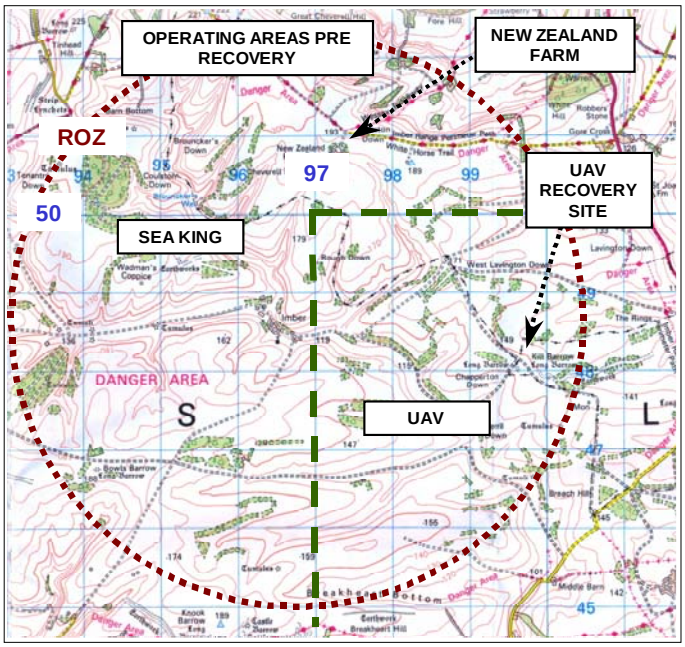
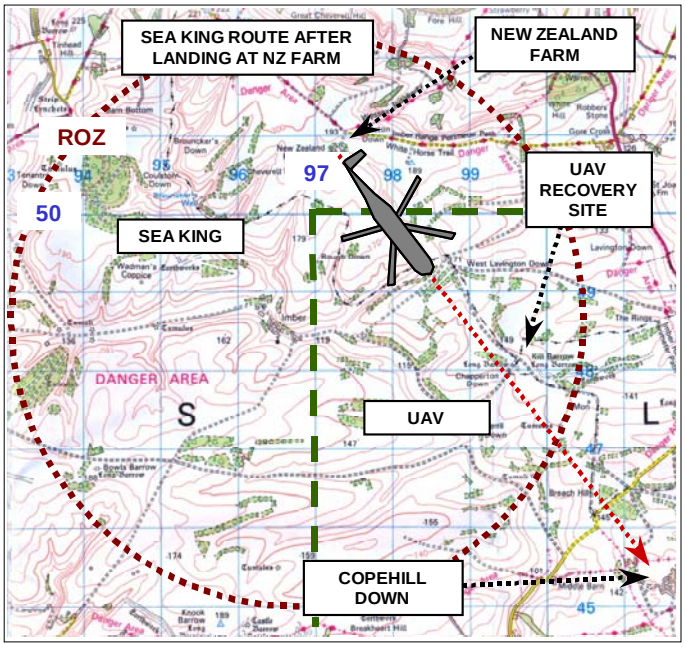
AIRPROX REPORT No 2010005

Date/Time:	12 Feb 1235	
Position:	5114N 00201W (SPTA - elev 488ft)	
Airspace:	SPTA DA	(*Class: G*)
	Reporting Ac	*Reported Ac*
Type:	DH3 UAV	Sea King
Operator:	Army (RA)	HQ JHC
Alt/FL:	300ft (agl)	Not above 100ft (agl)
Weather:	VMC CLBC	VMC CLBC
Visibility:	10km	9999
Reported Separation:		
	0ft V/300m H	Not Seen
Recorded Separation:		
	NR	





PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE DH3 MUAV PILOT reports that he was operating a small, non-SSR or TCAS equipped UAV in an exercise ROZ, 2nm in radius from 0-1500ft amsl centred on 5114N 00203W (see Diagram). Meanwhile a Sea King was cleared to operate in the ROZ and was being deconflicted geographically from the UAV by the Tactical Air Control Party (TACP).

DH3 Tactical Commander (TAC) informed the TACP that they needed to recover the UAV to position ST 997481 and confirmed that the Sea King was within its cleared area. The Sea King was inbound to New Zealand Farm Forward Operating Base (FOB), so the TACP recleared the UAV to operate in the SE corner of the ROZ, E of the 97E line and S of the 50N line. After confirming the position of the UAV, the TACP cleared the Sea King to enter the ROZ and directed it to route to the FOB from the North; the Sea King then landed at the FOB.

After taking off from the FOB a short time later the Sea King routed direct from the FOB to Copehill Down (2nm SSE of the landing site) at low level. This routeing took them through the airspace reserved for the DH3.

At this point the DH3 was turning left and descending, 300m out in its final landing pattern, flying at 32kt, when the Flight Safety Officer (FSO) saw the Sea King approaching 700m away. He carried out the immediate action drill, sending the UAV into an emergency orbit away from the flight path of the Sea King. The helicopter came within 300m of the UAV with both ac at the same alt. This was a very close encounter and had the FSO not reacted so quickly a mid air collision could have occurred. Since the Sea King was flying so low it was not seen by the air sentries and gave the Detachment little time to react; it was also too low for RT contact with the TACP.

The Officer Commending the exercise investigated the incident and it was found that a breakdown in communications between the Sea King and the JTAC (Joint Tactical Air Commander) lead to it flying through UAV segregated airspace.

THE SEA KING PILOT reports that he submitted a report at the time but it could not be traced. He was contacted 3 months after the event (when deployed) and passed a verbal report to his squadron who forwarded it to the UKAB.

Whilst conducting troop drills as part of a pre-deployment exercise in the SPTA as a singleton he was tasked to a landing site at New Zealand Farm. They contacted the exercise Airspace Manager who informed them that a ROZ was active due to Desert Hawk UAV activity. Good 2-way comms were subsequently established with the appropriate TACP who positively cleared them into the ROZ from the N to the LS and then to depart to the SE not above 100ft. About 5min after they departed the ROZ, the Airspace Manager contacted them on the radio questioning their clearance into the ROZ and they explained the clearance as they understood it.

On completion of their tasking they returned to the Ops Centre to find out there had been an Airprox reported between them and a UAV.

None of the crew saw the UAV at any point.

He reported the weather as being: OVC010, 9999, not strong wind, time approx 1400.

UKAB Note (1): A ROZ is defined in AJP 3.3.5(A) as:

'Restricted Operating Zone (ROZ). A ROZ is established in order to reserve airspace for specific activities in which the operations of one or more airspace users is restricted (e.g. refuelling orbits, terminal approach holding areas, landing/drop zones, etc.).

a. A pre-planned ROZ will be published in the ACP [Airspace Co-ordination Plan].
b. Requests for activation of ROZs are to be made to the parent/affiliated ACC.
c. Activated ROZs will be published in the ACO.
d. Unless defined in ACPs promulgation of such zones should include:

(1) Vertical and horizontal dimensions.
(2) Use.
(3) Times of activation.
(4) Controlling authority and frequencies (if applicable).
(5) Restrictions for other airspace users, e.g., WCS.'

UKAB Note (2): By delegation from the ASOC, the TACP controls a ROZ in that they approve ac entry/exit and can restrict air operations to deconflict ac therein by time or geographical sub-division. As with all Class G airspace, however, see and avoid is the principal means of collision avoidance (even for UAVs) unless the airspace is ceded exclusively to a single ac. In this case, the ROZ was established for UAV Ops but a high priority task requiring ROZ penetration took place during the period of a UAV flight.

UKAB Note (3): This incident took place during the final work-up exercise before the participating units deployed to an operational theatre. It was therefore specifically designed to be representative and challenging with some unorthodox situations.

The DH3 Aircraft Operating Authority (AOA) comments that the DH3 MUAV report above contains the details of the AIRPROX from the operator's perspective. The AOA is content that the operators carried out their duties in accordance with the policy and direction laid down in JSP 550 and the 1 Arty Bde Flying Order Book. The Safety Team grounded the DH3 until they were assured that the risk had been removed. This was done by contacting all the parties concerned and educating other air users on MUAVs.

AOA Note: UAVs are unable to operate using the principle of 'see and avoid'. To ensure an appropriate layer of safety, in line with JSP 550 Reg 307 and 320 a 'layered safety' approach must be used for collision avoidance, which is equivalent to a manned ac. Therefore, all UAVs are flown in segregated airspace, which is achieved by operating the UAV within a ROZ - it is vital that airspace issues are coordinated and that the UAV is allocated sufficient space to manoeuvre safely. Segregation/deconfliction from other ac when conducting non-operational flying on established ranges is the responsibility of the FAC.

HQ JHC comments that the safe operation within ROZs depends on a well-conceived deconfliction plan that is understood and then implemented by the airspace users. In this case, it would appear that the Sea King crew understood that they had been cleared to fly the route that they followed, but this put them in direct conflict with the DH3. Without a statement from the TACP it is impossible to know if this clearance had been given. The size of the DH3 makes it very difficult to see, and it was undoubtedly the prompt actions of the UAV operator that allowed this conflict to be resolved. The challenging nature of this pre-deployment exercise is deliberate, as it is designed to get both TACPs and the airspace users familiar with high pressure and fast moving scenarios. However, some simple good airmanship, such as a blind call from the Sea King crew that they were lifting from the LS and routing to the SE may well have allowed the TACP to intervene to prevent this incident. The necessity for unambiguous and timely clearances is vitally important when de-conflicting UAVs as firstly, they are difficult to see and secondly, the tactical nature of the task means that radio contact is difficult and air sentries are of limited use.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac and the appropriate operating authorities.

Since this incident was very similar to Airprox 2010004 and was considered by the Board in parallel with it, the generic issues are discussed in that report are not repeated here.

This incident was different from 2010004 in that the Sea King crew appear to have understood from the FAC that they should depart to the SE the New Zealand farm landing site and continue directly to Copehill Down. This routeing took them close to the UAV landing site, of which they were unaware, and in the absence of a report from FAC or RT recordings it was not possible for the Board to determine why they had apparently not been deconflicted laterally from the landing area by the FAC.

As in Airprox 2010004, the second line of defence of the safety procedures had ensured that the Sea King was seen in time for the UAV operator to take effective avoidance and remove any risk of the ac colliding.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Conflict in a ROZ resolved by the UAV operator.

Degree of Risk: C.

Recommendation: (See Airprox 2010004)