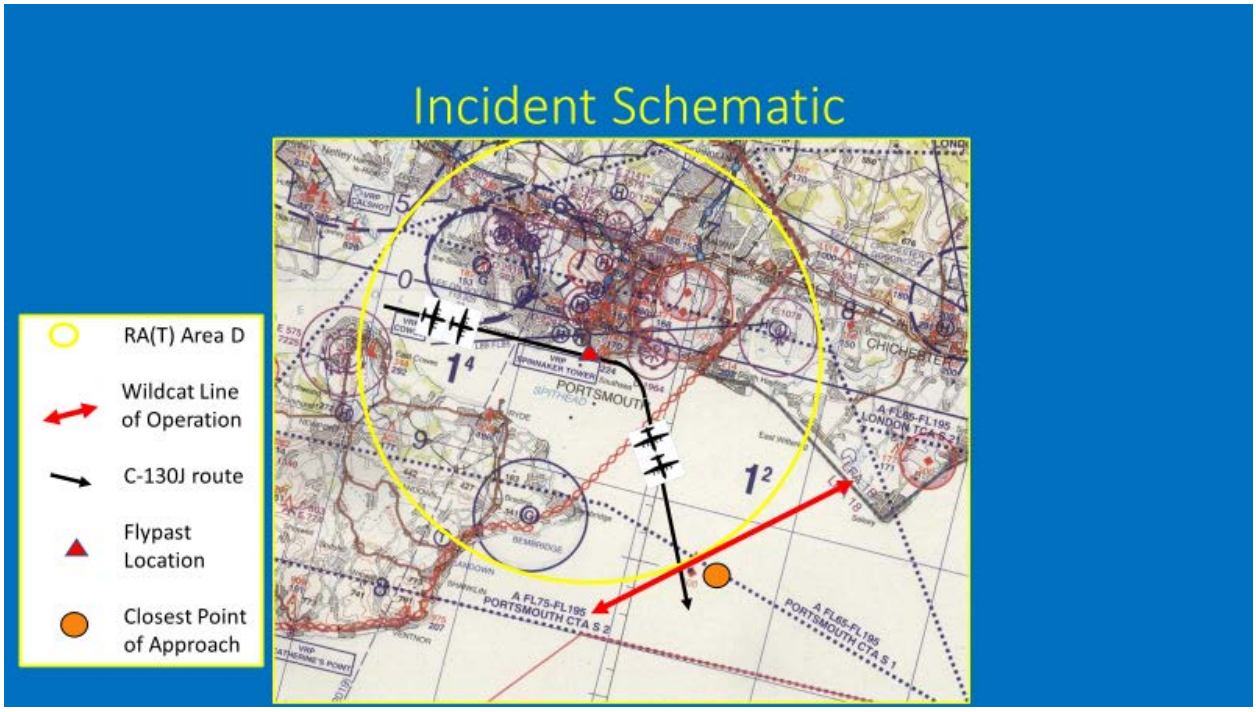


Figure 7.

Comments

Navy HQ

A comprehensive investigation into this Airprox was conducted including detailed recollections from all aircrew and ATC staff, together with the planning process and dissemination of information for the D-Day 75 air activity. This Airprox highlights the importance of considering the Flight Safety impact when planning and coordinating a complex evolution involving multiple air assets, and the importance of the dissemination of critical information. This was highlighted by the incomplete information regarding the C130s used by the Wildcat pilot during the planning process, particularly the lack of information on the departure profile together with all 4 RA(T). This led to assumptions made by the Wildcat pilot regarding the C130s which were not challenged and subsequently meant they were unaware of the potential confliction. Further assumptions were made by the Wildcat pilot from the exchanges with Swanwick(Mil) leading to a false sense of security. The subsequent perception of severity of the incident from the Wildcat crew was heightened because Traffic Information was not received on the C130s. However, they were operating under a Basic Service, which highlights the importance of requesting an appropriate UK FIS and understanding the terms of the service they were operating under.

Overall, this Airprox identifies the need for aviation expertise throughout the planning process during an evolution of this nature in order to ensure that essential information is included in the briefing process. It has also identified the requirement of aircrew to scrutinise all available information to gain a full picture of events to prevent assumptions being made.

HQ Air Command

The D-Day 75 Flypast had been thoroughly planned and was comprehensively briefed to all flypast crews three weeks before the event. Four areas of RA(T) had been established and circulated via AIC and NOTAM prior to the event. However, the intended routing of the flypast aircraft was not known by the crew of the Wildcat - they had been passed the Security Operation Order but not the Flypast Operation Order (which detailed the intended route of the flypast). The Wildcat crew didn't have an awareness of the full complement of published AIC and NOTAM information, specifically those that covered the flypast egress route. Furthermore, the flypast routing had not formed part of the planning events which they had attended. Also, the involvement of the Wildcat had not been briefed to the C130 crews.

The intended routes of the flypast aircraft were published on CADS. The Wildcat crew, operating from a ship and not intending to low fly, did not utilise this tool. Swanwick(Mil) was not obliged to pass Traffic Information to the Wildcat crew under a Basic Service and had been informed that the Wildcat crew were aware of the intended flypast routeing. The C130 crews, operating under a Traffic Service, had Traffic Information on the Wildcat (called at two miles) which corroborated information held on their TCAS. Their climb, which was part of the planned routing, deconflicted them from the Wildcat. Lookout was effective in each aircraft.

An Occurrence Safety Investigation was carried out by the Royal Navy into the circumstances leading to this Airprox and appropriate recommendations have been made to reduce the likelihood of a similar occurrence. Clearly, planning and communication are key to ensuring that safe separation exists between all aircraft in a complex evolution. This Airprox highlights the need to ensure that information is pushed *and* pulled appropriately by all. It also serves as a reminder to all that when left unchallenged, assumptions can lead to unintended outcomes.

Summary

An Airprox was reported when a Wildcat and a C130 flew into proximity in the Solent area at 1142hrs on Wednesday 5th June 2019. Both pilots were operating under VFR in VMC, the Wildcat pilot in receipt of a Basic Service from Swanwick(Mil) and the C130 pilot in receipt of a Traffic Service also from Swanwick(Mil).

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots, the controllers involved, area radar and RTF recordings 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.

The Board first noted that although both the C130 and Wildcat crews had been authorised to operate within the RA(T) airspace, and although their presence was known to the RA(T) controller, the crews were operating under different tasking arrangements and so had not been made fully aware of each other's intentions as part of their planning activities. The C130s had planned and were operating under the remit of a well-coordinated and pre-planned flypast activity whilst the Wildcat seemed to be operating as a relatively late *ad hoc* security task addition. Wondering who was responsible for the planning coordination of both activities, it was not clear to the Board what arrangements had been made to effectively integrate the Wildcat's tasking into the flypast event.

The RN member advised the Board that although the procedures for the flypast had been finalised and agreed some 3 weeks prior to the event, the Wildcat's maritime security task had only been considered necessary about 2 days before the flypast, and it was at this point that the Wildcat had embarked on the Type 45 Destroyer. The HQ Air Command member confirmed that all flypast crews had been thoroughly briefed about the flypast and the routes to be followed 3 weeks before the event, but because there was no Wildcat tasking at this point, the crews could clearly not be aware of this task in the same RA(T). Members wondered whether there had been an opportunity to pass on the Wildcat's tasking to the flypast organisers during the 2 days prior, and where the responsibility to do so lay.

The Board were briefed that the late inclusion of the Wildcat had meant that its crew had not obtained the full information about the flypast. It seemed that they had only been passed the Security Operation Order detailing their own task, and not the Flypast Operation Order (which detailed the intended flypast and egress routes). Also, the flypast routeing had apparently not formed part of the planning events which they had attended. The Board therefore considered that it was a contributory factor that the Wildcat tasking agency had not ensured that the Wildcat crew were fully aware of the complete flypast procedures or that the flypast crews were briefed on the Wildcat's presence (**CF1/CF2**). As a result, neither of the crews had sufficient situational awareness about each other's activities, and the Wildcat crew in particular were not aware that the C130s would route south after their flypast (**CF3**).

The Board then turned their attention to the actions of the Wildcat pilot. In addition to receiving a Basic Service from Swanwick(Mil), the pilot was in receipt of a Broadcast Control from the Type 45 Destroyer from which it had been operating. The UKAB RN Ops member informed the Board that Broadcast Control was not an ATC Control Service but was used to pass tactical messages between the ship and the Wildcat crew. On initial contact with Swanwick (Mil), about 90 minutes before the flypast, the Wildcat crew were given permission to manoeuvre within the RA(T). Subsequently, in response to a request from the controller as to whether they knew about the flypast routeing and levels, they confirmed that they were, and stated their routeing as heading 050° and returning on the reciprocal at 1000ft if ATC were content. The controller responded "that works". The Board commented that this informal response would have likely indicated to the Wildcat crew that the controller had agreed that this routeing would keep them clear of the flypast when in fact that was not the case for the egress routing. This lack of a formally stated agreement between the controller and the Wildcat crew as to their operating area and routing set the scene for the unfolding incident, and members agreed that it was also contributory that the Wildcat crew had not asked what the flypast egress routing would be (**CF4**).

For their part, the C130 crews' specified egress routeing was to continue straight ahead for 1nm before turning right heading 155° and, 5nm on from the turning point, commence a climb to FL50. This routeing had been placed on CADS the previous day but it was apparent that the Wildcat crew were unaware of this information. However, the Wildcat crew, operating from the Type 45 Destroyer, were not intending to low fly *per se* (other than to hold over the Solent), and so did not use the CADS tool, nor were they specifically aware that they could use CADS to gain information about the formation's routing. Ultimately, the C130 crews were in receipt of a Traffic Service from Swanwick(Mil) and received Traffic

Information that allowed them to obtain visual contact with the Wildcat about 2-4nm ahead. They also had the helicopter displaying on their TCAS. Although they had been surprised about the presence of the Wildcat because they had not been briefed about it, they were able to conduct a controlled climb (which they were already entering into as part of their egress) in order to avoid.

The Board then discussed the risk. Members noted that at CPA the C130s had already started their climb (in accordance with their departure procedure) and, although the radar recordings show that they passed 0.2nm apart, their final vertical separation from the Wildcat was 1400ft. In the meantime, the Wildcat pilot had started to descend having seen the C130s late. Members noted that, in his report, the Wildcat pilot had stated that the C130s had passed overhead by approximately 150ft, when in fact the achieved separation had been 1400ft. The Board thought that it was probable that the unexpected late sighting of 2 large aircraft heading towards him had startled the Wildcat pilot who had then become understandably concerned about their proximity and so probably misperceived their separation (**CF5/CF6).** Given the reasonably large vertical separation at CPA, some members opined that there had been no degradation in safety in this incident (Category E). Others commented that, although they agreed that there had been no risk of collision, the coordination aspects alone meant that safety had been degraded by the very fact that an aircraft had come into unintended proximity with a large formation flypast. The debate ebbed and flowed but, in the end, the latter view prevailed; bearing in mind the amount of planning that had occurred prior to the flypast, the Board considered that normal safety standards and procedures had not pertained because none of the crews had previously been aware of the presence of each other before they came into visual proximity and then carried out timely and effective avoiding manoeuvres. Accordingly, the Board assessed the risk as Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2019130		
CF	**Factor**	**Description**	**Amplification**
	Ground Elements		
	• Regulations, Processes, Procedures and Compliance		
1	Organisational	• Organisational Documentation and Publications	Inadequate regulations or procedures
	Flight Elements		
	• Tactical Planning and Execution		
2	Organisational	• Flight Planning Information Sources	Inadequate planning material
	• Situational Awareness of the Conflicting Aircraft and Action		
3	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
4	Human Factors	• Lack of Communication	Pilot did not request additional information
5	Human Factors	• Interpretation of Automation or Flight Deck Information	Pilot was concerned by the proximity of the other aircraft
	• See and Avoid		
6	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

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:

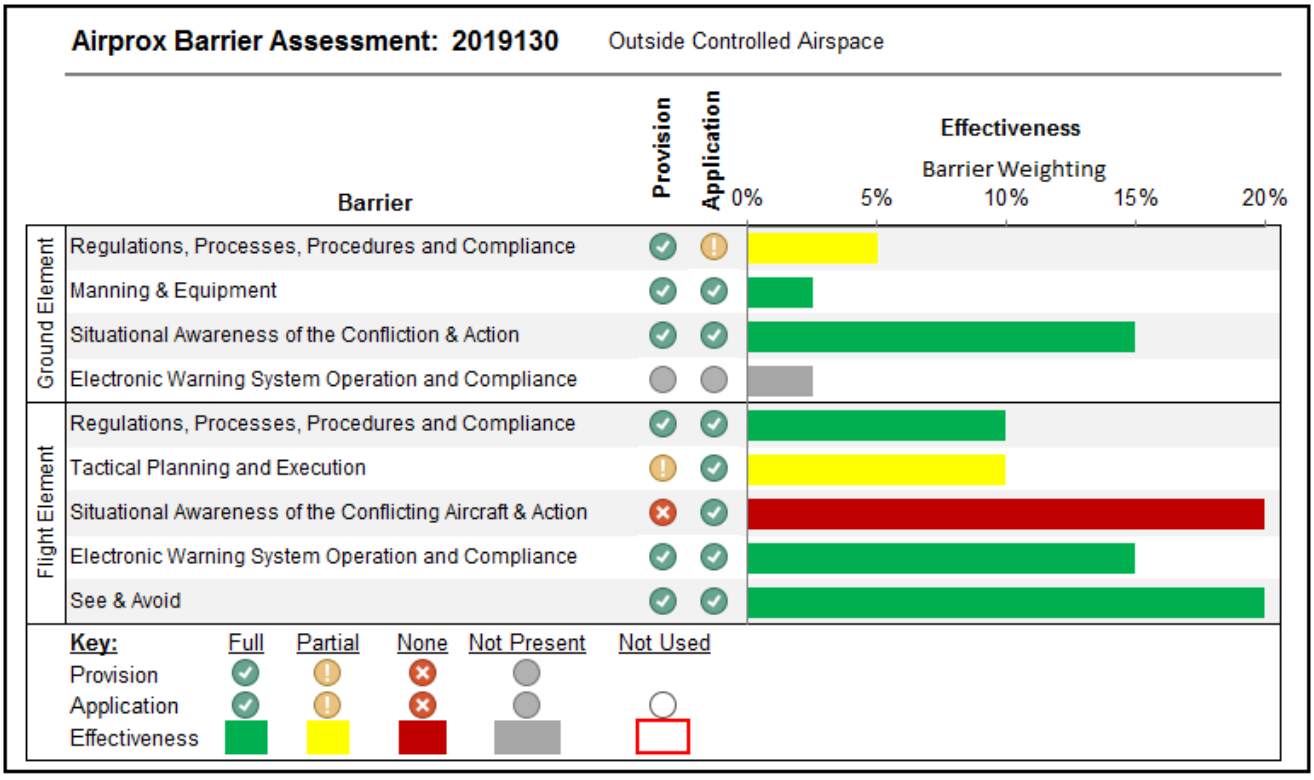
Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the tasking agencies did not ensure that the Wildcat crew were fully briefed about the complete flypast routeing.

Flight Elements:

Tactical Planning and Execution were assessed as **partially available** because the Wildcat crew were not informed of the C130s' egress routeing after carrying out the flypast.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **not available** because the Wildcat crew, despite informing ATC that they were aware of the flypast routeing, did not know the C130s' egress route after they had completed their flypast.

See and Avoid were assessed as **effective** because the C130 crew gained visual contact with the Wildcat at a range of 2-4nm.



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