

## **AIRPROX REPORT No 2010057**

Date/Time: 26 May 2010 1352Z

Position: 5025N 00458W (1½nm  
SE of Newquay Cornwall  
Airport - elev 390ft)

Airspace: Newquay ATZ (Class: G)

Reporting Ac Reported Ac

Type: DHC-8-311 Super Lynx

Operator: CAT MFT

Alt/FL: 1200ft↑ 1500ft  
QNH (1009mb) QNH (1009mb)

Weather: VMC CLOC VMC CLOC

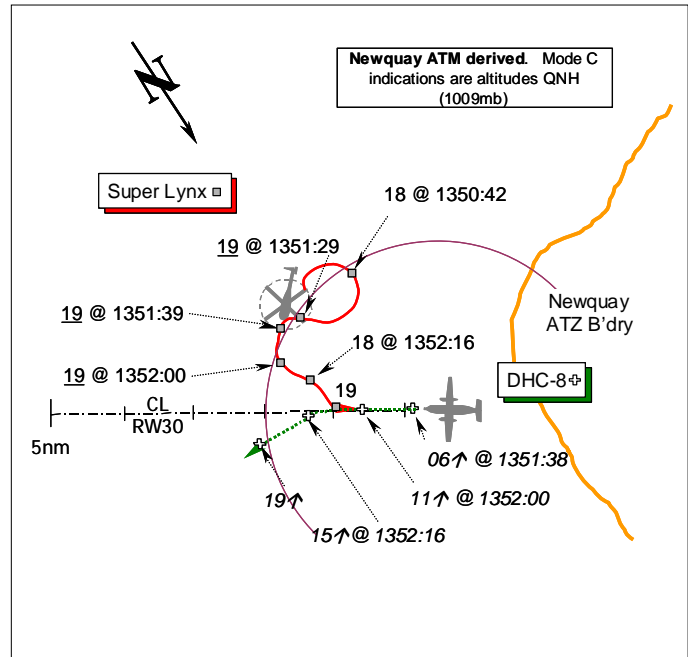
Visibility: 9km 5km

Reported Separation:

200ft V/500m H

Recorded Separation:

300ft V/0.5nm H



## **PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

**THE DE HAVILLAND DHC8-311 PILOT** reports he was departing from Newquay Airport bound for London/Gatwick under IFR and in receipt of an Aerodrome Control Service from Newquay TOWER on 134.375MHz. The assigned squawk of A1731 was selected with Mode C. Mode S and TCAS are fitted.

RW30 was in use with 2 helicopters in the LH cct, but on taxiing-out he thought [actually at start-up], he requested RW12, subject to traffic, to facilitate a more expeditious departure to the E. This was approved by ATC and they lined up for take-off on RW12. Shortly before departure they heard TOWER advising one of the helicopter pilots on RT that their DHC-8 would be departing from RW12 and to remain clear of the climb-out for RW12. However, after take-off, following a TCAS TA whilst executing their initial climb through 1000ft aal at 150kt he became very concerned about the proximity of this cct traffic. He asked his 1<sup>st</sup> Officer – the PF - if he could see the cct traffic, who said it was descending towards them in a turn onto the FAT for RW30 – to starboard. To avoid the cct traffic he instructed his 1st Officer to make an early L turn off the RW heading of 120° on track DAWLY, the standard noise abatement procedure being to climb straight ahead until passing 2400ft QNH. Advising TOWER whilst in the L turn that they had received a TCAS 'ADJUST VERTICAL SPEED' RA, they continued the turn whilst complying with the demanded RA. He added that the cockpit workload was high at the time, while setting climb power. The Lynx helicopter passed about 500m away 200ft above his ac with a 'high' risk of collision and he reported the Airprox after landing.

His ac has a purple and white livery; the HISLs and high-intensity landing lights were all on.

**THE AGUSTA WESTLAND SUPERLYNX CAPTAIN** reports that he was flying a VFR instructional sortie in the LH cct to the RW in use - RW30 - whilst operating at 70kt and in communication with Newquay TOWER on 134.375MHz. A squawk of A1746 was selected with Mode C.

TOWER instructed him to hold downwind L in a RH orbit, to enable the departure of a DHC-8, which had been cleared by ATC to depart from RW12. Once the DHC-8 was airborne, TOWER asked if they were visual with the departing ac, which they had been throughout the airliner's take-off, climb-out and departure. After reporting to TOWER they were visual with the DHC-8, the controller cleared them to continue with their approach to RW30, behind the departing DHC-8. Once the DHC-8

climbed through his helicopter's level, he thought, he resumed his L base-leg to RW30 behind the departing DHC-8. No avoiding action was necessary; they had been in a RH holding pattern with minimum horizontal separation of 2½nm when at the same altitude and the Risk was 'none'. He was informed of the Airprox by Newquay ATC on the telephone after landing. The helicopter has a grey and red colour-scheme and the HISLs were on.

**THE NEWQUAY CORNWALL AERODROME CONTROLLER (ADC)** reports that for expedition the DHC-8 was departing from RW12 while the Lynx helicopter that had been circuiting to the runway in use - RW30 - was held in a RH orbit on the LH downwind leg to RW30. The Lynx crew, who reported visual with the departing DHC-8, was told to 'give way' and to report final for RW30. This instruction was read-back correctly by the Lynx pilot but his subsequent flight-path was too close to the departing DHC-8, resulting in a TCAS RA and the DHC-8 crew requesting an early L turn, which was approved.

The Newquay 1350 METAR was: 010°/4kt; 9km nil Wx; Cloud SCT at 1700ft; 14/10; QNH 1009mb.

**ATSI** reports that the Airprox occurred between the DHC-8 and the Lynx helicopter, in Class G airspace, 1.75nm SE of Newquay within the Newquay ATZ. The ATZ extends to a height of 2000ft above the airport elevation of 390ft and is bounded by a circle 2½nm radius centred on the mid-point of RW12/30.

The Lynx crew was carrying out a training exercise in the cct and RW30 was the runway in use. The DHC-8 was a scheduled flight departing from Newquay to Gatwick. Both ac were in receipt of an Aerodrome Control Service from Newquay TOWER on 134.375MHz. Ground Movement Control (GMC) was not manned.

The ADC assessed his workload as moderate. All equipment was reported as being serviceable and the ADC had access to VDF and an ATM. The Newquay MATS Pt2, Page 112, states:

An ATM is installed in the VCR in order to achieve maximum runway utilization and aerodrome capacity. The ATM is slaved off the primary radar system and is overlaid with SSR data. The ATM is aligned in such a way that the ADC can view inbound/outbound traffic in the same relative position as the view from the VCR window. The normal range selected is 15nm although is variable by selection.

The information indicated can be used in the following circumstances:

- To determine the landing order, spacing and distance from touchdown of arriving ac;
- To enable the controller to confirm that the initial track of a departing ac conforms with the clearance issued;
- To assist in applying longitudinal separation for departing ac.
- To provide information to ac on the position of other aircraft in the circuit or undertaking an instrument approach.

The DHC-8 crew had requested RW12 for departure and would be expected to comply with the Newquay noise abatement procedures as specified in the UK AIP at AD 2-EGHQ-1-6: Runway 12 departures: 'Aircraft 5700kg or more: Climb straight ahead until above 2000ft aal'.

MATS Pt1, Section 2, chapter 1, page 1, Para 2.1 states:

Aerodrome Control is responsible for issuing information and instructions to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic and to assist pilots in preventing collisions between:

- a) aircraft flying in, and in the vicinity of, the ATZ;
- b) aircraft taking-off and landing;
- c) aircraft moving on the apron;

d) aircraft and vehicles, obstructions and other aircraft on the manoeuvring area.

Prior to the incident a Jet Ranger helicopter had been manoeuvring on the N side of the airfield, however, due to the impending Lynx departure and in order to conform with the cct direction, the Jet Ranger had been instructed to join the LH cct for RW30.

At 1341:12 the Lynx pilot called TOWER, "[C/S] for left hand circuit request 5 hundred feet for..autorotation to the northern." Tower replied, "[C/S] that's approved into the left hand circuit clear for take off wind 3-3-0/7."

At 1341:45 the DHC-8 crew transmitted, "TOWER good afternoon...[C/S]...we've got information whisky 1-0-0-9 request start and if possible a departure off runway 1-2." TOWER responded, "...start approved...I think 1-2 should be available for you", which was acknowledged by the DHC-8 crew. Opposite runway departures are approved at Newquay, provided they can be accommodated safely within the prevailing traffic conditions. At 1345:04, the DHC-8 crew was cleared by the TOWER to taxi to the holding point for RW12. At this point the Lynx was on final and cleared for an autorotation landing for RW30. Following the DHC-8 crew's request, at 1345:54, the ADC issued their departure clearance, "[C/S] after departure a left turnout on track DAWLY climb flight level 1-7-0 and squawk 1-7-3-1." This was correctly read back by the DHC-8 pilot

At 1346:30 the Lynx crew was cleared for, "...take off into the left hand circuit [for RW30]...". The Jet Ranger crew was then instructed, "...either pull away from the circuit the Lynx is joining the left hand downwind shortly again or overfly the runway." The Jet Ranger pilot elected to position onto final for RW30 and overfly the runway and was instructed to report final with a Twin Otter departing ahead. Two pilots transmitted simultaneously at 1347:28 ready for departure; the DHC-8 crew was instructed to hold position whilst a Twin Otter was cleared for take-off on RW30. The Jet Ranger turned onto final approach for RW30 as the Twin Otter departed ahead and the Lynx turned LH downwind for RW30. The ADC's plan was to orbit both helicopters in the downwind position before allowing the DHC-8 to depart from RW12. At 1349:23 the Lynx crew, now late downwind, was instructed to, "...orbit right at the end of the downwind leg", which was acknowledged as, "orbit right [C/S]." After over flying the runway the Jet Ranger pilot requested, "[C/S] to turn left and tight in", but the ADC missed this call and was asked to say again. The Jet Ranger pilot repeated his request to turn downwind, whereupon the ADC responded, "[C/S] approved hold at the..crosswind leg in a left hand or..right hand orbit got a aircraft...orbiting right at the end of the downwind leg," The Jet Ranger pilot replied, "Roger copy looking."

At 1350:16 the DHC-8 crew was instructed to, "..line up runway...1-2." The controller stated that he was satisfied that the two helicopters orbiting in the LH cct to the S would not affect the DHC-8 departing from RW12 to the N and accordingly he cleared the DHC-8 crew for take-off - "[C/S] left turnout clear for take off wind 3-2-0/5." The DHC-8 crew read-back their clearance at 1350:40, "with a left turnout clear for take off [C/S]." At 1351:10, with the DHC-8 rolling from RW12 the Lynx crew, having completed one orbit asked, "[C/S] further right hand orbit downwind?" Endeavouring to expedite the cct, the ADC stated rather than give the Lynx pilot a further RH orbit of 2min, he was asked, "..are you visual with the Dash 8 rolling to climb out 1-2?" The Lynx pilot replied, "Yeah got it visual." TOWER then instructed the Lynx pilot, at 1351:20, "roger then give way to the Dash 8 and report final runway..3-0." The Lynx crew read-back, "give way to the Dash 8 and report final runway 3-0 [C/S]." The controller believed that the Lynx pilot, an experienced instructor, sounded confident and the controller was reassured that the Lynx would position safely to ensure the DHC-8 passed well ahead. At 1351:39, the radar recording shows the Lynx late downwind and beginning a L turn, indicating an altitude of 1900ft, with the DHC-8 passing an altitude of 600ft. The ADC was monitoring the traffic both visually and on the ATM. The controller said that he then became concerned about the position of the Lynx and considered TI was now appropriate. At 1352:00, before the controller was able to pass TI, the DHC-8 pilot transmitted, using an incorrect C/S, ".. request an early tu-left turn due traffic." This was approved by the ADC, who repeated the incorrect C/S, "..that's approved early left turn to approach now 1-3-3-4 bye bye." At this point the radar recording shows the outbound DHC-8 on the centreline indicating 1100ft ALT, with the Lynx indicating 1900ft ALT on L base for RW30, in the DHC-8's 12:30 position at a range of 1.3nm, converging. Then, at 1352:16,

the radar recording shows the DHC-8 commencing a L turn to the E indicating 1500ft ALT, with the Lynx 0.5nm S of the centreline indicating 1800ft ALT at the CPA. It was noted that the DHC-8 pilot's use of the wrong callsign was probably a slip due to the urgency of the transmission and this was repeated by TOWER. The DHC-8 was transferred to the radar frequency immediately after the L turn was approved and before the Lynx had passed abeam. Because the DHC-8 was no longer following noise abatement the ADC considered it important to transfer the flight early so that the APR could deal with the non-standard turn. This was co-ordinated with the APR, the ADC being satisfied at this stage that the Lynx would pass S of the DHC-8.

The ADC said that traffic levels and workload had increased steadily just before the Airprox with a number of vehicle movements on the airfield and across the runway, together with other ac requesting start and taxi. In addition there seemed to have been an issue with a vehicle holding on the taxiway that the controller explained was due to work in progress and had since been resolved. It was noted that the controller made a couple of minor slips in the RT transmission that were corrected, but may have been an indication of the increased workload. The controller stated that he was comfortable and confident with the levels of traffic and whilst he had given some thought to opening GMC, did not consider it necessary at the time

The ADC was asked whether he would have allowed the Lynx to continue in the right hand orbit, had the pilot not mentioned a further orbit and he said that he would have allowed the Lynx to orbit, but when prompted was trying to be helpful and expeditious. Rather than let the Lynx carry out another 2min orbit, the controller had decided to change the plan and was confident that the Lynx would position appropriately. Reflecting on preventing the situation happening in the future, the ADC opined that he would think twice before changing a plan allowing traffic to continue downwind in such circumstances and would probably not use the term 'give-way'.

The ADC was comfortable and confident with the traffic workload and situation. There were no distractions and the controller was able to monitor the cct traffic both visually and on the ATM. There were only 2 helicopters in the visual cct but his workload increased steadily due to ground activity. Nevertheless, the controller considered traffic levels well within his ability to provide an appropriate level of service and did not consider that opening GMC was appropriate at that point. The DHC-8 crew requested a departure from RW12, with RW30 in use. This was approved and accepted practice at Newquay, provided it can be accommodated safely within the prevailing traffic conditions and with only 2 helicopters in the cct this was a reasonable plan. The controller instructed the two helicopter crews to orbit in the visual cct and determined that separation was assured, with the DHC-8 departing safely away from the helicopters and then turning L to the N. At this point the controller did not consider that TI was required, but accepted that if passed, may have increased the crews' situational awareness of the general traffic situation. Once the DHC-8 was rolling from RW12, the Lynx pilot's transmission, "[C/S] *further right hand orbit downwind?*" This prompted the ADC to reassess the traffic situation and resulted in the controller changing his plan. The Lynx crew reported the departing DHC-8 in sight and was instructed to give-way to the DHC-8, then report final. The dynamics of the situation had now changed. The controller had given approval for the Lynx to continue to final approach and give-way to the DHC-8. The controller recognised that passing TI to the DHC-8 was appropriate, but intended to wait until the ac was safely airborne. As the Lynx started to turn onto base-leg the ADC became concerned and was about to issue TI when the DHC-8 crew, having observed the Lynx closing from the R, became concerned about the safety of their ac and requested a L turn. This L turn was immediately approved, but did not conform with the standard noise abatement procedure. The controller, satisfied at this stage that the Lynx would pass to the S of the DHC-8, immediately transferred the DHC-8 to the APR so that he could deal with the non-standard turn. The Lynx passed 0.5nm S of the DHC-8 before positioning onto final approach.

Having established a safe and reasoned plan, the ADC then removed the restriction placed on the Lynx holding downwind. This late change in plan was not sufficient to allow for timely and appropriate TI to be passed to the DHC-8 crew and resulted in a much reduced level of separation. As a consequence the crew of the DHC-8 became concerned about the safety of their ac.

The controller did not fulfil his responsibility for issuing information and instructions to the respective flights in order to achieve a safe, orderly and expeditious flow of air traffic and to assist pilots in preventing collisions between:

- a) aircraft flying in, and in the vicinity of, the ATZ;
- b) aircraft taking-off and landing.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequency, radar video recordings, reports from the air traffic controller involved and reports from the appropriate ATC authority.

The use of the opposite runway for departures when ac are circuiting to the RW in use can cause significant problems and requires additional positive steps by ATC to ensure that all the pilots concerned know what is happening. Here it was evident from ATSI's comprehensive report that the ADC was permitted by local procedures to allow departures from the opposite RW if they could be accommodated safely. Moreover the controller had a sound plan to deal with the two helicopters operating VFR in the visual cct to RW30, whilst still allowing the IFR DHC-8 to depart expeditiously from RW12. By placing the two helicopters in orbits on the downwind leg the ADC effectively removed any potential for a conflict with the DHC-8, until the point that he allowed the Lynx to leave the orbit too early without telling the departing DHC-8 crew what was happening. It was clear to Members that the Lynx crew was entirely cognisant of the presence of the DHC-8 and had kept track of it throughout its take-off and departure. Moreover, the ADC had confirmed this before he instructed the Lynx crew to *"..give way to the Dash 8 and report final...3-0"*, which the Lynx crew read-back. Whilst it was evident from his account that the DHC-8 crew heard some of these exchanges too, no TI was actually transmitted to them about the helicopter turning in towards final for RW30. CAT pilot Members understood why the DHC-8 Captain was concerned especially when a TCAS RA was subsequently triggered. A pilot Member suggested that the Lynx crew should have been more aware of the impact they could have on the departing IFR flight and whilst they were undoubtedly 'giving way', the perceived proximity of their helicopter without prior notification caused the DHC-8 pilot to take evasive action by turning L off the RW heading early. It may be that the DHC-8 Captain had assessed the separation from his TCAS display – he reported the helicopter was only 500m away – whereas the radar recording shows the Lynx at twice that range and no closer than 0.5nm at the CPA. In the Board's view, the VFR Lynx pilot was plainly 'giving way' to the IFR departure but without any visual separation criteria specified between IFR CAT ac and VFR flights, once they have been informed about the other ac, it is the VFR pilot's responsibility to afford appropriate separation. CAT pilot Members stressed that the DHC-8 crew has no option but to obey TCAS RA commands, which would undoubtedly have influenced the Captains views about raising a report, and the importance of affording TCAS equipped ac as wider berth as feasible. The helicopter pilot Member considered the separation here was entirely reasonable. Nevertheless, the Lynx Captain might have been more considerate over his positioning and this Airprox illustrated that allowing your ac's flight vector to sweep through the other ac's projected flight path will routinely result in a TCAS RA.

Notwithstanding the higher workload during this busy stage of the flight at take-off, a helicopter pilot Member thought that the two-pilot DHC-8 crew should have had sufficient SA from the RT exchange between TOWER and the Lynx crew to realise what was happening. Nevertheless, CAT pilot Members agreed that the key was the absence of TI from the ADC to the DHC-8 crew telling them that the Lynx crew had their ac in sight throughout and was remaining clear. Some Members suggested that it would have been preferable if TOWER had given TI before the take-off clearance was issued, then the DHC-8 crew could have made up their own mind before they initiated their take-off roll. Although it was plain to the Members that the ADC was trying to expedite matters with the best of intentions, in the absence of TI the DHC-8 crew was concerned by the proximity of the Super Lynx, which the Board concluded was the Cause of this Airprox. Nevertheless, with the separation evinced by the radar recording it was clear that the Lynx crew was indeed giving-way to the DHC-8

and, as they had the airliner insight throughout, the Members agreed unanimously that no Risk of a collision had existed in these circumstances.

**PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: In the absence of TI, the DHC-8 crew was concerned by the proximity of the Super Lynx.

Degree of Risk: C.