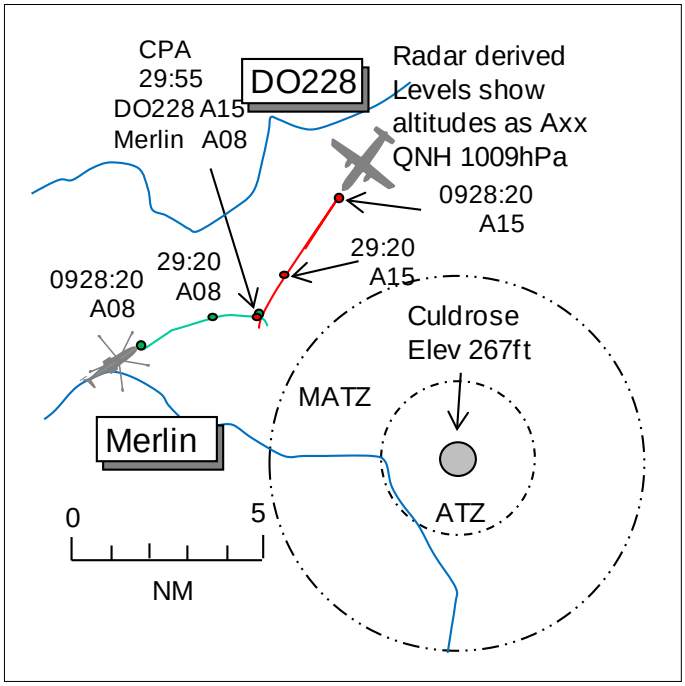
AIRPROX REPORT No 2012122

Date/Time:	14 Aug 2012 0930Z	
Position:	5009N 00524W (7nm NW Culdrose)	
Airspace:	Culdrose AIAA	(*Class: G*)
	Reporting Ac	*Reported Ac*
Type:	Merlin	DO228
Operator:	HQ Navy	Civ Comm
Alt/FL:	500ft QFE (999hPa)	1800ft↓ QNH
Weather:	VMC CLBC	VMC CLBC
Visibility:	10km	20nm
Reported Separation:	100-150ft V	400ft V/50m H
Recorded Separation:	700ft V/Nil H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE MERLIN PILOT reports returning to Culdrose, VFR and in receipt of a BS from Culdrose Tower on UHF, squawking 7030 with Modes S and C. The visibility was 10km flying 100ft below cloud in VMC and the ac was coloured grey; lighting was not reported. When just outside the MATZ boundary about 6nm to the NW of Culdrose heading 090° at 120kt and level at 500ft QFE 999hPa, a light twin-engine ac was noticed about 0·25nm away just before it flew directly O/H from L to R by about 100-150ft. There was a thin band of cloud (50-100ft) covering 3 OKTAS and the ac appeared in one of the cloud gaps. He assessed the risk as medium.

THE DO228 PILOT reports a dual training sortie from Newquay, VFR and in receipt of a TS from Newquay on 133·4MHz, squawking 7400 with Modes S and C. The visibility was 20nm flying 100ft below cloud in VMC and the ac was coloured white/blue with nav and strobe lights switched on. A new pilot (FO) was in the LH seat and he was descending the ac slowly in order to remain VMC. About 8nm E of LND heading 220° at 140kt Newquay called a target, the Merlin, as traffic which was seen on TCAS at 10nm. He, the Capt, was aware of the Merlin's proximity throughout and could see there was no risk of collision. He monitored the TCAS TA and anticipated an RA that did not come so he left full control of the ac with the PF. They saw the Merlin at range 0·5nm and estimated they passed 400ft above and 50m from it at the CPA. He assessed the risk as none.

THE CULDROSE TOWER CONTROLLER was working in the VCR and Radar was unmanned. There were 2 ac on families' day flights out to a range of approximately 8nm and back again and the flights remained on Tower frequency throughout. It was during one of these flights that the subject Merlin flight called to report an Airprox when it was at the MATZ boundary, 5nm WNW of Culdrose. The pilot stated they had been overflown by approximately 100ft by an ac, possibly a DHC6 Twin Otter, but there was a thin layer of cloud between them and the other ac. The other ac was travelling in a S'ly direction. She noted the details passed and checked the Hi-Brite display and noticed a SSR return in the vicinity, identifying as a Newquay flight indicating 1600ft on Mode C. After speaking to a spare controller nearby, they liaised with Newquay and found out that the ac was a DO228 under a radar service. Also, the Newquay controller had called the Merlin to the DO228 crew who had reported visual with it. It was not confirmed that the DO228 was the ac involved in the Airprox. The Merlin crew reported at 500ft QFE 999hPa so if the DO228's Mode C was correct it would have put the ac 600ft above the Merlin. If there had been a light civilian ac in the vicinity at the time without a

transponder he would not have been able to see it as the Watchman primary radar was on maintenance and they were operating SSR only.

SATCO CULDROSE reports the controller in the VCR was monitoring 122·1MHz [NATO Common] but not 134·05MHz [APP]. Newquay had contacted Culdrose ATC prior to the event and established Culdrose was open. After the alleged Airprox the Culdrose ATCO rang Newquay who informed them that Newquay ATC had called the Merlin to the DO228 flight and he had reported visual.

THE NEWQUAY RADAR CONTROLLER reports the DO228 was outbound to the S on a local sortie and under a TS at 1500ft. Culdrose was NOTAMed as closed and a further NOTAM stated LARS was not available. On observing the DO228's initial track he asked the crew where their route took them in relation to Culdrose and the crew replied "N and W of the MATZ". With this information and the observed track and despite the NOTAMs, Culdrose was telephoned from the assistant's position to offer the DO228 to them as there were 2 Culdrose squawks operating on the coast between Culdrose and Penzance Heliport. Culdrose ATC did not wish to work the DO228 but confirmed they could see it on their radar and that they had 2 Merlins operating on the coast; this was in keeping with what was shown on radar. He called the Culdrose traffic to the DO228 flight and explained that Culdrose was not able to provide a service but the traffic was believed to be a Merlin. Mode C showed the DO228 approximately 500ft above the Culdrose traffic. He called the traffic once again as the radar blips closed at which point the crew reported "visual".

ATSI reports that the Airprox occurred at 0929:55 UTC, 7nm to the NW of Culdrose and 23nm SW of Newquay, within Class G airspace, between a Merlin and a DO228.

The Merlin was returning to Culdrose after the completion of a local flight and was just NW of the Culdrose MATZ boundary in VMC conditions. The Merlin was in receipt of a BS from Culdrose Tower and had SSR code 7030 selected. Culdrose Radar was unmanned - the Watchman primary radar was on maintenance with SSR only available. Culdrose had issued 2 NOTAMs indicating that the airfield was closed and that LARS was not available.

The DO228 was operating from Newquay Airport on a VFR flight and was in receipt of a TS from Newquay Radar. The DO228 had SSR code 7400 selected.

CAA ATSI had access to area radar and Newquay Airport radar recordings, together with a written report from both ac pilots and both air traffic controllers. The area radar did not show the occurrence and Newquay radar recordings were used for analysis.

The METARs for Culdrose and Newquay were:

EGDR 140850Z 17006KT 9999 FEW014 SCT018 18/17 Q1008 WHT TEMPO SCT012 GRN=
EGDR 140950Z 15010KT 9999 VCSH SCT010 SCT016 18/17 Q1009 GRN NOSIG=
EGHQ 140920Z 16011KT 9999 SCT012 17/15 Q1009=

Two Merlin helicopters were operating locally from Culdrose Airport on short flights to the coast and return. The Newquay controller's written report indicated that there were 2 NOTAMs reporting that Culdrose was closed and also that LARS was not available.

The Culdrose Tower controller's report stated that there was only 1 controller in the Tower and that radar was unmanned.

The DO228 departed from Newquay Airport VFR at 0920 on a SW'y track, for an operational flight over the sea. At 0921:20 the DO228 flight contacted Newquay Radar and a TS was agreed. The DO228 crew reported operating at 1400ft.

At 0925:25, in response to a request from the Newquay controller, the DO228 pilot confirmed that the intended route would pass N of the Culdrose MATZ.

At 0925:50, the Newquay controller decided to contact Culdrose and check if they were interested in working the '(DO228)c/s', passing close to the N of Culdrose. Culdrose replied, "not at the moment" and advised of 2 Merlin helicopters running out to the coast and back again. Culdrose asked, "how close" and Newquay responded, "N of the MATZ", asking if Culdrose could see the traffic on radar. Culdrose advised of limited radar due to being SSR only but reported that they could see the DO228 and just had the 2 Merlins. From the radar recordings it would appear that the 2 Merlins were operating independently, some distance apart.

At 0928:20, the Newquay controller advised the DO228 flight, *"..traffic information right one o'clock range of six miles manouevring indicating eight hundred feet believed to be a Merlin helicopter. I've spoken to Culdrose they are not providing a LARS but er they described the only traffic they have in the vicinity as a Merlin."* The DO228 pilot replied, *"Roger that (DO228 c/s)....."*. The Newquay controller added, *"It's indicating 800ft now"* and the DO228 crew acknowledged, *"(DO228 c/s) looking out*."

At 0929:20, the Newquay controller updated the TI, *"(DO228 c/s) that previously mentioned traffic right one o'clock two and a half miles opposite direction indicating eight hundred feet."* The DO228 pilot replied, *"(DO228 c/s) looking but er not seen*."

At 0929:41, radar shows the 2 ac on converging/crossing tracks at a range of 1nm as shown in picture 1 below.

Picture 1 (0929:41)

At 0929:50 the DO228 pilot transmitted "*and we're now er visual with the traffic as we pass overhead.*" Radar at 0929:55 shows the DO228 at an altitude of 1500ft and the Merlin at 800ft, as shown in picture 2 below.

Picture 2 (0929:55)

The 2 ac initially maintained their respective levels as they diverged and shortly afterwards the Merlin began a descent. The Newquay controller advised, *"(DO228 c/s) limited traffic information from all*

around as you approach the edge of solid radar cover." The DO228 pilot responded, *"(DO228 c/s) er we'd like to go feet wet and if you've nothing further for us we'll er go en-route."* The Newquay controller acknowledged with, *" (DO228 c/s) affirm ...."*

The written report from the Culdrose Tower controller stated that the pilot of the Merlin reported being overflown by another ac approximately 100ft above. The controller noted the details and then checked the ATM and noticed the 7400 return from the DO228. As the previous phonecall appears to have been conducted by a different controller it is unclear to ATSI whether or not the Culdrose Tower controller was aware of the presence of the DO228 prior to the report from the Merlin pilot.

At 0934:50, Culdrose contacted Newquay and indicated that one of the Merlin helicopters had reported an Airprox which had occurred 5min earlier. The other ac was believed to be a Twin Otter that passed 100ft over the Merlin and Culdrose asked if Newquay were aware of the Twin Otter. The Newquay controller initally reported the other ac as an Islander which Newquay had previously passed traffic details on, with the option for Culdrose to work the traffic. Culdrose acknowledged this and indicated that they were just trying to clarify the type of the other ac. The Newquay controller then checked and confirmed the ac invoved was in fact a DO228 and not an Islander.

The Merlin pilot's written report indicated that there was a cloud covering 100ft above and he had noticed a twin-engine ac as it flew directly above in a gap in the cloud.

Culdrose had issued 2 NOTAMs to promulgate the airfield as closed and also that LARS was not available. Despite these NOTAMs, Newquay decided to check with Culdrose who indicated that they did not wish to work the traffic but reported working 2 Merlin helicopters. It was noted that Newquay did not specify the type of ac when passing traffic details. Culdrose reported that radar was limited due to SSR only, but added that they could see the transit aircraft on radar.

The Merlin flight was in receipt of a BS from Culdrose Tower. Whether or not the Culdrose Tower controller was aware of the presence of the DO228 prior to the incident, under the terms of a BS there is no requirement to pass TI and the pilot is expected to discharge his responsibility for collision avoidance without assistance from the controller.

The DO228 flight was in receipt of a TS from Newquay Radar. CAP774, Chapter 3, Paragraphs 1 and 5, state:

> 'A Traffic Service is a surveillance based ATS, where in addition to the provisions of a Basic Service, the controller provides specific surveillance-derived traffic information to assist the pilot in avoiding other traffic. Controllers may provide headings and/or levels for the purposes of positioning and/or sequencing; however, the controller is not required to achieve deconfliction minima, and the avoidance of other traffic is ultimately the pilot's responsibility.
>
> The controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard, or if requested by the pilot. However, high controller workload and RTF loading may reduce the ability of the controller to pass traffic information, and the timeliness of such information.'

For ac operating within Class G airspace, CAP774, Chapter 1, Page1, Paragraph 2, states:

> 'Within Class F and G airspace, regardless of the service being provided, pilots are ultimately responsible for collision avoidance and terrain clearance, and they should consider service provision to be constrained by the unpredictable nature of this environment…'

The Newquay controller passed the DO228 flight appropriate TI and updated the information until the DO228 pilot reported visual with the Merlin. Radar shows the vertical distance between the 2 ac was 700ft.

The Airprox was reported after the Merlin helicopter pilot, in receipt of a BS from Culdrose Tower, became concerned about the proximity of the DO228 as it passed 700ft O/H.

The Newquay controller recognised the potential conflict with traffic in the Culdrose area and liaised with Culdrose and then passed appropriate TI to the DO228 pilot, thereby assisting the DO228 in visually acquiring the traffic.

HQ NAVY comments that this Airprox occurred outside of the Culdrose MATZ during a period where the airfield should have been closed for block leave, but had been opened temporarily for VFR operations with 2 helicopters. The Newquay controller was aware that Culdrose was open and had ascertained that the controller was not able to work the LARS transit as they were operating tower only. The DO228 was 700ft above the Merlin, which was called in as TI. The Merlin was flying clear of cloud and in sight of the surface and did not see the DO228 until they were very close, although his perception was that they were closer than subsequently discovered. It was correct to NOTAM the LARS service as unavailable, however care must be taken when issuing a NOTAM stating that the airfield is closed when there is planned flying taking place, as this can cause confusion.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, radar video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

It was clear that the Merlin crew was surprised by the appearance of the DO228 and, possibly as a result of this surprise, they perceived less vertical separation pertained as the ac crossed than was actually the case. This may have been because their 'mental model' was that the conflicting ac was a Twin Otter flying close-by whereas the traffic was a larger ac further away. Controller Members thought that had Culdrose given TI on the DO228 to the Merlin crew it would have improved the crew's SA and removed the 'surprise' element. Under a BS Culdrose ATC was not obliged to pass TI; the information passed by Newquay on the telephone was accepted by a different Culdrose controller so it was not clear if the Tower controller was aware of the DO228's presence. That said, in Class G airspace both crews were responsible for maintaining their own separation from other traffic through see and avoid. The DO228 crew had improved their SA through a TS from Newquay Radar and the TI they received had drawn their attention to the Merlin. Its position and subsequent flightpath was monitored on TCAS, the DO228 crew becoming visual at range 0·5nm and they were happy that there was no risk of collision. The recorded radar reveals 700ft vertical separation as the 2 ac crossed. Given these circumstances, the Board agreed that the Merlin crew had underestimated the separation and the benign incident could be classified as a pilot perceived conflict where normal procedures, safety standards and parameters pertained.

The Navy Ops Member was disappointed that the aerodrome had been NOTAM'd closed when it was active; however, the outcome was not affected as the Newquay controller was cognisant of the Culdrose activity from the 2 Merlins displayed on radar.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Pilot perceived conflict.

Degree of Risk: E.