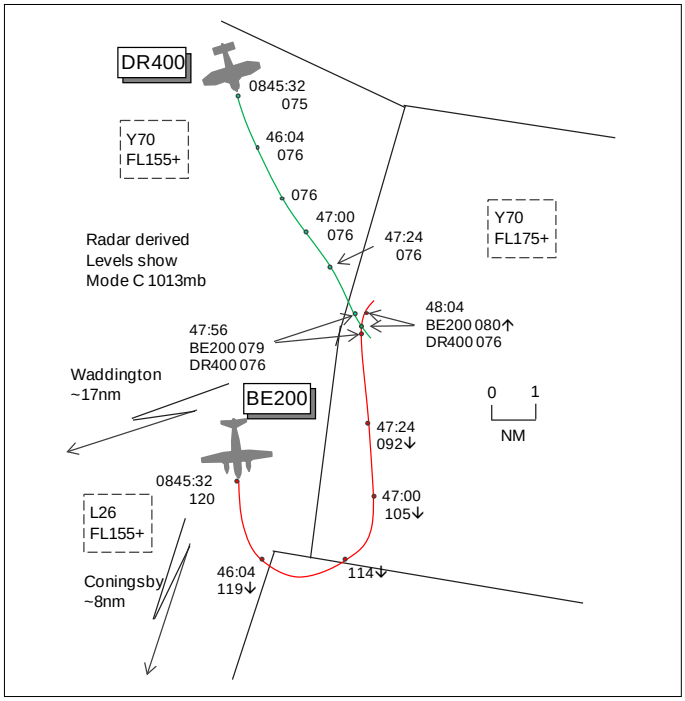
AIRPROX REPORT No 2010140

Date/Time: 21 Sep 2010 0848Z

Position: 5317N 00002E (14nm NE Coningsby)

Airspace:	LFIR	(*Class: G*)
	Reporting Ac	*Reporting Ac*
Type:	DR400	BE200
Operator:	Civ Pte	HQ AIR (TRG)
Alt/FL:	FL75	FL85↓
Weather:	VMC CLOC	VMC CLOC
Visibility:	>10km	15km
Reported Separation:	400ft V/50m H	NR V/2-300m H
Recorded Separation:	300ft V/0·1nm H	



BOTH PILOTS FILED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE DR400 PILOT reports en-route from a private site in N Yorkshire to Beccles, VFR and in receipt of a TS from Coningsby Zone squawking an assigned code with Modes S and C. The visibility was >10km in VMC and the ac was coloured white/red with strobe lights switched on. Over the Wash after passing OTBED heading 134° at 130kt and FL75 the controller advised, "Contact 12 o'clock heading N 2000ft above"; he replied, "Looking DR400 c/s." Seconds later the profile of a medium-size twin-engine propeller-driven ac appeared descending and heading directly towards him. In the same instance the twin swerved to its starboard and reduced its ROD, passing 50m clear and 400ft above. He took no avoiding action as it all happened very quickly and it was apparent the other ac's avoiding action would be successful. Just after the twin passed the controller said in an anxious voice, "Contact now passing 400ft O/H". He assessed the risk as high.

THE BE200 PILOT reports flying a GH mutual solo sortie to the N/NE of Coningsby and in receipt of a BS from Coningsby Approach on frequency 282·725MHz, squawking 2641 with Modes S and C. The visibility was 15km in VMC and the ac was coloured white/blue with nav, beacon, strobe and recognition lights all switched on. Heading 005° at 200kt and descending through FL85 for a visual recovery, TCAS annunciated "traffic", which they identified as being behind and below. He then looked up to see a twin-engine ac, he thought, in his 12 o'clock 500-600m away on a converging heading and closing rapidly. He took evasive action, selecting full power and turning up and to the R, the other ac passing 200-300m clear to his L. As full power was being selected TCAS generated a "climb, climb" RA and indicated a 2000fpm ROC on the VSI. They were soon clear of conflict and levelled-off. Approach called, "Traffic similar level 12 o'clock" which they took to be a delayed call for the previous conflict. After a moment to gather their thoughts and confirm that the area was clear they continued their recovery to Coningsby. He assessed the risk as high.

HQ 1GP BM SM reports that this Airprox occurred between a BE200 King Air, flown by a solo student crew, in receipt of a BS from Coningsby (CGY) Approach (APP) and a DR400 under the control of CGY Zone (ZON), in receipt of a TS. Unfortunately, the Airprox was not reported until sometime after the event; consequently, the controllers had no recollection of the event and their narrative reports have suffered accordingly.

Although the BE200 pilot reported that the conflicting ac was twin-engined, investigation has proved that it was a Robin DR400. Furthermore, whilst the crew reported that the TCAS display presented the DR400 as approaching from behind and below, the DR400 was in front and below. No engineering investigation seems to have been undertaken to confirm the serviceability state of the TCAS equipment.

The DR400 flight free-called ZON at 0843:36, level at FL75 en-route to Beccles and was identified and placed under a TS at 0844:23. The BE200 flight free-called APP at 0844:38, seeking a visual recovery and was identified at 0845:34. Although a type of service was not agreed between the BE200 and APP, the BE200 stated that they required a BS. At this point, the BE200 is at FL120 tracking approximately 170° with the DR400 approximately 9nm N, tracking approximately 165°.

At 0846:05 the BE200 flight commenced a L turn with APP instructing them to descend to 2000ft QFE at 0846:07. At 0847:01 ZON passed TI to the DR400 on the BE200, *"DR400 c/s traffic twelve o'clock five miles tracking North indicating two thousand five hundred feet above"*; the DR400 pilot replied, *"Looking DR400 c/s".* At 0847:07 the BE200 is indicating FL097 in a descent (SSR Mode C) and appears to roll out of the turn onto a conflicting track (approximately 355°) with the DR400. Simultaneously, APP passed the BE200 accurate TI on the DR400, *"BE200 c/s roger own navigation traffic North five miles tracking South East at Flight Level seven five"*. The BE200 pilot replied *"Looking BE200 c/s"*.

[UKAB Note (1): Immediately after this transmission APP pre-noted the BE200 with CGY Tower and then informed Waddington of the BE200's intentions, as the flight was previously booked on a PD for ccts but Waddington were unable to accept the ac. The last telephone call terminated just after 0847:50.]

At 0847:52, APP updated the TI to the BE200 on the DR400, *"BE200 c/s previously reported traffic twelve o'clock one mile opposite direction at FL75."* The BE200 pilot replied, *"Er BE200 c/s is visual and er manoeuvring away"*. At 0847:56, ZON updated the TI to the DR400 on the BE200, *"DR400 c/s previously called traffic now twelve o'clock one mile opposite direction, indicating four hundred feet above."* At this point on the radar replay 0·5nm separation existed, the DR400 at FL076 and the BE200 at FL079. The DR400 pilot replied, *"Visual DR400 c/s that was close"*.

[UKAB Note (2): The CPA occurs between radar sweeps for the next sweep at 0848:04 shows the ac having passed, the BE200 now in the DR400's 7 o'clock range 0·3nm, the DR400 still indicating FL076 whilst the BE200 is seen in a R turn and climbing through FL080, confirming the pilot's reported avoiding action. It is estimated the ac passed within 0·1nm of each other.]

CAP 774 states that:

a. Under a TS, 'the controller shall pass traffic information on relevant traffic, and shall update the traffic information if it continues to constitute a definite hazard.'

b. Under a BS, 'if a controller considers that a definite risk of collision exists, a warning may be issued to the pilot.'

c. For both a TS and a DS, 'whether traffic information has been passed or not, a pilot is expected to discharge his collision avoidance responsibility without assistance from the controller.'

JSP 552 245.105.2 states that a TCAS TA will be generated between 20-45sec from CPA, with the time varying due to the host ac's altitude.

The crews of both ac were initially provided with accurate and timely TI on each other iaw CAP774. Typically, the BE200 will descend with a 10° nose down attitude which will have increased the visibility of the white upper body of the ac to the DR400 pilot. Furthermore, the paint scheme of the DR400 viewed from above appears predominantly white, albeit with a band of red on the leading

edge. This, combined with the constant relative bearing between the ac and the possible presence of haze, will have made both of the ac difficult to spot. Moreover, whilst it is impossible to create a timeline of events within the BE200 cockpit, it is likely that the TCAS TA event will have interrupted the crew's workflow and, as the pilot's report states, directed their attention inside the cockpit. It is reasonable to argue that this will have affected the crew's visual scan and delayed their visual acquisition of the DR400, especially given the subsequent requirement to refocus outside the cockpit after viewing the TCAS display.

From an ATM perspective, given the closure speeds of the ac, the updates of TI provided by APP and ZON, whilst given, were too late to have enabled the pilots to take action to prevent the occurrence. APP's workload is unrecorded, but appears low based on the content of the transcript; however, APP was involved in a series of other tasks throughout the time that the BE200 was on frequency, which may have distracted them from passing an earlier update. That notwithstanding, the BE200 was in receipt of a BS and had been provided with TI on the DR400. ZON's workload is unknown, but in the period between ZON passing TI to the DR400 at 0847:01 and the update at 0847:56, they were involved in a series of transmissions with 2 other ac operating around 15nm S of the CPA. Not only will the geographical split between these ac have served to divide ZON's attention, but the RT during that period is constant with no gaps until the TI is updated.

HQ AIR (TRG) comments that the ac were both provided with accurate and timely TI but elected not to act upon it or did not sufficiently register the detail they were passed. The reasons for this are not clear but both had the opportunity to manoeuvre to avoid the impending conflict and the BE200 did so only on receiving a TCAS RA. It is also not clear why the reported TCAS TA was apparently very late and in error. However, with the available TI, the TCAS TA was actually superfluous. It is also noted that the equipment was not snagged and that there is no trend of similar occurrences to indicate a problem with the TCAS. The BE200 formal pre-sortie brief stresses the limitations of the TCAS in respect of it only detecting transponding ac and hence the continuing need for a robust lookout scan. It is disappointing that this incident was permitted to proceed to a point where a well flown TCAS RA response was required.

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.

Notwithstanding that both ac were receiving a service from Coningsby, as the Airprox occurred in Class G airspace, both crews were responsible for maintaining their own separation from other traffic through see and avoid. The BE200 flight had called APP and, having requested a BS for a visual recovery, the crew received TI, more than is required under a BS, on the DR400 at FL75 when at 5nm range. APP then coordinated with Tower and Waddington on the telephone before passing updated TI as the ac approached the CPA. The DR400 flight working Zone had also received TI at range 5nm but this was incomplete as there was no mention that the BE200 was descending, which would have improved the DR400 pilot's SA. This TI was updated as the BE200 still constituted a hazard, however this only occurred as the ac were about to cross owing to Zone being busy with other traffic in the intervening period. Members could not resolve the apparent TCAS discrepancy where the TA was late and indicating an erroneous relative bearing. However, the accurate TI passed by ATC was either not assimilated by the BE200 crew or they elected not to act upon it. Also the TI given to the DR400 may have misled the pilot into believing that the BE200 would be passing 2500ft above. In the end, both crews saw each other late and Members agreed that this had caused the Airprox.

By the time the DR400 pilot saw the BE200 it was too late for him to take avoiding action, but he saw the BE200 manoeuvre away to his L and stop its descent 400ft above. Fortunately the BE200 crew had seen the DR400 slightly earlier, in enough time to take prompt and robust avoiding action as

TCAS generated a mutual RA ‘climb’. These actions were judged by the Board to have removed the actual risk of collision; however, safety had not been assured during this encounter.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Late sightings by the pilots of both ac.

Degree of Risk: B.