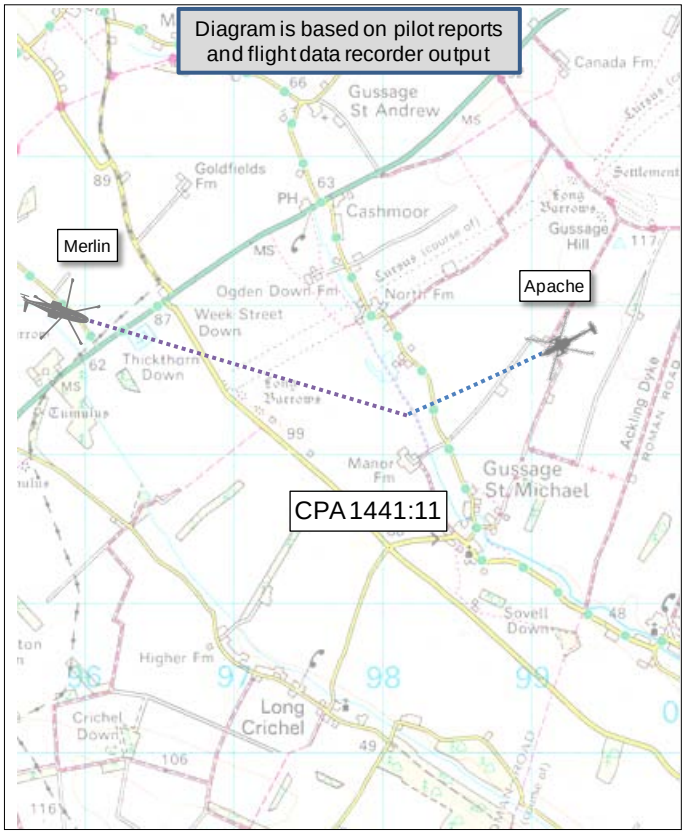
AIRPROX REPORT No 2012073

Date/Time:	31 May 2012 1442Z	
Position:	5054N 00202W (10nm SW Salisbury)	
Airspace:	Lon FIR-LFA2	(*Class: G*)
	Reporting Ac	*Reporting Ac*
Type:	Apache	Merlin
Operator:	HQ JHC	HQ JHC
Alt/FL:	75ft RPS (1014hPa)	100ft RPS (1016hPa)
Weather:	VMC CLBC	VMC CLBC
Visibility:	30km	10km
Reported Separation:	25m	0ft V/60ft H
Recorded Separation:	NR	

BOTH PILOTS FILED



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE APACHE PILOT reports conducting a daytime route reconnaissance for a planned subsequent Night Vision System (NVS) sortie, operating under VFR and heading 280° at 50kts at a height of approximately 75ft agl. The dark green ac had landing lamp and white strobes selected on and was squawking with Modes 3A, C and S. The Co-pilot/Gunner (CPG) [sitting in the front seat] saw a camouflaged helicopter in his 1 to 2 o'clock position at a range of less than 200m on a collision course. He called 'Aircraft, Pull up' and at the same time pulled back on the cyclic. The other ac passed underneath and down the LH side. During the avoiding action the ac Flight Control System (FCS) degraded to a reversionary mode in roll, caused by the mismatched control inputs from the front and rear-seat pilots. During the return flight to base it was noticed that the engines had suffered a dual over-torque.

The pilot assessed the risk of collision as 'Very High'.

THE MERLIN PILOT reports conducting a low-level transit as part of a training sortie. He was operating under VFR in a green ac with navigation lights, two landing lights and white upper and lower strobes on. After departure from Blandford Forum HLS, heading 110° at 120kts and 100ft agl, the RHS pilot looked inside the cockpit in order to select the Middle Wallop APP frequency, to obtain a BS for the transit. The LHS pilot was the HP at the time and was looking out. The centre seat 'Nav' was also assisting in look out, but with a limited field of view due to the jump seat position. As part of the training the number one crewman (front) was conducting the navigation, biasing his lookout forward. The two remaining crewman were on opposite sides of the cabin, with the rear crewman biasing his lookout to the R due to the RHS pilot being 'heads-in'. When the LHS pilot looked L, as part of his lookout scan, he was confronted with an Apache helicopter, in an extremely high nose up attitude at the same level and at a range of approximately 60ft. The centre seat Nav saw the Apache at the same time, which appeared to have been masked by the windscreen coaming until the last moment. There was insufficient time for avoiding action to be taken.

The pilot assessed the risk of collision as 'Very High'.

THE APACHE SQN FSO stated that mission planning system data, tapes and maps had been quarantined for further investigation.

THE MERLIN SQN COMMANDER commented that it was extremely fortunate that the avoiding action of the Apache crew had prevented a much worse outcome and that maps, authorising sheets and data recordings had been quarantined to facilitate a hoped for HQ JHC investigation. He also opined that an ACAS would have been likely to have prevented this occurrence and that, frustratingly, this mark of Merlin was delivered to the RAF with TCAS fitted but that the system was removed due to its being unsupported. He concluded by strongly recommending that a TCAS system is procured as a matter of urgency, given that mid-air collision is one of Commander JHC's top risks.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, reports from the appropriate operating authorities and a computer-generated reconstruction of the ac flight paths, including cockpit voice recording. Radar video recordings were available but the ac contacts were below the base of recorded radar coverage.

The voice recordings accompanying the computer-generated reconstruction revealed that both crews were undertaking tasks that involved some 'heads-in' time. Therefore Board Members initially discussed the CRM in both ac, especially the amount and allocation of lookout, given the task each crew was undertaking. The AAC Member explained that the Apache crew's task was to reconnoitre by day a planned night-flying route in order to ensure that digital information stored by the ac's systems on potential vertical obstructions, such as pylons, aligned with real world information and to annotate positions where unmapped obstructions existed. The aim was to enable the night route to be flown at reduced risk. The JHC Member explained that the Merlin crew were attempting to contact Middle Wallop to obtain a BS but that the subject version of Merlin is fitted with a communication control system designed such that frequency changes can take up to 16 seconds. He reiterated that the RHS pilot was 'heads-in' completing that task, but he also opined that, given the number of crew in the Merlin, their lookout was not effective as a result of inefficient CRM. Overall, the Board considered that CRM was a factor on both cockpits.

The helicopter Member raised the issue of route coordination between the helicopters prior to their sorties. The AAC Member replied that there was no coordination; the Apache was within a Dedicated User Area (DUA) and the computerised deconfliction system (CADS) is not mandated for day sorties. He also opined that the issue of coordination would be examined by the JHC investigation, the results of which would be available shortly.

Recalling a previous Airprox between military helicopters and a formal Safety Recommendation to fit ACAS [Airprox 2011/006 dated 24th January 2011], Members considered that this incident could have been avoided if the ac had been fitted with ACAS. A civilian pilot Member informed the Board that FLARM (Flight Alarm), commonly fitted to gliders, is an inexpensive and relatively easy-to-fit option that has proved effective in helicopters in Europe. Members agreed that Director UKAB should write to HQ JHC to highlight this incident, lending weight to the requirement to fit ACAS.

The Board was unanimous in its determination of the cause. Assessment of the degree of risk was greatly assisted by the computer generated flight path reconstruction and cockpit voice recording. After playback of the reconstruction, it was readily apparent that the ac avoided collision by the narrowest of margins and that the actions of the Apache crew were instrumental in achieving separation. The Board commended the Apache crew on their life-saving manoeuvre.

[UKAB Post-meeting Note: A JHC Investigation concluded that the minimum ac separation was likely to have been 48ft.]

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by the Apache crew and effectively a non-sighting by the Merlin crew.

Degree of Risk: A.