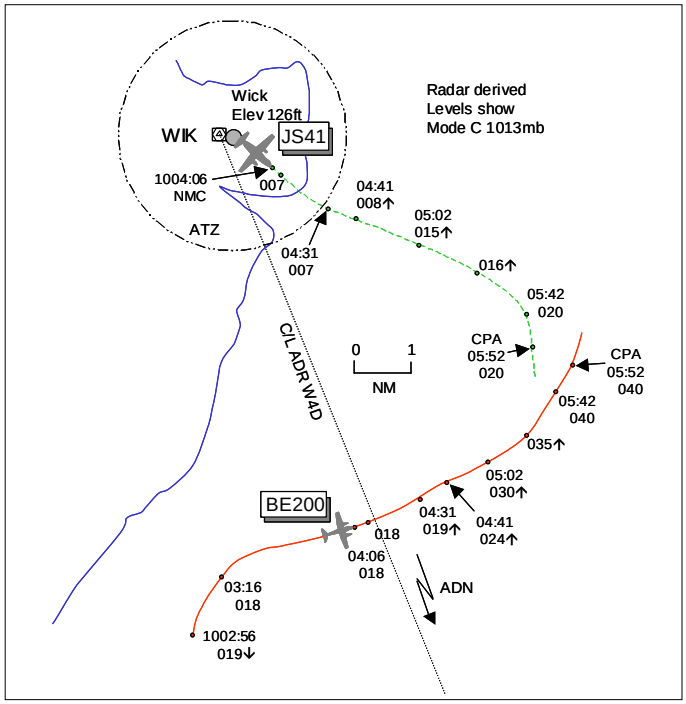
AIRPROX REPORT No 2010148

Date/Time:	29 Sep 2010 1006Z	
Position:	5824N 00255W (7nm SE Wick - elev 126ft)	
Airspace:	SFIR	(*Class: G*)
	Reporting Ac	*Reported Ac*
Type:	JS41	BE200
Operator:	CAT	Civ Comm
Alt/FL:	↑3000ft (QNH 1012mb)	1800ft (QNH 1012mb)
Weather:	IMC KLWD	IMC KLWD
Visibility:	4000m	NR
Reported Separation:	1200ft V/5nm H	1800ft V/5nm H
Recorded Separation:	2000ft V/0·7nm H	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE JS41 PILOT reports outbound from WICK IFR and in receipt of a PS from Wick squawking an assigned code with Modes S and C. On line-up RW13 they were given a local restriction on departure to climb and maintain altitude 3000ft owing to a BE200 inbound from the SE, which they believed had been cleared for the RW13 procedure maintaining 4000ft. On rotation he, the Capt PNF, noticed a TCAS contact 6-7nm ahead 1700ft above their ac. He confirmed this geometry with the PF and agreed to dial 1000ft into the ALT SEL window whilst the PF flew manually at 160kt and reduced the ROC until they had 'cleaned up' the ac. He requested ATC to confirm the level of the inbound ac to which they replied altitude 4000ft. He advised the controller that this did not agree with their TCAS display so ATC interrogated the BE200 crew and found that the flight was at 1800ft. The controller then instructed the BE200 pilot to climb immediately to 4000ft before they were instructed to climb and maintain altitude 2000ft. It appears that the BE200 crew was under the impression that they were cleared to descend with the RW13 arrival as 1800ft is the platform altitude. He assessed the risk as low.

THE BE200 PILOT reports inbound to Wick IFR at 180kt and in receipt of a PS from Wick squawking with Modes S and C. ScACC had cleared them down to 4000ft and handed them over to Wick and they were then told that they were cleared for the procedure RW13 under a PS. The start of this procedure involves a turning onto a 5DME arc at 1800ft. They reported turning onto the arc and when established another ac's crew, a JS41 flight on departure, asked for their position and altitude. They stated 1800ft, 5DME and the radial following which ATC told them to climb immediately to altitude 4000ft and report beacon outbound. He disconnected the A/P and initiated a climb; the procedure was completed and the ac landed safely. After landing they visited ATC and discussed the incident. The controller stated that they had been cleared for the procedure maintaining 4000ft; however, they had not read back 'maintaining 4000ft' nor had ATC repeated the 'maintain 4000ft altitude' restriction. Neither he nor the FO had heard the call from ATC.

THE WICK APP reports mentoring a trainee under OJTI supervision. The BE200 was inbound on the WIK 195R at altitude 4000ft under a PS, ETA WIK 1004. The BE200 crew was asked to maintain altitude 4000ft until advised and was cleared for the VOR/DME Direct Arrival RW13 and to report beacon outbound. The JS41 departed RW13 at 1003 under a PS routeing W4D to Aberdeen climbing to maintain altitude 3000ft. As the JS41 commenced its climb-out the crew queried the level

of the BE200 whose pilot reported maintaining altitude 1800ft. He took control and told the BE200 pilot to climb to altitude 4000ft to achieve standard vertical separation.

ATSI reports that the Airprox occurred outside the Wick ATZ (radius 2nm) situated in Class G airspace. Advisory Route W4D, Class F airspace, commences at WIK on magnetic track 163°. The base of the ADR is FL35 in the vicinity of WIK. Wick ATC is not equipped with surveillance equipment.

Wick Aerodrome/Approach position, which always operates combined, was being operated by a mentor and trainee. The mentor reported that the trainee was making all the RT transmissions until the time of the Airprox, albeit he was having to prompt him on occasions. The mentor reported that the workload was light, the subject ac being the only flights on the frequency.

The Wick 0950 METAR: 14022KT 6000 RADZ SCT004 BKN006 12/12 Q1012=.

The VOR direct arrival to RW13 at WICK from the S (UK AIP Page AD 2-EGPC-8-3) states:

> 'At MSA or above, at 7 DME WIK turn right to intercept the 5 DME arc WIK (CAT A,B), or at 9 DME WIK turn right to intercept the 7 DME arc (CAT C,D). Once established on the 5 or 7 DME arc descend **not below 1800** (1686). At lead radial R127 WIK turn left to intercept the R111 inbound to WIK VOR, **not below 1800**(1686). Continue to overhead WIK VOR then follow Basic Procedure'.

On this occasion, the BE200, on a CAT A flight, was routeing from the S direct to WIK, to establish on the procedure as stated above.

At 0956, the JS41 flight was cleared to taxi to holding point 'C', initially, for a departure from RW13. Subsequently, it was instructed to backtrack the RW. At this time, the BE200 established communication with Wick. The controller updated the Wx information (moderate rain and drizzle) and reported he was providing the flight with a PS. At the controller's request for his range and bearing from WIK, the pilot reported, *"Roger we are on a bearing of er One Nine Seven degrees and the range is twenty six nautical miles and expecting runway One Three confirm"*. This was confirmed and, at 0959:10, the BE200 flight was instructed to, *"...descend to altitude four thousand feet on the Wick QNH One Zero One Two"*. The pilot read back, *"Descend altitude four thousand feet one zero one two BE200 c/s"*. Shortly afterwards, the controller transmitted, *"BE200 c/s clear altitude four thousand feet to advise you are clear the VOR/DME direct arrival runway One Three next report Beacon Outbound"*. The pilot acknowledged the transmission just using his c/s. Consequently, the trainee, prompted by the mentor, requested a read back of the clearance. The pilot stated, *"BE200 c/s er roger the direct arrival for runway One Three and confirm that that's round the arc 'cause we're that's what we're intending to do round the five DME arc coming in and then outbound Three Hundred"*. The controller confirmed, *"...affirm that's the procedure"*. (The procedure is stated previously in paragraph above). Albeit that the pilot did not read back the ATC service being provided and this was not challenged by the trainee (a MATS Part 1 requirement), it is not considered to be a causal factor to the Airprox. The mentor commented later that he was aware that his trainee's plan was to issue descent to 4000ft to the BE200 flight and to allocate 3000ft to the outbound the JS41 flight. Consequently, he expected his trainee to instruct the BE200 crew to continue for the procedure but to maintain 4000ft until advised. The mentor agreed, with hindsight, that this instruction was not issued and he had missed this omission when the trainee passed the BE200 flight clearance for the procedure. Additionally, he had not registered that the pilot had not stated any altitude restriction during his read back. Therefore, the mentor believed that an altitude restriction of 4000ft had been placed on the BE200 until further advised. He commented that he had, previously, experienced problems with his trainee not obtaining read backs. Consequently, he agreed that he should have monitored his trainee's actions closer to ensure that the correct instruction was issued and read back correctly.

Nearing the end of its backtrack, the JS41 flight was issued with its departure clearance, *"...expect a local restriction after departure clear to Aberdeen via Whiskey Four Delta climb to maintain level*

Niner Five squawk is Six Zero Two Four and a Procedural Service". The pilot read back the clearance and the type of service correctly. Approximately one minute later, the local restriction was passed to the JS41 crew, *"...local restriction climb and maintain three thousand feet"*. This restriction was read back correctly. The controller now believed that procedural separation of 1000ft was established between the subject ac; however, no TI was passed regarding the reason for the local restriction that would have aided the pilot's situational awareness. At 1002:56, the JS41 flight was cleared for take off, with a R turn from RW13. However, the radar recording shows that, at the time, the BE200, 8·8nm S of WIK, was passing 1900ft and its Mode S Selected Flight Level (SFL) was 1800ft.

Shortly afterwards, at 1003:15, the BE200 crew reported *"...is turning right on the Arc"*. The controller requested the pilot to, *"...report turning left inbound on the One One One Radial"*, which he acknowledged. No mention was made about BE200's altitude, which was now 1800ft.

When airborne, the pilot of the JS41 requested at 1003:50, *"confirm level of the er outbound traffic"*. This message referred to the BE200. The controller, still believing that the BE200 was only descending to 4000ft replied, *"...the inbound traffic's now descending to the altitude Four Thousand feet"*. The pilot responded 1004:00 *"Roger our TCAS could be ?????*(possibly lower)*"*. As a result of this call, the pilot of the BE200 stated, *"Er BE200 c/s just to confirm we're at One Thousand Eight Hundred feet on the QNH One Zero One Two"*. Up until this point, the ATC transmissions had been made by the trainee. However, the mentor, realising that separation was not ensured, now took over (1004:10) and instructed the BE200 to, *"...climb to altitude Four Thousand feet expedite climb"*. This instruction was read back correctly. His next transmission was to the JS41, *"...stop climb altitude Two Thousand feet BE200 c/s is climbing to altitude Four Thousand feet"*. The JS41 crew replied, *"That's all copied we're maintaining one thousand feet on reaching JS41 c/s."*

[UKAB Note (1): The JS41 first appears on the radar recording at 1004:06 0·8nm SE of Wick tracking 130° indicating NMC with the BE200 in its 0130 position range 6·3nm level at 1800ft; the next sweep shows the JS41 level at 700ft.]

The following transmissions were then made to and from the BE200:

BE200 1004:30	*"????? BE200 c/s we are now climbing through Two Thousand Two Hundred feet can you confirm we were cleared in the procedure which involves One Thousand Eight Hundred feet at this point"*
ATC	*"BE200 c/s you were clear you were asked to maintain altitude Four Thousand feet until advised and cleared for the VOR DME direct procedure to runway One Three."*
BE200	*"Roger don't remember the first bit but anyway er BE200 c/s's passing Two Thousand Eight Hundred."*
ATC	*"BE200 c/s er roger report passing altitude Three Thousand feet."*
BE200 1005:00	*"BE200 c/s is now passing Three Thousand feet BE200 c/s."*

Thereafter, vertical separation existed and the JS41 flight was again instructed to climb altitude 2000ft.

The radar recordings of the event reveal that, at the lowest vertical separation of 1100ft, the aircraft were 5nm or more apart. Thereafter, vertical separation generally increased as the horizontal distance decreased. By the time the 2 ac were at their CPA (0·7nm) at 1005:52, vertical separation was 2000ft.

A Safety Directive was issued by Highlands and Islands Airports Ltd (HIAL) Head Office in August 2009 (04/09), concerning Instrument Approach Procedure (IAP) phraseology:

> 'The following phraseology should be used for all aircraft carrying out IAPs:
> When an aircraft has been cleared for an IAP and has reported "commencing the procedure" there is **NO** need to add *"descend / further descent with the Procedure"*. The onus is on the

pilot to descend as having already been cleared for the IAP, further descent has been authorised. If there is a need to restrict descent this should be stated **BEFORE** issuing a clearance for the IAP e.g *"Not below Alt3600 until advised, Cleared IAP Rw, report xxx"* and stated **AGAIN** once the pilot has reported "commencing the procedure" *"Not below Alt3600, Report xxx"* (if required). **PLEASE ENSURE THAT THE CORRECT READ-BACK IS RECEIVED AT ALL TIMES'.**

The MATS Part 1, Section 1, Paragraph 6, defines a Procedural Service:

'A Procedural Service is an ATS where, in addition to the provisions of a Basic Service, the controller provides vertical, lateral, longitudinal and time instructions, which if complied with, shall achieve deconfliction minima against other aircraft participating in the Procedural Service. A controller shall provide deconfliction instructions by allocating levels, radials, tracks, and time restrictions, or use pilot position reports, aimed at achieving a planned deconfliction minima from other aircraft to which the controller is providing a Procedural Service in Class F/G airspace'. On this occasion, the controller was intending to use the vertical minima, 1000ft.

The mentor believed that his trainee had instructed the BE200 to maintain 4000ft until advised whilst positioning for the direct VOR arrival to RW13. This would have ensured that the requisite 1000ft vertical separation, when both flights were receiving a PS, would have been provided between the subject flights. However, this instruction was not passed. The pilot was cleared for the VOR DME procedure with no restriction. This meant that the BE200 could descend on the procedure to 1800ft towards WIK and, thereby, into confliction with the JS41. Although the trainee was making the transmissions up to that point, it is assessed that the mentor must bear responsibility for the Airprox, for not ensuring that the correct instruction was issued by his trainee.

Apart from receiving an altitude report from the pilot of the BE200, after he had descended to 1800ft, ATC had no means of realising the situation between the 2 ac. It would appear that the potential confliction between the two flights was resolved following the TCAS observations received by the JS41.

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.

Controller Members agreed that the phraseology used by the Wick APP trainee, which went unchallenged by his mentor, had not restricted the BE200 to maintain 4000ft as intended. The instruction passed by APP had in fact cleared the BE200 to 4000ft and then continue with the direct arrival procedure which placed the BE200 into conflict with the departing JS41 causing the Airprox. Furthermore, the trainee/mentor team did not challenge the BE200 pilot's read back, which did not include any mention of the altitude restriction. Thereafter the APP team were unaware that the BE200 was descending to 1800ft until the JS41 crew challenged the BE200's level from the information displayed on TCAS. This had elicited the BE200's actual level from its pilot, which triggered the APP mentor to take control and instruct the flight to climb expeditiously, and then to restrict the JS41's climb and pass TI. CAT Members commended the good SA and actions taken by the JS41 crew. After informing ATC of the deteriorating situation and then levelling off at 1000ft whilst monitoring the BE200's flightpath as it commenced a climb out of confliction, the Board were in no doubt the JS41 crew had quickly and effectively removed any risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: APP cleared the BE200 into conflict with the JS41.

Degree of Risk: C.