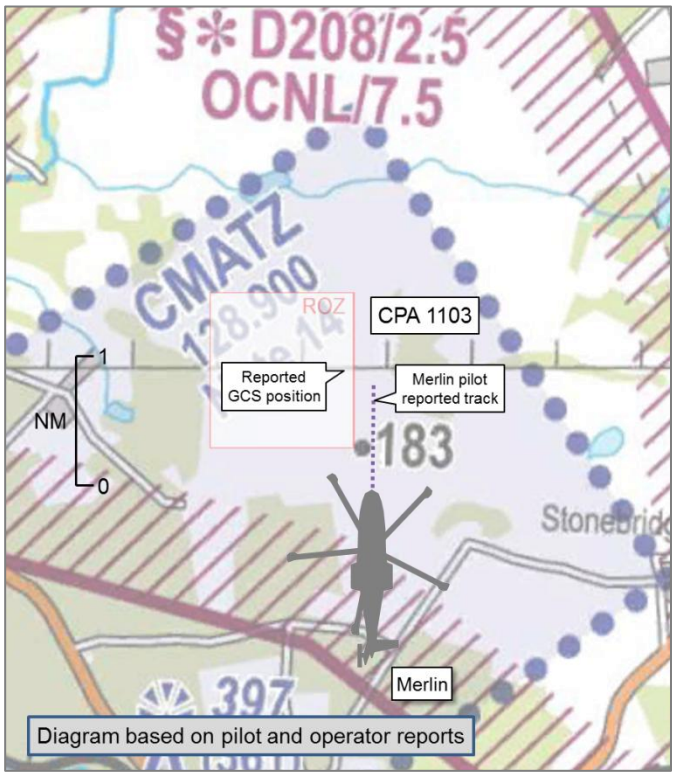
AIRPROX REPORT No 2014021

Date/Time: 27 Feb 2014 1103Z

Position: 5229N 00046E (EG D208)

Airspace: Lon FIR (*Class*: Danger Area)

	Aircraft 1	*Aircraft 2*
Type:	Desert Hawk UAV	Merlin
Operator:	1 Arty Bde	HQ JHC
Alt/FL:	20ft NK	100ft NK
Conditions:	VMC	VMC
Visibility:	NK	NK
Reported Separation:	60ft V/0m H	Not Seen
Recorded Separation:	NK	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE DESERT HAWK UAV COMMANDER reports conducting operations in support of an exercise in the Stanford Training Area (STANTA, EG D208). The UAV was in its pre-planned landing phase in the launch recovery landing zone, and about 20ft off 'grounding', when a Merlin helicopter approached the landing zone, travelling southeast to northwest. The UAV Operator perceived the Merlin to be at a height of about 80ft and banking hard to its left over the top of the UAV Ground Control Station location inside the UAV cleared working area. The working area deconfliction had been cleared through the Tactical Air Control Party (TACP), amongst others; the TACP had good 2-way comms with the Merlin crew, and had briefed them on the UAV working area. The UAV Operator was instructed not to abort the landing and to 'let it come in hard into trees' to avoid possible collision with the Merlin if the landing was aborted.

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

THE MERLIN PILOT reports transiting at low-level to a tasked landing site. The olive green camouflaged aircraft had HISLs, navigation and landing lights selected on, as was the SSR transponder with Modes A and C. The aircraft was not fitted with TAS or ACAS. The pilot was operating under VFR in VMC, not in receipt of an ATS. The crew was pre-briefed on exercise information, including the location of a Restricted Operating Zone (ROZ) from which a UAV unit was operating. Upon transiting at low-level from south to north, at 100kt and 100ft agl, to a tasked landing site within STANTA, about 300m to the east of the ROZ, the crew noticed some vehicles parked below, on the corner of a wood, outside the briefed ROZ location. The TACP asked if the aircraft could remain clear of the UAV ROZ upon returning to their starting location. Maps were checked and the Merlin navigator confirmed that the helicopter was outside the UAV ROZ during transit. As the aircraft recovered to the starting location, this time about 200m further to the east, travelling north to south, the handling pilot confirmed that the pre-noted vehicles were the UAV unit as there was a UAV on the ground next to the parked vehicles with approximately 5 personnel. Once at the starting location, maps were again checked and it was deduced that the UAV unit was about 300m to the east of the ROZ allocated for their use. The TACP was informed by the aircraft captain, who requested the UAV unit to check their location, stressing the potential severity of an incorrect base location.

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

THE OC TACP reports that upon checking in at mid-morning, the Merlin pilot was given a brief by the exercise TACP that there were several other airspace users, both fixed and rotary wing, as well as the UAV. Key to all of the information passed were the UAV working area co-ordinates, passed as a 4km^2 avoid from surface to 500ft agl. The Merlin pilot was briefed on this working area and all other air users during a face-to-face briefing prior to the day's tasking commencing. Later on in the day, the UAV Operator informed the TACP that the Ground Control Station had to emergency land the UAV due to the Merlin breaching their Working Area on its eastern boundary. The TACP then raised the Merlin pilot to inform him of this and to ask him to confirm his position. At this point the UAV Working Area was re-briefed. Due to this incident, several procedures were put into place. Aircraft supporting the exercise were required to read back all other airspace users and restrictions, and in times of high congestion UAV operations were required to cease.

Factual Background

The weather at RAF Lakenheath and RAF Marham was recorded as follows:

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METAR EGUL 271058Z AUTO 27014G23KT 9999 -DZ CLR 09/06
SPECI EGUL 271102Z AUTO 27017G23KT 9999 FEW021 SCT065 09/06
METAR EGYM 271050Z 26016KT 9999 FEW016 SCT200 09/05 Q1003 BLU TEMPO SCT020 WHT
METAR EGYM 271150Z 28015KT 9999 BKN025 09/03 Q1003 BLU NOSIG
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Analysis and Investigation

UKAB Secretariat

The Merlin pilot and UAV Operator shared an equal responsibility for collision avoidance and not to fly into such proximity as to create a danger of collision[1]. The UAV operator was required to operate the vehicle within his allocated airspace. The GCS location coordinates were established in a subsequent conversation with the UAV Commander.

Comments

JHC

The Merlin pilot positively identified a vehicle, personnel and a UAV on the ground at a position reported as outside the ROZ and the UAV Commander provided coordinates for the UAV GCS which placed it inside the ROZ. Whilst it has not proven possible to positively determine actual aircraft tracks, this incident highlights the need for stringent airspace coordination, which will become increasingly important as use of tactical UAVs increases.

Summary

An Airprox was reported when a Merlin and a Desert Hawk UAV flew into proximity at 1103 on 27th February 2014, within the STANTA Danger Area. The Merlin pilot was operating under VFR in VMC without an ATS. The UAV Operator was in visual contact with the UAV as it completed a landing. The UAV was required to operate within segregated airspace, in this case D208 for separation from civilian traffic and, more specifically, the ROZ within D208 for separation from other military traffic engaged in the exercise.

[1] Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions), as reflected in Military Flying Regulations.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the Merlin pilot, UAV Commander and OC TACP.

The Board quickly surmised that this Airprox had been generated by the Merlin overflying the UAV GCS; the issue at hand being whether the GCS was actually inside or outside the designated ROZ. When challenged by the TACP, the Merlin crew checked their route and confirmed that they had flown about 300m east of the ROZ eastern boundary. On a subsequent transit of the area the Merlin pilot reported sighting a vehicle, personnel and a UAV on the ground at a position also 300m east of the ROZ boundary. Conversely, the UAV Commander reported that the UAV GCS was inside the dedicated ROZ area. In the absence of any recorded information, the Board were faced with a simple conflict in reports regarding the actual location of the UAV GCS and the Merlin's ground track, which members agreed was not possible to resolve conclusively with the information available.

Nevertheless, the Board emphasised that this report met the criteria for Airprox reporting and commended the UAV Commander for doing so. It was felt that UAV operators may not all have a full understanding of Airprox issues, the Airprox process, or its applicability to UAV operations; the Board emphasised that Airprox include all forms of aerial vehicle, and that with the increasing use of UAV, Airprox occurrences involving them were bound to increase. With this in mind, the Board resolved to recommend that in order to ensure robust deconfliction from other airspace users, HQ JHC consider reviewing the robustness and coordination of Remotely Piloted Aerial Systems (RPAS) operations.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Not determined.

Risk Category: D

ERC Score[2]: N/S

Recommendation(s): HQ JHC consider reviewing the robustness and coordination of RPAS operations.

[2] Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.