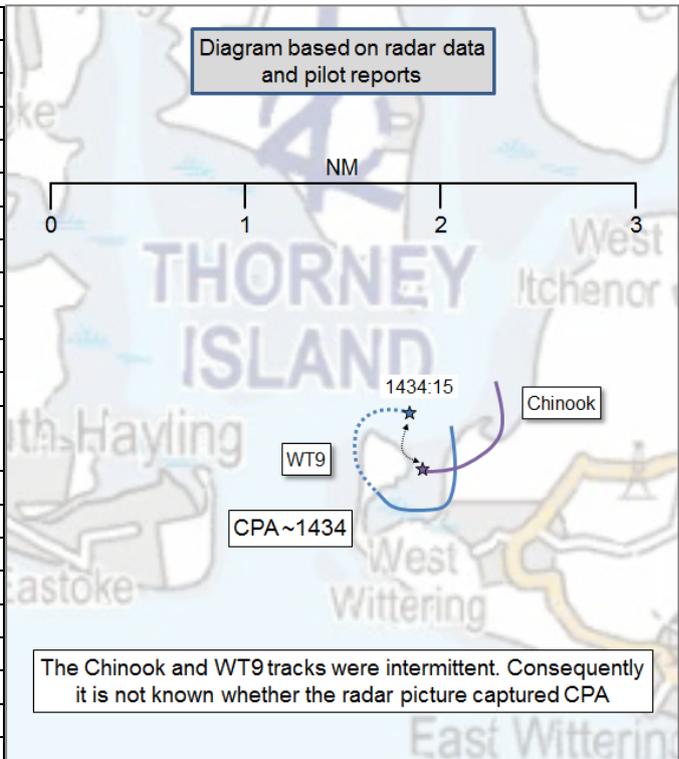


AIRPROX REPORT No 2017106

Date: 02 Jun 2017 Time: 1434Z Position: 5047N 00054W Location: ivo Thorney Island

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Chinook	Dynamic WT9
Operator	HQ JHC	Civ Pte
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	None
Provider	Goodwood	N/A
Altitude/FL	500ft	600ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Green	White
Lighting	HISL, landing, nav	NK
Conditions	VMC	VMC
Visibility	>10km	CAVOK
Altitude/FL	500ft	500ft
Altimeter	QNH (1015hPa)	NK
Heading	120°	Turning right
Speed	80-130kt	100kt
ACAS/TAS	TAS	Not fitted
Alert	TA	N/A
Separation		
Reported	0ft V/200m H	100ft V/500m H
Recorded	NK	



THE CHINOOK PILOT reports conducting an over-water display practice south of Thorney Island. A good lookout was being maintained by the crew of three, in good visibility, backed up by the TAS. In addition, the display supervisor was looking out from Thorney Island and had direct radio communication throughout. During the second full display sequence, the co-pilot noticed an aircraft indication on the TAS, was able to visually identify it, and called for the display practice to be stopped. The next manoeuvre was aborted and the co-pilot guided the handling pilot's eyes towards the other aircraft, in the right 1.30 position, whilst the handling pilot made a climbing left hand turn to deconflict. The other aircraft was a white, T-tailed, single piston-engine civilian aircraft with no obvious markings. At this point, the other aircraft was about 2-3 miles away at 1000ft and was considered not to be a direct threat to safety. However, the display practice was aborted owing to uncertainty as to the other pilot's future intentions. The Chinook pilot climbed to 500ft, started a right hand orbit anchored on Thorney Island and, with Goodwood Information's permission, attempted to raise the pilot of the civilian aircraft. No reply was received. It became apparent that the other aircraft was heading towards them and the Chinook crew maintained visual contact, expecting the aircraft to transit from southeast to northwest, past their location. The Chinook pilot reduced his rate of turn as the other aircraft approached their four o'clock position to assist in achieving greater lateral separation while the civilian aircraft passed them. The crewman then informed the Captain that he perceived that the civilian aircraft appeared to be 'tipping in' on them (turning and descending towards them) and closing range in an attempt to follow or formate. The Chinook Captain increased speed from 80kt to about 130kt whilst maintaining level flight to get away from the civilian aircraft. As the aircraft flew towards the Chinook, the co-pilot selected guard and the Captain made a call on the VHF guard frequency, 'Aircraft in the vicinity of Thorney Island attempting to follow or formate on a Chinook, this is Chinook aircraft [C/S], cease and turn away'. There was no response and the civilian aircraft was perceived to continue to try to follow but was unable to keep up, closing to 200m from the Chinook at its closest point as estimated by the crewman. The civilian aircraft then turned left away and the Display

Authoriser reported that it appeared to him to fly over houses at West Wittering at an estimated 200-300ft agl. It was then witnessed by the Chinook crew to turn out to sea and descend further to 100ft, both visually judged and informed by their TAS reading which showed the aircraft 600ft below them when their altitude was 700ft. The civilian aircraft was then perceived by the Chinook crewman to fly directly past boats at 100ft. Both visual and TAS contact were lost at a range of about 5-7 nm as the aircraft headed away. The Chinook pilot noted that it is a requirement that over-water display training flights are conducted in order to maintain display currency, and that Thorney Island was chosen as a site representative of the considerations that are likely at public displays. As part of the supervisory and crew risk assessments, consideration had been given to the submission of a NOTAM for the display practice but it was decided not to submit a NOTAM for the following reasons:

1. Regular changes in the flying programme made it difficult to achieve NOTAM timings.
2. Concern that a display NOTAM could attract third party crowds to the area, leading to potential increased risk to people on the ground and necessitating the Chinook crew to cease training entirely.
3. The Chinook crew were in radio communication with Chichester/Goodwood, who were notifying their traffic of the Chinook's presence at Thorney Island and display practice activity.
4. With a crew of three to lookout, a TAS and two display associated personnel on the ground at Thorney Island with direct radio communication to the Chinook crew, they were able to build good situational awareness of potential conflicts.

The Chinook pilot noted that the civilian pilot seemed either unaware or was not concerned by the potential danger of attempting to follow or formate on a Chinook, including the hazard of Chinook downwash. In the Chinook crew's opinion and assessment of the event, they believed there was no possibility that the civilian pilot had failed to visually acquire them and that he had positively attempted to follow or formate without permission and whilst not in communication with them.

He assessed the risk of collision as 'Medium'.

THE WT9 PILOT reports flying along the coast at low-level when he saw a Chinook about a mile ahead. He then saw a NOTAM on his electronic display and decided to orbit while he called Solent for clarification. He could not raise Solent and, on what he believed was his second orbit, he saw the Chinook in his right 1 o'clock, slightly above and at a range of 500yd. The pilot stated that he had not been visual with the Chinook after his initial sighting and initially whilst orbiting and that he believed he had been distracted by the NOTAM.

He assessed the risk of collision as 'Low'.

THE GOODWOOD FISO reports that a Chinook helicopter operating in the Thorney Island area reported to Goodwood ATS that a light-aircraft was following the helicopter as it was practicing a display routine. The pilot then detailed that he would like to report an Airprox and that he had stopped his display routine and tried to get clear of the aircraft which ended up in a follow and chase, with the Chinook pilot trying to evade it. The other aircraft was described as a small two-seat, 'T' tailed, single-engine, white coloured monoplane, the description being confirmed by other crew members on board the helicopter. The aircraft then 'tipped' towards the helicopter and proceeded to descend to low-level, the pilot of the helicopter estimating to 100ft agl. No further contact with the aircraft was made.

Factual Background

The weather at Southampton and Shoreham was recorded as follows:

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METAR EGHI 021420Z 30008KT 270V340 9999 FEW030 SCT042 21/11 Q1015=
METAR EGKA 021420Z 17006KT 7000 SCT032 18/15 Q1015=
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Analysis and Investigation

CAA ATSI

An Airprox was reported by a Chinook pilot when it came into proximity with a WT9 in the vicinity of Thorney Island. The Chinook pilot was in receipt of a Basic Service from Goodwood Radio. The WT9 pilot was not in receipt of an ATC service but had reported attempting to call Solent Radar, without success. Approximately 2 minutes prior to the reported Airprox, the WT9 was observed on radar transiting at low-level along the coast in a north-westerly direction. However, due to the low level nature of the flight, radar contact was lost in the vicinity of The Witterings. Radar contact was regained shortly before CPA (code 7000) and, at 1433:20, the WT9 was observed in an apparent right-hand turn at 600ft. (Figure 1).



Figure 1 – 1433:20



Figure 2 – 1433:50

At 1433:50 (Figure 2) the WT9 pilot had continued the right turn and the Chinook was observed north-east of the WT9 (code 7004). The Chinook radar return was also intermittent as it too was being operated at low level.

The closest point of approach observed on radar occurred at 1434:15 (Figure 3), with the WT9 north of the Chinook by 0.3nm and 100ft below.



Figure 3 – 1434:15

Goodwood Radio was providing a Basic Service to the Chinook without surveillance equipment. The Chinook aircrew reported that they considered the WT9 had attempted to formate on their aircraft but it was not possible to determine this due to the intermittent nature of the radar track data. Both aircraft were being operated in Class G airspace and both pilots were responsible for their own collision avoidance.

UKAB Secretariat

The Chinook and WT9 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard¹. Aircraft shall not be flown in formation except by pre-arrangement among the pilots-in-command of the aircraft taking part in the flight². In subsequent conversation with the WT9 pilot, it was established that he had a GPS track log of his route, which was forwarded to the UKAB. The relevant part of the GPS track is reproduced here:



Occurrence Investigation Summary

From a Chinook perspective the crew did everything they could to prevent this situation becoming worse. The only additional action they could have taken prior to the event was to establish a NOTAM; although this was considered by the crew, the reasons they did not are detailed in the narrative. The decision not to establish a NOTAM, given the potential risk on the ground to third parties, was a sensible one. Certainly from the Chinook perspective, the risk of MAC was minimal as the Chinook remained visual with the other aircraft throughout this incident.

Comments

JHC

Whilst it is laudable that the Chinook crew considered the eventualities and their mitigations very carefully before deciding against submitting a NOTAM for the proven outcomes of highlighting their activity to spectators, a middle ground could have existed in that the NOTAM could have been released at the latest reasonable time prior to the display practice. This would have alerted other air users but given less time for aviation enthusiasts to plan and muster in sufficient numbers to exacerbate any potential accidents. That said, given that the Airprox occurred, JHC believes that the crew did all in their power to reduce the risk of collision between themselves and the WT9 pilot, and taking the pilot of the WT9 at his word wonders how he could miss a large helicopter in clear skies completing high energy manoeuvres to the degree that he stated.

Summary

An Airprox was reported when a Chinook and a WT9 flew into proximity at about 1434 on Friday 2nd June 2017. Both pilots were operating under VFR in VMC, the Chinook pilot in receipt of a Basic Service from Goodwood and the WT9 pilot not in receipt of a Service.

¹ SERA.3205 Proximity.

² SERA.3135 Formation flights.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and reports from the appropriate operating authority.

The Board first discussed the Chinook crew's perception of events and noted their contention that the WT9 pilot was apparently attempting to formate on their aircraft. Commenting that the function of the Airprox Board was to determine the cause and risk of collision of incidents as opposed to determining whether there had been alleged criminal behaviour, the Chair cautioned that encounters are often described very differently by those involved depending on their perceptions and assumptions of the dynamics of an incident. The Chinook crew had assumed that the WT9 pilot had clearly seen them and was manoeuvring aggressively towards them; the WT9 pilot described not being visual with the Chinook at the time (after initially having seen it and discounted it as a threat) and simply orbiting in that area to determine the relevance of an unassociated NOTAM on his flight.

Members then went on to consider the Chinook crew's actions regarding the issuing of a NOTAM for their activity. The lack of a NOTAM for their practice was discussed at length, with some members considering its omission particularly ironic given that the WT9 pilot had reported orbiting to remain clear of a NOTAM whilst verifying its details, and would therefore presumably have likewise remained clear of any Chinook display practice NOTAM. Other members questioned whether the rationale of not issuing a NOTAM because of concern over potential harm to possible crowds of onlookers who may or may not gather was a pertinent factor to consider. Given the unknown extent and degree of such gatherings versus the risk from and to other airspace users of their dynamic manoeuvring, they wondered how many of the general public routinely reviewed NOTAMs to detect such practices and then purposely gathered in the area. If this really was perceived as a significant issue then it was suggested that a display practice NOTAM could be issued only a few hours before the practice was due to commence, and could be couched in terms of a general description of military aircraft manoeuvring rather than specific reference to a display practice. That being said, other members noted that such a NOTAM would constitute only a warning to civilian traffic anyway, and would not provide the separation assurance of an RA(T); they noted that many civilian aircraft conducted practice displays without NOTAM notification and therefore that submitting a NOTAM was not intrinsically a pre-requisite.

In the event, the Chinook crew were operating in Class G airspace in accordance with see-and-avoid requirements. The Chinook co-pilot had called for the practice to be terminated on observing a TAS contact and seeing the WT9 at a reported range of 2-3 miles and an altitude of 1000ft. It was established from the radar replay and the WT9 pilot's GPS track log that he had remained below 400ft altitude at that range, which members commented was an example of the degree of difference which could occur between perception and actuality. The Chinook pilot had sensibly entered an orbit whilst the intentions of the WT9 pilot were assessed and had additionally manoeuvred to increase separation. The Chinook crewman then perceived that the WT9 pilot was 'tipping in' on them and had reported that to the pilot whose subsequent actions were predicated on the belief that the WT9 pilot was attempting to formate on the Chinook. A GA member commented that the WT9 was a highly manoeuvrable aircraft and, given the WT9 pilot's assertion that he did not have visual contact with the Chinook at that stage, his coincidentally entering a right turn could easily be perceived as an attempt to manoeuvre closer to the Chinook. Members noted that the Chinook pilot had then made a transmission on the VHF Guard frequency but, although there was no harm in doing so, GA members commented that civilian light-aircraft radios did not normally have a facility to continuously monitor VHF Guard; some modern radios could monitor a standby frequency, but it was not normal practice to select VHF Guard on standby. Some members questioned whether the Chinook pilot could have taken more effective action by climbing away from the WT9 or by reversing his turn towards Thorny Island and landing on if required. However, members agreed that whilst many options could be suggested after the event, at the time the Chinook pilot was operating under the perception that another pilot was attempting to formate on his aircraft and was understandably concerned.

Turning to the WT9 pilot, members wondered whether his pre-flight planning had been sufficiently robust, in that he had apparently been faced with an unexpected NOTAM whilst en route. The Board

were aware that, of the 3 NOTAMs in the area relevant at the time, only one was ‘ahead’ of the WT9 pilot and that this one had been available before he took off. Members wondered if the WT9 pilot may have been distracted by information other than a NOTAM, but agreed that the reason for his distraction was academic, the fact remained that he had seen the Chinook at range but had then lost sight of it whilst attempting to contact Solent because of the reported NOTAM information; members agreed that this distraction was a contributory factor. The Board noted that the WT9 pilot reported entering a right-hand orbit and, having attempted to contact Solent without success, then saw the Chinook again in his right 1 o'clock at 500yd range. The WT9 pilot's choice of orbit location was questioned; some members wondered whether he could have manoeuvred away from the location where he last saw the Chinook, and all agreed that this would have been a better course of action. Members understood that he had been distracted by ‘in-cockpit’ activity, but agreed that a more robust lookout would probably have afforded him earlier visual contact with the Chinook and the ability then to afford it an appropriate degree of separation.

The Board agreed that they were concerned solely with the risk of collision and that, ultimately, whatever the intentions of the WT9 pilot had been, the cause of the Airprox was that the Chinook pilot had been concerned by the proximity of the WT9. Having maintained visual contact and taken action to increase separation, the Board were content that any risk of collision had been averted by the Chinook pilot.

Finally, members noted that whilst they could not comment on the WT9 pilot's alleged proximity to surface vessels, it was clear from his GPS track that he had not flown over houses at West Wittering, contrary to the Display Authoriser's perception of his track when viewed from Thorney Island. The Board agreed that, fundamentally, perception and mis-perception had played a major role in this Airprox; human perception was, by its nature, highly subjective and actual events could be very different from those perceived.

PART C: ASSESSMENT OF CAUSE, RISK AND SAFETY BARRIERS

Cause: The Chinook pilot was concerned by the proximity of the WT9.

Contributory Factor: The WT9 pilot was distracted by NOTAM information.

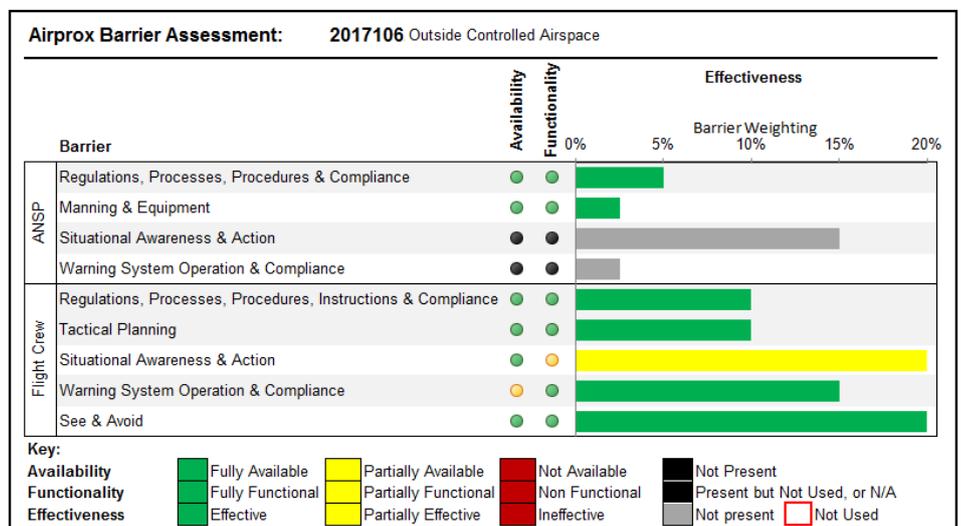
Degree of Risk: C.

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:

Flight Crew:

Situational Awareness and Action were assessed as **partially effective** because the WT9 pilot did not elect to hold in an area clear of the Chinook, which he had previously seen.



³ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](http://www.ukab.co.uk).