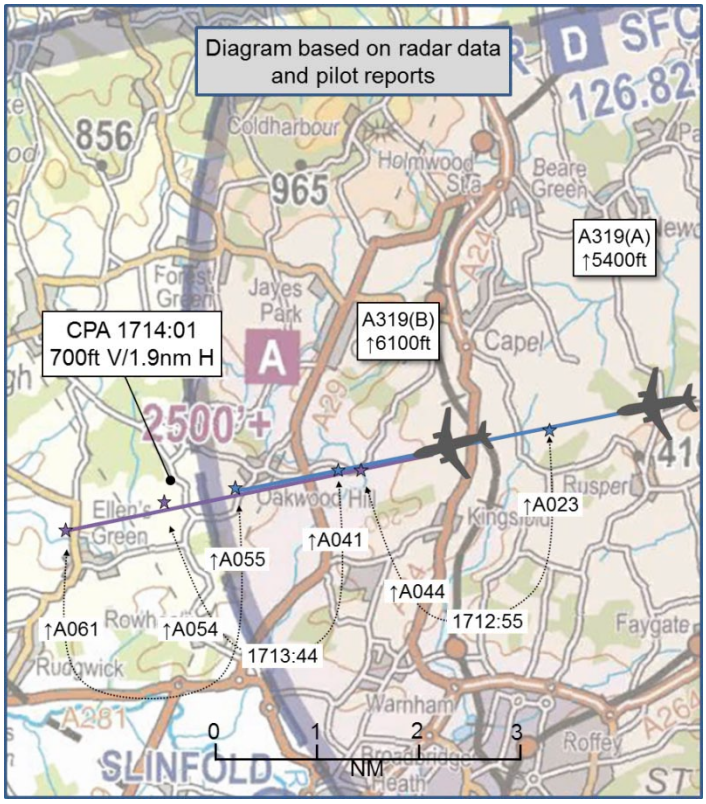
AIRPROX REPORT No 2016071

Date: 25 Apr 2016 Time: 1714Z Position: 5107N 00024W Location: 10nm W Gatwick airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A319(A)	A319(B)
Operator	CAT	CAT
Airspace	London TMA	London TMA
Class	A	A
Rules	IFR	IFR
Service	Radar Control	Radar Control
Provider	Swanwick	Swanwick
Altitude/FL	5400ft	6100ft
Transponder	A,C,S	A,C,S
Reported		Not reported
Colours	Company	
Lighting	NK	
Conditions	VMC	
Visibility	>10km	
Altitude/FL	4000ft	
Altimeter	QNH (1016hPa)	
Heading	260°	
Speed	250kt	
ACAS/TAS	TCAS II	
Alert	None	
Separation		
Reported	1000ft V/2nm H	NK
Recorded	700ft V/1.9nm H	



THE AIRBUS A319(A) PILOT reports that whilst on initial climb-out from Gatwick they approached a preceding aircraft (another A319) to within 2nm and closing. ATC forcefully instructed them, due to "avoiding action", to immediately stop climb at 5000ft and turn right heading 285°. Their Standard Departure Clearance, SAM 1X, had been amended pre-take off, to stop at 3000ft instead of 4000ft. They had been cleared to start their take-off roll as soon as the preceding aircraft was airborne. On handover, London Control cleared them to FL100. They selected speed and increased rate of climb (ROC). It was during this climb that ATC gave the avoiding instruction passing 4500ft. Due to ROC they could not make 5000ft, so they pushed to level-off and selected heading to avoid. They levelled-off at 5600ft, and selected VS -500 to return to 5000ft. Shortly thereafter, they were re-cleared to resume further climb and routing. The preceding aircraft was on a different route with probably 220kt as fixed speed. In contrast, they had a departure speed of 250kt. They closed on the other aircraft during the acceleration phase and the following initial climb.

He assessed the risk of collision as 'Low'.

THE A319(B) PILOT was operating a foreign registered aircraft and did not reply to repeated requests for a report.

THE TC SW DEPARTURES CONTROLLER reports that A319(A)'s pilot called him on departure from Gatwick. He instructed the pilot to squawk 'ident' and climb to FL100, which was the level agreed underneath another aircraft departing from Heathrow on a MID SID working TC WILLO. Shortly after issuing the instruction, he noticed an aircraft ahead of A319(A), which it was catching up. This was A319(B), also working TC WILLO. He issued avoiding action to the pilot of A319(A), but the aircraft's inertia took it through 5000ft before settling back down to 5000ft when clear of conflict. The Co-ordinator did not know why there was reduced separation between BOGNA and SAM departures, but he believed that it had been agreed much earlier by the previous Co-ordinator. He thought he

remembered being aware of it at the time the co-ordination took place between Gatwick ATC and the TC Co-ordinator but, because much time had passed before it happened, he had forgotten this whilst controlling the sector and there was no prompt on any strips to show which aircraft were involved in the reduced separation from the airport. He did not remember seeing A319(B) on his radar scan before issuing the climb to the pilot of A319(A). In future, he thought, the procedures could be amended to provide the TC Co-ordinator with the callsigns involved in reduced separation takeoffs so that if the reduced split does not happen immediately then it would not be missed during handovers, because strips can be annotated.

THE TC SOUTH CO-ORDINATOR reports that he was asked to fill out a report some 10 days after the incident occurred. Gatwick FIN asked for a BOGNA/SAM split with the aircraft concerned (he did not recall if he was given the callsigns). He believed he then verbally alerted the controllers to this split happening, again he was not 100% sure if he passed on the relevant callsigns. He was relieved of his position before the Airprox and went on a break. He was then informed of some incident occurring between them on departure (he was not sure what), but they had apparently departed some 12mins after the initial request for a reduced separation departure was made.

Factual Background

The weather at Gatwick was recorded as follows:

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METAR EGKK 261650Z 28010KT 9999 VCSH FEW021CB SCT028 09/06 Q1006 RESHRA=
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In the vicinity of aerodromes, the standard separation minima may be reduced if adequate separation can be provided by the Aerodrome controller when each aircraft is continuously visible to this controller.[1] The required separation between the two aircraft in contact with Swanwick was 3nm horizontally or 1000ft vertically.

Figures 1 and 2 show the initial portions of the Gatwick RWY26L BOGNA 1X and SAM 1X departures wherein the speed requirements are annotated as 220KIAS maximum for BOGNA 1X and 250KIAS maximum for SAM 1X along the common initial tracks.

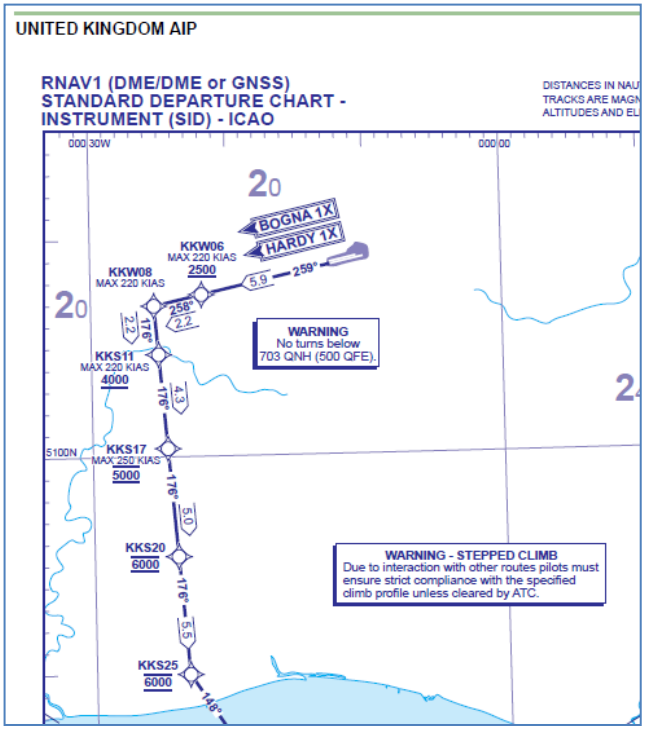

Figure 1 Gatwick BOGNA 1X SDC.

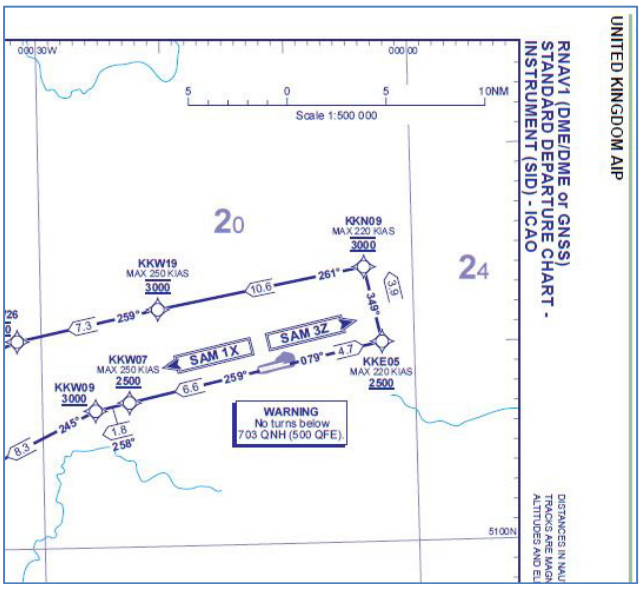

Figure 2 Gatwick SAM 1X SDC.

[1] CAP493 Manual of Air Traffic Services Part 1, Section 1, Chapter 3, Page 1.

Analysis and Investigation

CAA ATSI

ATSI had access to the report from the pilot of A319(A) aircraft, reports from the TC Air Traffic Controllers and the TC Unit report, the area radar recording as well as recordings of the Gatwick Tower and TC departure frequencies. Screenshots produced in the report are provided using the area radar recordings. Levels indicated are in altitude. A319(A) was operating IFR, in receipt of a Radar Control Service from Terminal Control (TC) South West departures at Swanwick. A319(B) was operating IFR, in receipt of a Radar Control Service from Terminal Control (TC) WILLO at Swanwick.

At 1701:26 co-ordination took place between the TC South Co-ordinator and the Gatwick FIN controller to accommodate a request from Gatwick Tower to use a reduced time separation between two successive departures from Gatwick.

At 1710:15, A319(B)'s pilot was cleared for take-off from RW26L. At 1711:00, A319(A)'s pilot was cleared for take-off from RW26L.

At 1711:18 (Figure 3) A319(B) (code 2233) first appeared on Radar.

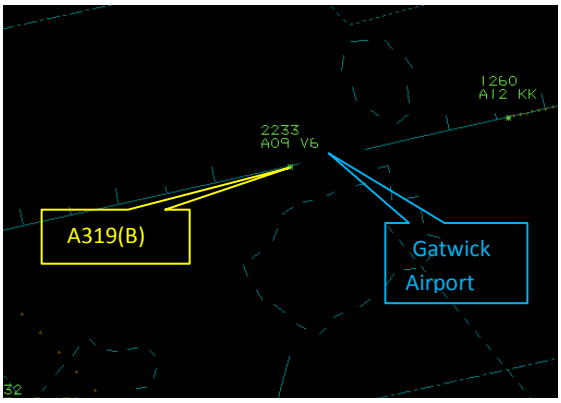

Figure 3 (1711:18).

At 1711:45 the Gatwick Aerodrome controller asked the A319(B) pilot to report passing 3000ft; the A319(B) pilot reported passing 3000ft at 1712:00.

At 1712:10 (Figure 4) A319(A) first appeared on radar passing 1000ft. A319(B) was passing 3200ft climbing to 5000ft.

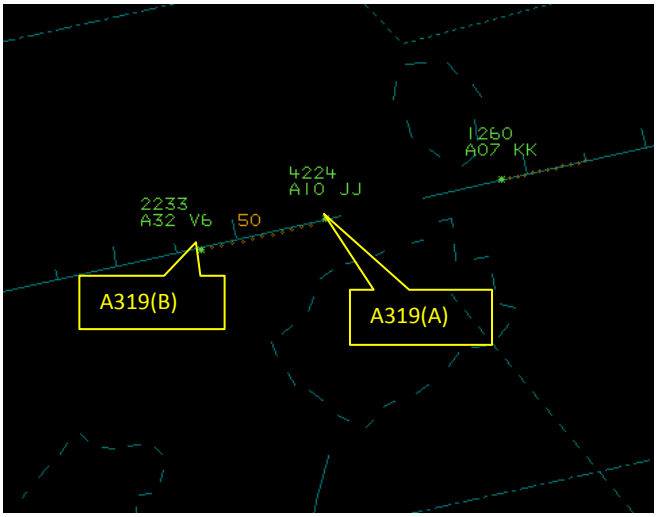

Figure 4 (1712:10).

At 1712:42 (Figure 5), the Gatwick Aerodrome controller transferred the pilot of A319(B) to the TC WILLO Sector and then proceeded to transfer the pilot of A319(A) to TC SW Departures. The A319(B) was at 4100ft and the A319(A) was climbing to 3000ft.

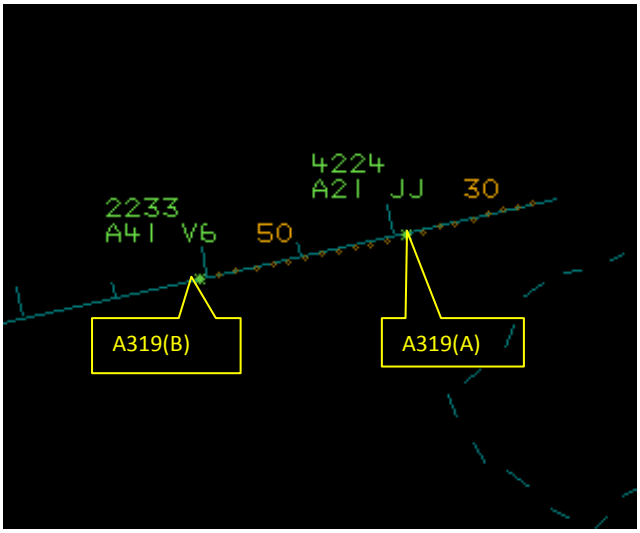

Figure 5 (1712:42).

The TC WILLO controller identified A319(B) (at 1712:58) and issued the pilot with a climb instruction to FL80 which, following a couple of attempts, was correctly read back at 1713:22.

The TC SW Departures controller identified A319(A) and issued its pilot a climb instruction to FL100 which was read back correctly at 1713:10**.**

At 1713:35 (Figure 6) the SW Departures controller issued an 'avoiding action' turn and an instruction to stop the climb at 5000ft to the A319(A) pilot. This instruction was read back immediately. At exactly that second, the Short Term Conflict Alert (STCA) began to warn the controller of the proximity.

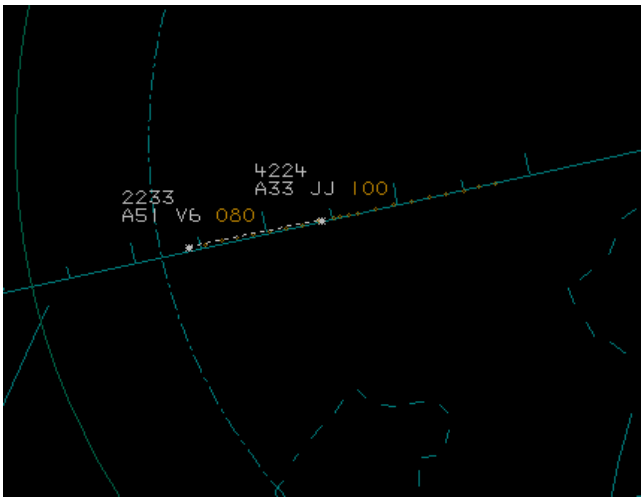

Figure 6 (1735:35).

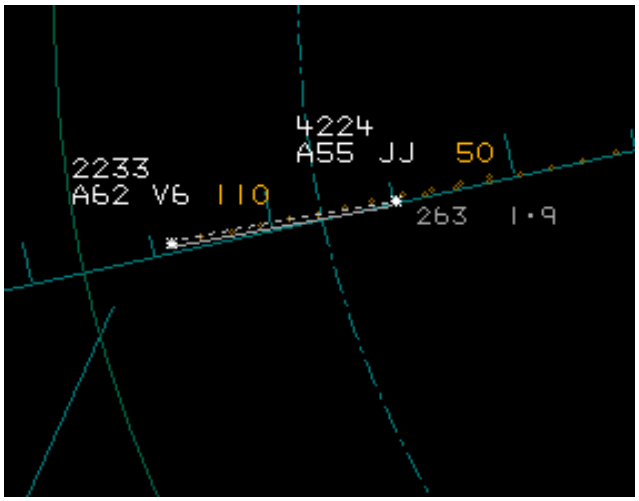

Figure 7 (1714:03).

At 1714:03 (Figure 7) the pilot of A319(A) reported that he was returning to 5000ft. This was also the point of CPA when the aircraft were 1.9nm horizontally and 700ft vertically apart. The aircraft had become this distance from each other approximately 10 seconds earlier and it had remained constant. At the same time, the TC WILLO controller confirmed there was no speed restriction for A319(B).

The TC Planner for this sector reports co-ordinating with Gatwick FIN a departure sequence with one aircraft routing via BOGNA and another via SAM. Both of these departures climb to 4000ft but, with the coordination that had been effected, the second aircraft (A319(A)) would stop at 3000ft. This is evidenced by the cleared level of 3000ft indicated in Figure 5.

The normal minimum IFR take-off separation between two aircraft (similar type) on this routing is 2 minutes. However, the Gatwick Aerodrome controller, subject to co-ordination, can employ 'reduced separation in the vicinity of the aerodrome', provided that, prior to handover to Radar, the aircraft are separated. In this case 45 seconds elapsed between the respective take-off clearances. This scenario had been the subject of discussion between the ANSPs involved and the CAA a few months prior to the occurrence, resulting in revised procedures being adopted, which clarified the rules that applied. This is a regular situation, and the Gatwick Aerodrome controller complied with the standard procedure.

The Gatwick BOGNA 1X departure had a 220kt maximum speed restriction which applied to the preceding A319(B). The subsequent departing A319(A) did not have a speed restriction (except the statutory 250kt below FL100).

When the A319(A) pilot first spoke to the TC SW Departures controller, the controller stated in his report that he did not initially realise the presence of the traffic ahead and climbed the pilot of A319(A) to FL100. The controller recognised his error after approximately 20 seconds and commenced appropriate recovery action.

The crew of A319(A) responded immediately to the 'avoiding action' instruction, although the inertia of their aircraft was such that it was not possible to stop the climb at the 5000ft specified, and consequently a loss of standard separation occurred until they returned to 5000ft.

The original co-ordination to accept the two departures appears to have been communicated to the operational staff from the TC Planner at the time the co-ordination took place, although another required element of co-ordination was omitted. It appears that no direct callsigns were referred to, and no record was kept on the sector that such coordination was waiting to be effected. This departure pairing appeared on radar over 10 minutes after the co-ordination took place, and a change of Planner had occurred during this time. Although the climb instruction to A319(A)'s pilot to climb to FL100 was an error (lapse), the preceding A319(B) crews slowness in understanding and actioning the climb instruction from the TC WILLO controller compounded the vertical rate of closure between the two aircraft, which, when first observed on radar, was 2000ft.

ATSI recommended that when co-ordination takes place, whereby a specific departure sequence is accommodated to enable the Aerodrome controller to utilise reduced separation, a record of this co-ordination, including specific call-signs, should be made on the sector. This echoes comments made by the reporting controller.

UKAB Secretariat

The A319(A) and A319(B) pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[2]. Notwithstanding, in CAS under a Radar Control Service, it is the responsibility of the controllers concerned to ensure that standard separation requirements are met.

Summary

An Airprox was reported when A319(A) and A319(B) flew into proximity at 1714 on Monday 25th April 2016. Both pilots were under IFR, in receipt of a Radar Control Service from Swanwick. Both aircraft had departed from Gatwick, A319(B) ahead of A319(A). Co-ordination took place with Swanwick for the Aerodrome controller to vertically separate the two flights following a reduced separation take-off

[2] SERA.3205 Proximity.

sequence. Both aircraft were transferred to their respective Swanwick Sectors appropriately vertically separated. Unfortunately, separation was lost when A319(A) was then cleared to climb on contact with TC SW Departures before lateral separation had been provided from A319(B). As a result, A319(A) closed on A319(B) and was given avoiding action by ATC. Minimum separation was recorded as 700ft vertically and 1.9nm horizontally.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilot of A319(A), the controllers concerned, area radar and RTF recordings and reports from the appropriate ATC and operating authorities.

The Board first expressed its disappointment that the pilot of A319(B) had not filed a report, noting that he was operating a foreign-registered aircraft and therefore not required to abide by UK regulations in this respect. However, bearing in mind that his aircraft had been ahead of A319(A); he had been on a different frequency at the time of the Airprox; and his flight-path had not been changed, the Board concluded that it was probable that he would not have been able to add much further information to that already obtained.

The Board noted that the usual time separation between the two departing A319s would normally have been 2 minutes. However, in order to increase the departure frequency, the Gatwick Aerodrome controller had co-ordinated reduced separation with Swanwick using procedures developed to allow for this in the vicinity of an aerodrome. This required keeping both aircraft in sight until vertical separation (1000ft) had been applied by the Aerodrome controller. In the event, the two aircraft departed 45secs apart, and the Aerodrome controller complied with the co-ordination by limiting A319(A)'s altitude on departure to 3000ft. As A319(B), ahead, passed through 4000ft he transferred the aircraft to their respective Swanwick sectors, vertically separated; A319(A) to SW DEPS and A319(B) to Willo.

When the pilot of A319(A) then contacted the SW DEPS sector (reporting climbing to 3000ft) the controller cleared him to climb to FL100. However, he had not ensured separation from A319(B) ahead, whose presence had not been assimilated by the controller. Shortly afterwards he then observed A319(B) on his radar display, realised that A319(A) was catching it up, and issued the latter's pilot with an avoiding action turn and to stop climb at 5000ft. A319(A) was passing 4500ft at the time and, due to its ROC, the aircraft levelled at 5600ft before descending back to 5000ft. The NATS Advisor informed the Board that A319(A) had been climbing at 5600fpm at the time, and some members wondered if this had been an excessive ROC; however, it was pointed out that the only ROC restriction in Controlled Airspace was for ROC to be not more than 8000fpm.

Having established the sequence of events where it was quickly evident that the SW DEPS controller had cleared the A319(A) to climb into conflict with A319(B), the Board then turned its attention towards why the SW DEPS controller might have done so. They first discussed the co-ordination which had been agreed between the South Co-ordinator and Gatwick. It was agreed that this had been a feasible plan, but it was apparent to the Board that the Co-ordinator had only partially fulfilled his responsibilities for informing the controllers concerned of the agreement. The SW DEPS controller recalled that the Co-ordinator had verbally informed them of the forthcoming reduced separation departure but had not made clear the callsigns of the aircraft involved. Additionally, he had not ensured that the flight progress strips had been annotated accordingly. ATC members emphasised that this was an important factor because the co-ordination had occurred about 12 minutes before the event; in that time the controller would have been dealing with a number of extra flights contacting the sector and would understandably not have been likely to have retained the information passed to him verbally many minutes before. The Board also noted that the Co-ordinator position had been handed over before the two aircraft were airborne, and it was not known if the information had been passed to the oncoming Co-ordinator or, if not, whether the original Co-ordinator had re-warned the SW DEPS controller of the situation before he left his post. A TC Controller member, (who had unfortunately been unable to attend the Board but had provided pre-Board written comments) wondered why the co-ordination had taken place comparatively early when, in his experience, it is usually carried out much closer to the aircraft departing.

Notwithstanding the deficiencies in handling the coordination, several members commented that, in their opinion, the controller should have scanned his radar display first before climbing A319(A) rather than the other way round; in doing so, he should have seen A319(B) ahead and not have climbed A319(A). The TC member had also covered this issue in his comments and explained that the SW DEPS controller would not necessarily have been looking at the preceding departure because, having not been specifically alerted to any reduced separation immediately prior to the departures, he would have expected them to have been laterally separated and 'clean' to him after being transferred from Aerodrome Control. His attention would therefore have been focused on the Heathrow departures, or OCK inbounds, to see where his standard conflictions were. Notwithstanding, ATC members agreed that it was good practice to scan the radar ahead before issuing a clearance to an aircraft, and the TC member had also commented that, ideally, the controller should have noted that A319(A)'s pilot had reported climbing to 3000ft, and might be expected to at least mentally query why that might be before giving an instruction for it to climb to FL100.

The Board noted that both flights had been following separate RNAV departure routeings with a common first track: A319(B) had been on a BOGNA departure which is restricted initially to a maximum speed of 220kt; the following A319(A) had been on a SAM departure, which follows the BOGNA routeing initially but with a higher maximum speed of 250kt. Civil Airline pilots explained that the BOGNA RNAV departure involves an 83° turn and, to ensure that an aircraft follows the exact routeing, a speed restriction of 220kt is considered necessary. Noting that the SAM departure notionally allows aircraft to fly faster than the BOGNA departure, several members wondered if this speed difference between the two routings had been a contributory factor in A319(A) catching up A319(B). However, the NATS advisor explained that radar recordings had shown that A319(A) had in fact only been 8-14kt faster than A319(B) as they climbed out from Gatwick. Accordingly, the Board did not consider the differing speeds were a significantly contributory factor.

Turning to the cause of the Airprox, the Board quickly agreed that the SW DEPS controller had climbed A319(A) into conflict with A319(B); notwithstanding, several members considered that the cause should also involve the poor co-ordination that had occurred. However, after a lengthy discussion, it was agreed that the root cause should stand on its own because the controller should have scanned ahead before climbing A319(A) irrespective of the poor co-ordination. Nevertheless members agreed that the poor coordination should be stated as a contributory factor, as should the fact that the aircraft departed only 45sec apart, without which the situation would not have occurred.

In looking at the risk of collision, although it was recognised that the controller's actions had caused the confliction between the subject aircraft, the Board noted that he had quickly taken action to regain control of the situation. The A319(A) pilot had reacted to the controller's instruction to stop his climb at 5000ft, albeit, due to its ROC, the aircraft had reached 5600ft before descending. The Board noted that the standard separation required between A319(A) and A319(B) was either 1000ft vertically or 3nm horizontally. Because standard separation had not been maintained (CPA was recorded as 700ft vertically and 1.9nm horizontally), the Board considered that safety had been degraded. However, the Board assessed that timely and effective actions had nonetheless been taken by the controller; additionally, the rate of catch-up between the two aircraft was very low and the pilot of A319(A) had been aware of the presence of A319(B) ahead so would not have continued on a collision path as a result. Consequently, the incident was assessed as Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The TC SW controller climbed A319(A) into conflict with A319(B)

Contributory Factors: 1. Co-ordination conducted 12 minutes prior to CPA with previous Co-ordinator and was not recorded on the aircraft's data strip.

2. Reduced time separation between departing aircraft.

Degree of Risk: C.