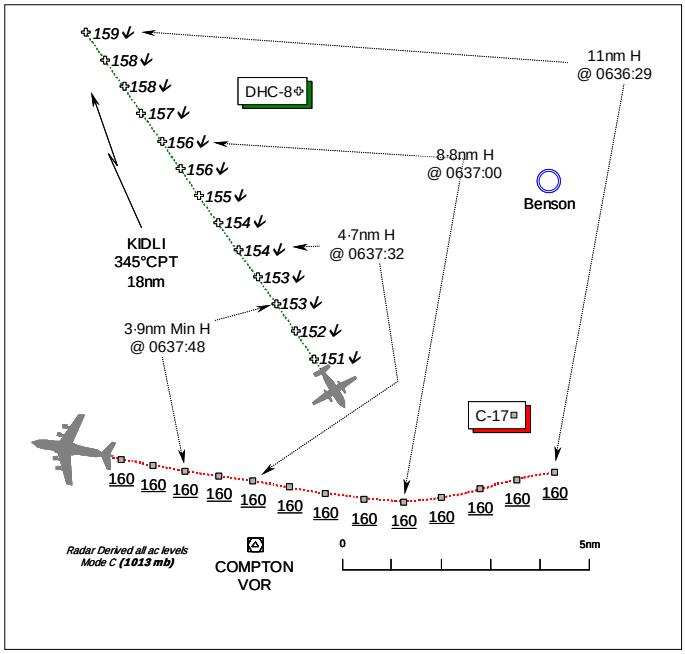
AIRPROX REPORT No 2010028

Date/Time: 2 Apr 2010 0637Z BH Friday

Position: 5133N 00114W (3½nm N of COMPTON VOR)

Airspace: N859 (*Class:* A)

	Reporting Ac	*Reported Ac*
Type:	DHC-8 Q400	C-17A
Operator:	CAT	HQ Air (Ops)
Alt/FL:	↓FL150	FL160
Weather:	NK CLBL	VMC CLAC
Visibility:	25km	40km
Reported Separation:	600ft V/3nm H	700ft V/3½nm H
Recorded Separation:	700ft V @ 3·9nm Min H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE de HAVILLAND DHC-8 Q400 PILOT (DHC-8) reports he was en-route from Leeds Bradford Airport to Gatwick IFR and in receipt of a RCS from LTCC on 133·175 MHz [TC MIDLANDS]. The assigned squawk was selected with Mode C; Mode S is fitted. Southbound at 250kt, they were cleared by London to descend to FL150. Descending clear above cloud, in between layers with an in-flight visibility of 25km, as they approached their assigned level a large dark-coloured ac with a T-tail was seen 3-4nm away on the nose crossing from L to R. TCAS displayed the other ac around 600ft above and about 3nm away. A TA caution was enunciated 'traffic traffic' and they positively identified the cause as the other ac they had spotted ahead - the C-17 - in level flight. An RA was not indicated and no avoiding action was taken. He assessed the risk as 'low' as they were flying in VMC, but added that in IMC it would be, potentially, more risky.

He reported the proximate traffic to London CONTROL, the controller advised that he was unaware of the identity of the other ac and would report the matter to his Watch Supervisor. No further action was taken by the DHC-8 crew mid-flight, but on arrival at Gatwick they identified the ac as a C-17 Globemaster and passed this information along to LTC with the exact occurrence time and level etc.

Apparently, their clearance should have been to 'Descend to FL150 level by KIDLI', but they were not given the clearance 'conditionally', they were simply 'cleared to FL150'.

THE BOEING C-17A GLOBEMASTER III (C-17) PILOT reports he was inbound to Brize Norton under IFR and in receipt of a RCS from London CONTROL [LACC Sector 23]. The assigned squawk was selected with Mode C; Mode S and TCAS are fitted.

Heading 270°, in the vicinity of COMPTON VOR at 250kt, flying level at FL160 in a standard stepped descent into Brize Norton, TCAS enunciated a TA. The ac believed to be in conflict – the DHC-8 - was acquired visually and on TCAS from about 4nm away. He estimated the minimum separation to be about 3½nm away to starboard, 700ft below their level and descending; therefore, the Risk of collision was 'low'. TCAS did not enunciate an RA and no avoiding action was taken.

The ac has a grey colour-scheme but the HISLs were on.

THE OUTGOING LTC TC MIDLANDS (COWLEY & WELIN) SECTOR CONTROLLER (TC MID) reports that he was working the bandboxed TC MIDLANDS Sector with 5-6 Gatwick inbounds which

he had sped up for TC SW. The DHC-8 was cleared down to FL150 at a speed of 250kt, but he had forgotten to instruct the crew to be level at FL150 by KIDLI. About 6min after he issued the descent instruction to the DHC-8 crew another controller took-over the sector, but he did not see that the DHC-8 was a little high when he handed the position over. He was not aware that the DHC-8 was high until he saw the replay of the radar recording.

THE LAC SECTOR 23 TACTICAL CONTROLLER (SEC23 TAC) reports that the C-17 called on frequency at FL160 as per the TC Capital – SEC23 Standing agreement. A short while later the LACC Multi Radar Tracking System SSR label for the DHC-8 turned green and was displayed as a foreground track descending through FL154, about 6nm N of the C-17. The respective tracks and Mode C levels of the two ac indicated that no risk of a collision existed and, although close, he was content that the DHC-8 would pass astern of the C-17 with 5nm horizontal separation. The S23 PLANNER, using the range & bearing tool, thought the minimum horizontal separation was 5nm. Neither TI nor avoiding action was passed to the C-17 crew. A short while later he queried the proximity and late descent of the DHC-8 with the TC SW CO-ORDINATOR, who explained it was in fact a TC MIDLANDS responsibility. Later, he was informed the minimum separation was 800ft vertically and 4nm horizontally.

ATSI reports the incident occurred on a Bank Holiday Friday; the controller had been in position since 0600 and was due to be relieved at 0630.

The LTC Manual of Air Traffic Services Part 2 (edition 3.09) page MID – 8 states that the Standing Agreement for Gatwick inbounds from the COWLY sector to the WILLO sector is FL150 level KIDLI. Standing Agreements are part of the requirement for the silent transfer of traffic from one sector to another (without the need for individual co-ordination). In this case, the Standing Agreement also serves to ensure that ac from the COWLY Sector do not penetrate LTC COMPTON airspace.

The DHC-8 crew called the TC Midlands Sector on 121·025MHz at 0625 maintaining FL190 on a heading of 160°. TC MID acknowledged the call. The controller was operating with the COWLY and WELIN Sectors bandboxed onto a single position. The sectors were reported as quiet for a Friday, hence the bandboxed configuration. Under normal circumstances, the sectors would usually be split. The controller reported being comfortable with the traffic load on the combined sectors and did not believe that the bandboxed configuration was a factor in the incident.

At 0627 the DHC-8 crew was instructed to fly a speed of 250kt. This was to allow the TC MID controller to deliver a stream of Gatwick inbounds to the next sector, WILLO, in an orderly manner. At 0630 the TC MID controller instructed the DHC-8 to '*descend now flight level 1-5-0*'; this was read-back correctly by the pilot. The Mode S Selected Flight Level [SFL] of the DHC-8 changed to FL150 at 0630:16, with 27nm to run to KIDLI and its subsequent ROD was observed on the radar recording as about 500ft/min.

TC MID reported that in order to meet the requirements of the Standing Agreement for Gatwick inbounds, it was usual to issue a descent clearance that included the instruction 'level by KIDLI'. However, experience and knowledge of ac performance was equally used in assessing whether or not, at the time of issuing the clearance an ac would be level at FL150 by KIDLI. TC MID believed that, in this instance, not using the level restriction in the clearance was uncharacteristic. Also, the controller reported that it was normal practice for TC MID controllers to annotate the FPS with 'L' when a level restriction had been passed in the clearance. As the controller had omitted to use the level restriction there was no 'L' on the FPS.

At 0634 a change of sector controller took place. The position handover was reported as taking approximately 1-2min and followed the standard format prescribed for LTC controllers. Traffic was handed over using a 'strips to radar' method. Neither the outgoing nor the incoming controller observed that the DHC-8 was high in relation to its position - which at 0634 was 5nm N of KIDLI passing FL171 in the descent. As the outgoing controller had not assimilated the DHC-8's slow RoD, this ac performance information could not be passed to the incoming controller.

At 0635 the incoming sector controller transferred the DHC-8 to the WILLO Sector, but before this occurred he did not assimilate the DHC-8's level in relation to its position; the flight passed abeam KIDLI at 0635:20 descending through FL165. The requirement of the COWLY to WILLO Standing Agreement [to be level at FL150 by KIDLI] had therefore not been met.

At 0637, as the DHC-8 passed FL156, the C-17 crossed the DHC-8's 12 o'clock from L - R at a range of 8·8nm maintaining FL160. The C-17 was under the control of LAC Sector 23, inbound to Brize Norton; however, the position of the C-17 placed it in the previously worked sector LTC Compton's airspace. It was also noted that the DHC-8 was actually within the area of responsibility of LTC NORTHWEST; as part of the standing agreement between the COWLY and WILLO sectors, Gatwick inbounds transit NORTHWEST's airspace silently.

[UKAB Note (1): As the C-17 drew R into the DHC-8's 1 to 4o'clock, the horizontal distance between the two ac reduced to less than the required separation of 5nm/1000ft [for LAC Sectors]. The CPA between the ac occurred at 0637:48 – 3·9nm/700ft. The loss of separation lasted for 37sec.]

After the loss of separation, the pilot of the DHC-8 reported the Airprox to the WILLO controller at 0639:20, to whom the C-17 was 'unknown' traffic. The proximity of the two ac was also noted by the LAC S23 controller who, due to the positions and tracks of the two ac, deemed avoiding action unnecessary, as there was no risk of collision.

This Airprox is attributable to both the outgoing and incoming LTC Midlands controllers. A number of causal factors, rather than one individual factor, culminated in the DHC-8 being incorrectly transferred from the TC MID Sector. Both controllers were responsible for ensuring that the DHC-8 exited the Sector in accordance with the terms of the Standing Agreement and to issue instructions to achieve this. The outgoing TC MID controller issued the DHC-8 with descent from FL190 to FL150, in the belief and expectation that with 27nm to run the ac would be level before KIDLI. Experience and knowledge are valid in assessing whether or not an ac will, on the basis of controller's instructions, achieve the required level. After the descent instruction was issued, the TC MID Controller did not notice the DHC-8's slow rate of descent. Had he done so he would have been able to instruct the aircraft to be level by KIDLI.

LTC has procedures in place to ensure a thorough handover of operational sectors between controllers, including procedures for identifying and handing over sector traffic. Both the outgoing and incoming TC MID controllers, when conducting the handover of the operating position, did not assimilate that the DHC-8 was too high in relation to its position from KIDLI.

The incoming TC MID controller then mistakenly transferred the DHC-8 to the WILLO Sector without affecting co-ordination with the receiving and adjacent sectors, as the flight was not in compliance with the Standing Agreement requirements for a 'silent' radar handover.

ATSI recommended that LTC undertake to review TC MIDLANDs controllers' use of appropriate instructions to ensure that ac subject to the COWLY – WILLO Standing Agreement are achieving FL150 by KIDLI.

HQ AIR (OPS) has nothing to add and concurs with the ATSI assessment.

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 together with reports from some of the controllers involved and the appropriate ATC and operating authorities.

It was plain that the descent instruction issued by the outgoing TC MID controller to the DHC-8 crew did not specify that they were required to be level at FL150 by KIDLI. A CAT pilot Member advised the Board that without any other amplifying instructions, and in accordance with company policy, the

crew would establish a RoD commensurate with national procedures that would achieve the most economical fuel consumption. This is what appeared to have happened.

With the aim of appraising CAT crews of what levels might normally be established by ATC, a CAT Member suggested that the levels associated with the Standing Agreements might be shown on the Standard Instrument Arrival (STAR) charts for London Gatwick, as is the case for the STAR charts produced by his company's supplier for another destination. The NATS Ltd Advisor was not averse to such a suggestion but another CAT pilot Member did not agree. The levels established are not shown in the AIP and might not always be used as they can be changed tactically. Whilst it might not be commonplace, there was considerable potential for controllers to issue tactical levels required by the extant traffic situation, having co-ordinated with other Sectors where appropriate. Crews might therefore become confused if they were instructed to do something different to that printed on the STAR without further explanation – increasing the potential for error. Another CAT pilot Member believed that the level selection was purely an ATC matter and should be issued by the controller as necessary. The suggestion of promulgating these Standing Agreement levels did not, therefore, meet with widespread approval and the overwhelming view of the Members was that additional information might clutter the chart to the detriment of clarity. Consequently, the suggestion was not taken forward.

It was evident that neither the outgoing nor the incoming TC MID controllers detected that the DHC-8 was too high as the flight passed KIDLI, so another opportunity to forestall this Airprox was lost. Thus the DHC-8 was not separated from the adjacent LAC and LTC Sectors traffic by the stipulated minima – 1000ft vertically - against the C-17 under the control of LAC S23, which compliance with the COWLY – WILLO Standing Agreement would have ensured. Moreover, when the incoming TC MID controller transferred the DHC-8 to WILLO and it was above the Standing Agreement level, a radar hand-over should have been effected. The Board agreed unanimously that the Cause of this Airprox was that the descent instruction issued by the outgoing TC MID controller did not require the DHC-8 to be level at FL150 by KIDLI. Furthermore, the incoming TC MID controller did not comply with the COWLY – WILLO Standing Agreement when the DHC-8 was transferred. Although a loss of stipulated separation occurred it was evident that TCAS had detected the other ac, the DHC-8 crew had seen the C-17 at range and was able to take further action if need be. Moreover at the distances involved here the Members agreed unanimously that no risk of a collision had existed.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: i) The descent instruction issued by the outgoing TC MID controller did not require the DHC-8 to be level at FL150 by KIDLI.

ii) The incoming TC MID controller did not comply with the COWLY – WILLO Standing Agreement when the DHC-8 was transferred.

Degree of Risk: C.