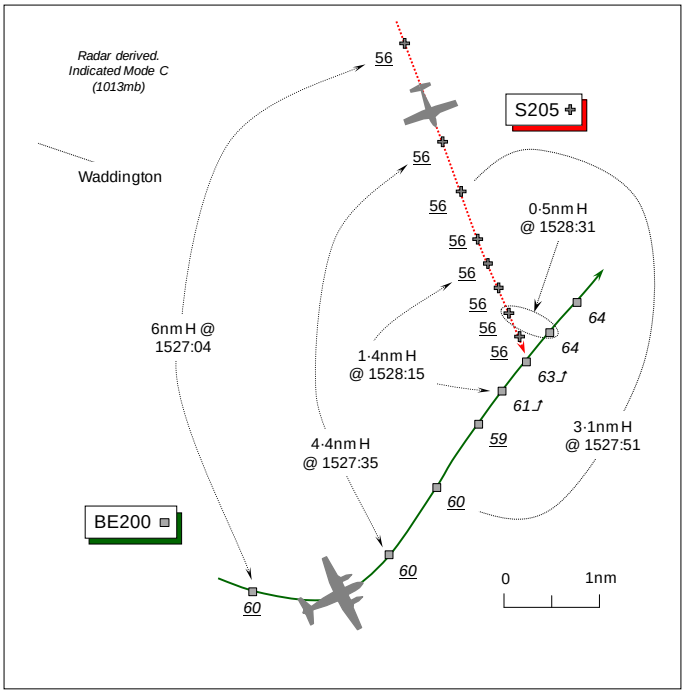
AIRPROX REPORT No 2011124

Date/Time: 15 Sep 2011 1528Z

Position: 5308N 00021W (6nm ESE Waddington - elev 231ft)

Airspace: Lincolnshire AIAA (*Class:* G)

	Reporting Ac	*Reported Ac*
Type:	BE200 King Air	Marchetti S205/R
Operator:	HQ Air (Trg)	Civ Pte
Alt/FL:	FL60	FL55
Weather:	VMC CLAC	VMC CLAC
Visibility:	50km	>10km
Reported Separation:	300ft V/½nm H	>500ft V/½nm H
Recorded Separation:	300ft V/0·5nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE BE200 KING AIR PILOT, a QFI, reports he had departed from Cranwell on a conversion training sortie and was inbound to Waddington under a TS from Waddington APPROACH on 250·85MHz for an instrument approach for training. The assigned squawk was selected with Modes C and S; TCAS is fitted. The ac has a blue/white colour-scheme and the HISLs were on.

After the radar pick-up, heading 040° at a position about 6nm SSE of Waddington A/D, VMC in a level cruise at FL60 at 170kt, APP reported a contact in their 10 o'clock at a range of 5nm 300ft below them. They could not see the ac but noted its position on the TCAS display. The cloud tops appeared to be about 1000ft to 1500ft below them. Then he thought APP instructed them to turn 20° L onto a heading of 020° that would take them closer to the previously mentioned traffic. They were still unable to see the other ac but then TCAS enunciated a TA. Very quickly afterwards TCAS enunciated an RA, demanding a climb at 6000ft/min. Full power was selected and the climb initiated; APP was advised of the TCAS RA and that they were climbing. Once clear of conflict, they descended back to FL60.

From the ac's TCAS display, he estimated the minimum separation was ½nm horizontally and 300ft vertically with a 'medium' Risk of collision. An Airprox was reported to Waddington APP on RT.

THE SIAI MARCHETTI S205 20/R PILOT reports he had departed from Milfield glider launch site and was in transit to Crowland glider launch site under VFR whilst in receipt of a BS from Waddington LARS (ZONE) on 127·35MHz. The assigned squawk was selected with Mode C on. The HISLs were on and the ac has a white/green colour-scheme.

Southbound at 120kt in a level cruise at FL55 in clear air, the low-wing twin was spotted at 2 o'clock about 2nm away, more than 500ft above them, as it crossed from R - L ahead; no avoiding action was required.

He did not really see a reason to report this Airprox as the crew of the other ac had them on their TCAS and he had sighted the twin visually. He commented that he has always found Waddington ATC to be very helpful and they provide a good service.

THE WADDINGTON APPROACH CONTROLLER (APP) reports that the BE200 crew free-called APP at FL60. After receiving initial details he called TI on traffic – the SM205 - 4nm N of the BE200 tracking S 400ft below. After validating the BE200's Mode A and placing the flight under a TS, he called the traffic again, now 3nm to the N, tracking S, still indicating 400ft below on Mode C. At this point the BE200 pilot reported climbing due to a TCAS avoid.

BM SAFETY MANAGEMENT reports that a transcript of the APP RT frequency was available for his the investigation but a report and transcript for ZONE were not submitted by the unit, whose investigation states that due to the medium to high workload of the controller, no TI was passed to the S205 about the BE200.

The BE200 was on recovery to Waddington in receipt of a TS from Waddington APP; the Marchetti S205 pilot was operating VFR in receipt of a BS from Waddington ZONE (LARS). At 1527:06, the BE200 crew called APP for recovery 5.5nm SE of Waddington, tracking 115° at FL60, *"Waddington Approach request radar recovery with information kilo".* The S205 was 4.8nm ENE of Waddington, tracking 160° at FL56. At 1527:11, the BE200 commenced a L turn, rolling out onto a heading of 040° at 1527:29. Within an initial exchange of RT calls the BE200 pilot stated, *"..simulated asymmetric request radar pick up for ILS..".* When issued a squawk of A3616 and asked what type of ATS was required the BE200 pilot replied at 1527:30, *"request traffic service heading 0-4-0 flight level 6-0"*. Before APP formally identified the BE200, at 1527:37, the controller passed TI to the crew about the S205 stating, "*traffic believed to be you has traffic north 4 miles, southbound last indicated 400 feet below*." The BE200 crew did not acknowledge this TI but stated in reply that they were, "*on your 150 turn 11 miles*." On radar the BE200 is WAD 130° - 6 nm. At 1527:49, APP replied stating that the BE200 was identified, applied a TS and updated the TI on the S205, "*previously reported traffic north 3 miles southbound 4 hundred feet below*." This TI was acknowledged by the BE200 crew, stating that they were, "*looking*." At 1528:01, the BE200's SSR Mode C indicates FL059, reducing the indicated vertical separation between the BE200 and the S205 to 300ft before the tracks cross. The next transmission on the freq was at 1528:12 when the BE200 crew advised APP, "*climbing TCAS avoid*." The CPA is shown at 1528:31, after the BE200 crew's response to the TCAS RA had resolved the confliction, with 0.5nm horizontal separation and 800ft vertical separation indicated on Mode C. The BE200 crew reported clear of conflict and, *"..happy to descend now to 6-0"* at 1528:39

In his written report the S205 pilot states being visual with the BE200 in his 2 o'clock at a range of about 2nm – equating to about 1528:05 on the radar recording – and estimated minimum separation as at least 500ft vertical and 0.5nm horizontally. The BE200 crew did not see the S205, although they 'noted its position on TCAS' and estimated minimum separation as 300ft vertically and 0.5nm horizontally.

The BE200 crew report that APP issued a vector turning the ac left 20° onto a heading of 020° towards 'the previously mentioned contact'. However, this turn was issued at 1529:01, after the Airprox and the crew had reported that they were clear of confliction having followed the TCAS RA so APP did not turn the BE200 into conflict with the S205.

From an ATM perspective, APP provided the BE200 crew with accurate TI. Whilst the BE200 crew was unable to acquire the S205 visually, the remaining safety barriers – TCAS and the S205's ability to 'see and avoid' – operated effectively to resolve this confliction in Class G airspace.

HQ AIR (TRG) comments that both ac had good information about each other, one visually and the other from accurate TI and TCAS information. However, no action was taken by either party until prompted by TCAS. It should have been apparent to the BE200 crew that a TCAS RA was imminent and would have had to have been followed so it may have been prudent to have taken steps to avoid the RA being triggered. In the event, the fact that the S205 pilot, who was required to give way, reports being visual from 2nm suggests that there was no risk of collision.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, a transcript of the APP RT frequency, radar video recordings, a report from the APP controller and reports from the appropriate ATC and operating authorities.

The Board was dismayed that no report had been provided by the Waddington ZONE controller (LARS) who was providing a BS to the B205 pilot, and that the ATSU had not impounded the ZONE RT recording so no transcript was available either. The BM Safety Management Advisor agreed a report and transcript should have been provided. The Board was concerned that aspects of the ATS provided to the B205 pilot were not able to be scrutinised by Members to substantiate whether it had a bearing on this Airprox. Whilst there was no reason to doubt the veracity of the Unit's assertion that ZONE did not provide a warning about the presence of the BE200 to the B205 pilot because of a reported 'medium to high' workload, there was no means of verifying this view independently. Indeed an experienced controller Member raised a point on aspects of the ATS provided by Waddington ATC that might have been resolved with the benefit of a report from ZONE or a landline transcript; viz, whether any liaison had been effected between APP and ZONE, or whether APP was expecting to fulfil his responsibilities under ATSOCAS by simply issuing TI to the BE200 crew. The Member was concerned that ATSOCAS was being applied too rigidly and enquired if any attempt had been made to co-ordinate or liaise between the two controllers in an effort to forestall this occurrence, both ac being under the control of the same ATSU. No formal co-ordination had been attempted the Board was told, but it was not clear if APP, who was only working the BE200, had liaised with ZONE who was apparently quite busy. Military controller Members opined that APP had fully discharged his responsibilities for the provision of a TS under ATSOCAS and the potential for criticism as a result of 'over control', had he done more, was discussed. Whilst the Unit said no TI was given by ZONE because of the controller's workload, ZONE could have proffered a warning to the S205 pilot under a BS if ZONE had considered there was a risk of a collision. None was alluded to in the S205 pilot's narrative, but a warning might have been prudent when the ac were only 300ft apart. However, the S205 pilot says he spotted the BE200 at a range of 2nm away at 2 o'clock, but that did not quite gel with the radar recording as the BE200 was a lot further away when it was in his 2o'clock. Nevertheless, the S205 pilot flying VFR, as recommended at the correct quadrantal, was evidently unconcerned as the BE200 crossed ahead and above – climbing in response to the TCAS RA– hence he took no action to avoid it himself. However, this Airprox illustrated that although pilots might consider separation to be satisfactory, there was still potential to trigger RAs in TCAS-equipped ac at these distances. Furthermore, the BE200's momentary descent to an indicated FL59 whilst crossing ahead of the S205 would also have been a factor.

As it was, APP was in the process of identifying the BE200 and establishing the crew's requirements when the conflict arose. It was unfortunate the BE200 crew, flying IFR, were not at the correct quadrantal level when they steadied on their new heading; conversely, it is also fortunate that they did not descend to FL50, which could also have precipitated an RA. Controller Members recognised that APP had shrewdly issued initial TI about the S205 quite soon, about 30 sec after the crew called and moments after the crew steadied on their own selected heading of 040°. Indeed the Board recognised that no vectors had been issued by APP during the period before or during the occurrence when the crew were under their own navigation. Therefore, the BE200 pilot was mistaken in his impression that APP had instructed them to turn L into closer proximity with the S205. Once APP had agreed to provide the TS requested by the BE200 crew, where plainly they remained responsible for their own separation, another transmission of TI was immediately issued when the S205 was about 4nm away. Members were somewhat concerned that the BE200 crew had not made better use of this TI and noted the Command's comment that the BE200 crew did not attempt a manoeuvre that might have forestalled the RA. Once the RA was triggered the crew was duty-bound to follow the demanded CLIMB RA which increased the vertical separation successfully to 800ft as the BE200 crossed ahead of the S205 at the point of minimum range. This, coupled with the S205 pilot's earlier visual sighting prevented a serious situation from developing. In assessing the Cause, the Board was mindful that in Class G airspace there are no stipulated separation criteria. Notwithstanding that the BE200 crew was required to respond to the TCAS RA, since the S205 pilot

was visual throughout, Members assessed the encounter as a sighting report (TCAS). Whilst the criteria for reporting the Airprox had been met, the BE200 pilot would be reassured to learn that APP had applied the ATS requested and in the Board's view, the investigation had revealed that normal safety standards and parameters were not contravened.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Sighting Report (TCAS).

Degree of Risk: E.