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Swiss Confederation

Büro für Flugunfalluntersuchungen BFU
Bureau d'enquête sur les accidents d'aviation BEAA
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Aircraft Accident Investigation Bureau AAIB

Final Report No. 1955 by the Aircraft Accident Investigation Bureau

concerning the serious incident (airprox)

involving SWR 758, HB-JAY

and EZS 1055, HB-JZJ

on 10 September 2005

8 NM north-east HOC DVOR

Bundeshaus Nord, CH-3003 Berne

General remarks concerning this report

This report contains the AAIB's conclusions on the circumstances and causes of the serious incident which is the subject of the investigation.

In accordance with Annex 13 of the Convention on International Civil Aviation of 7 December 1944 and article 24 of the Federal Air Navigation Law, the sole purpose of the investigation of an aircraft accident or serious incident is to prevent future accidents or serious incidents. It is therefore not the purpose of this investigation to determine blame or clarify questions of liability. The legal assessment of accident/incident causes and circumstances is no concern of the incident investigation (art. 24 of the Air Navigation Law).

If this report is used for purposes other than accident prevention, due consideration shall be given to this circumstance.

The definitive version of this report is the original in the German language

All times in this report, unless otherwise indicated, follow the coordinated universal time (UTC) format. The local time (LT) in force in Switzerland at the time of the accident was Central European Summer Time (CEST). The relation between LT, CEST and UTC is: LT = CEST = UTC + 2 h.

For reasons of protection of privacy, the masculine form is used in this report for all natural persons, regardless of their gender.

Final Report

Aircraft	SWR 758, Embraer RJ145LU, HB-JAY, Swiss International Air Lines	
	Zurich (LSZH) – Luxembourg (ELLX)	
	EZS 1055, Airbus A319-111, HB-JZJ Easyjet Switzerland	
	Basle (LFSB) – Rome-Ciampino (LIRA)	
Crews	SWR 758	CMDR FO
	EZS 1055	CMDR FO
Place	8 NM N/E HOC DVOR	
Date and time	10 September 2005, 15:27 UTC	
ATC unit	Zurich CIR - Common IFR Room	
Air traffic controllers	Zurich Departure (DEP)	(Coach)
	Zurich Departure (DEP)	(Trainee – revalidation)
	Radar Executive West	(RE-W)
	Radar Planner West	(RP-W)
ATC unit	Basle Approach	
Air traffic controllers	Coordinator	(CORI)
	Radar INI	(Coach)
	Radar INI	(Trainee – on the job training)
Airspace	**C**	

1. History

1.1 History of the flight

On the afternoon of 10 September 2005, the Swiss International Airlines Embraer ERJ145, flight number SWR 758, took off on a scheduled flight from Zurich to Luxembourg. The take-off took place at 15:19 UTC from runway 28. The planned departure route was via VEBIT – LASUN – TORPA. Handover of the aircraft to Sector West was envisaged at FL 120 or during the climb to FL 120, in accordance with an internal agreement. On their first contact with Zurich departure (DEP), the crew asked for clearance to continue on their current heading (runway heading) to avoid a thunderstorm cell. This was approved by the DEP air traffic controller (ATCO).

According to his statements, the commander (CMDR) of SWR 758 was well aware of the weather situation as he had already made three flights on that day. He stated: "*I was also in the met office before the flight to LUX and observed very carefully the animated satellite image. Summary: very unstable thundery weather prevailed*". It was his intention after take-off to follow the departure route for three to four minutes and then to turn north and maintain this heading. Thus the flight would run parallel to the thunderstorm front, which in this area was located between Olten and Liestal, according to MeteoSuisse.

After an enquiry from Zurich DEP, the crew of SWR 758 confirmed that a left turn back onto the assigned departure route VEBIT 1W was not possible and that they would like to maintain their current heading for the next 30 NM. Zurich DEP approved this and at the same time informed the crew that for the next 20 NM they would have to maintain the flight level of 7000 ft QNH, which they had reached in the meantime. Thirty seconds later, SWR 758 requested a right turn onto heading 290, which was approved by Zurich DEP.

At 15:20 UTC, the Easyjet Switzerland (EZS) A319, call sign Topswiss 1055, had taken off in Basle from runway 34 on a scheduled flight to Rome-Ciampino. After contact with Basle Approach (APP) was established, the crew were instructed to climb initially to FL 090 because of parachute jumps in the area of Bremgarten (D). FL 110 was coordinated with Sector West in Zurich, as published for departures via BASUD. The assigned departure route BASUD 4N would have taken the aircraft via the NDB BN and then, with a left turn, onto heading 184° respectively 135° to BASUD. Sector West was responsible for the continued climb of EZS 1055 along route BERSU – GERSA – ODINA. In order to avoid a thunderstorm cell, after take-off the crew of EZS 1055 requested a right turn to waypoint GERSA. At 15:22:58 UTC Basle radar INI gave clearance for a right turn onto heading 150.

At 15:23:12 UTC, the coordinator in Basle (CORI) made telephone contact with the RP-W in Zurich and enquired about waypoint GERSA. The RP-W proposed to him: "...*You can send him direct to SOSON, if you want, that's heading one four five*". The crew of EZS 1055, however, were not in a position to accept the heading to SOSON proposed by Basle APP, but requested a heading 110, which was approved.

At 15:24:24 UTC, SWR 758 had crossed the flight path of a crossing aircraft and received clearance from Zurich DEP to climb to FL 120. At this time, the aircraft was approximately 15 NM north of the original departure route. Following this radio conversation, Zurich DEP coordinated with Basle CORI and informed him of the position as well as the current and cleared flight level of SWR 758, since an incursion into Basle APP's area of jurisdiction was indicated. At the same time, DEP enquired

whether there was a possibility of clearing SWR 758 on a direct heading to waypoint LASUN. Basle CORI referred to EZS 1055 and asked whether this aircraft was visible on the radar monitor in Zurich. Zurich DEP answered in the affirmative, upon which Basle CORI informed him as follows about EZS 1055: "*Climbing flight level one one zero and we send it on Zurich frequency*". Both ATC units had detected the respective other aircraft on the radar monitor. They did not have any further information, as an incursion into their area of responsibility was not provided for. The coordination conversation ended with the following words from Zurich DEP: "*... I stay below, I stay below, level one hundred*". Basle CORI confirmed this with "*okay*". According to the statement of the DEP ATCO, by this he meant staying under the flight level of ESZ 1055, which according to his current information was climbing to FL 110. At the end of the coordination conversation, the two aircraft were flying on opposing headings and were about 19 NM from each other. Immediately afterwards, Zurich DEP instructed SWR 758 to stop its climb at FL 100.

According to the statements of the authorised representative of France, the Basle CORI assumed during the incoming telephone calls that he was speaking with the Sector West ATCO in Zurich. The Zurich ATC unit making the call was apparently not always clearly identifiable on the display unit in Basle.

The ATCOs at Sector West were expecting SWR 758 and EZS 1055 on their frequency. At 15:25:04 UTC, the RP-W, who together with the RE-W realised from the radar monitor that there was an impending conflict, telephoned Basle CORI and made him aware of SWR 758. The RP-W requested a heading of approximately 180° for EZS 1055 to solve the conflict. Basle informed him that EZS 1055 was maintaining FL 090 and flying on heading 110, to avoid a thunderstorm zone. The RP-W then informed the RE-W that EZS 1055 remained at FL 090.

Basle CORI, which assumed that SWR 758 was in contact with Sector West, now expected SWR 758 to climb immediately.

According to the RP-W's statement, after the conversation with Basle CORI he was of the opinion that a separation problem would not arise. He had assumed that Zurich DEP would allow SWR 758 to climb to FL 120 in accordance with standard procedures and that Basle would, as communicated, leave EZS 1055 at FL 090 for the time being. He assumed at the same time that flight level FL 090 had been coordinated between Basle and Zurich DEP.

At the same time, Zurich DEP noticed that EZS 1055 was not climbing to FL 110, as had been assumed, but was remaining at FL 090. The air traffic controller therefore stopped SWR 758 at FL 090. According to his statement this was the next possible flight level at which SWR 758 could stop its climb without having to descend again. According to the coach's statement, both aircraft were still so far from each other that it was possible to wait for other measures.

At 15:25:33 UTC, Basle APP issued a traffic information to EZS 1055 and informed the crew about SWR 758, which was on an opposing heading and flying at the same flight level FL 090. According to the crew statements, the traffic alert and collision avoidance system (TCAS) showed them an approaching aircraft at the same altitude. However, they were not able to establish visual contact.

Also at 15:25:33 UTC, Zurich DEP enquired of the RE-W whether EZS 1055 was climbing and whether the aircraft was on the Sector West frequency. The RE-W answered that he did not yet have contact with EZS 1055. Immediately afterwards,

DEP asked the Coordinator Approach (CAP) to clarify with Basle whether EZS 1055 was actually climbing to FL 110. However, according to the statement by DEP, this conversation did not come about, as Basle was unavailabe by telephone. Zurich DEP then gave the following instruction at 15:25:45 UTC: "*Swiss seven five eight turn immediately left, heading two five zero"*, which was immediately confirmed by the crew.

The RP-W and RE-W observed the situation on the radar monitor. According to the RP-W's statement, they saw that both aircraft were at FL 090. He then said to the RE-W: "*Why isn't SWR 758 climbing?*". Shortly afterwards, at 15:26:04 UTC the RE-W informed Zurich DEP that EZS 1055 was remaining at FL 090. The latter then immediately gave the following instruction: "*Swiss seven five eight, climb immediately, climb immediately flight level one one zero*".

At the same time, Basle CORI asked the RP-W by telephone whether SWR 758 would remain at FL 090 or would climb higher. The RP-W confirmed the climb. At almost the same time, at 15:26:13 UTC, the Basle Radar INI ATCO cleared EZS 1055 to climb to FL 110 and instructed the crew to turn further right onto heading 360.

According to information from the CMDR of EZS 1055, after receiving the clearance to climb to FL 110 the crew observed on the TCAS the almost simultaneous climb by the other aircraft, at approximately the same rate of climb. The TCAS then generated a traffic advisory (TA); however, the crew were not able to establish visual contact in this phase either.

At 15:26:37 UTC in Basle, at the Radar INI workstation, the coach took over traffic control from the trainee. He countermanded the climb clearance to EZS 1055 and at the same time issued another traffic information to it: "*Topswiss 1055 don't climb, don't climb, I confirm don't climb, the traffic is at your 11 o'clock three miles, left to right, six hundred feet above, climbing*". The crew answered at 15:26:51 UTC that they would soon be reaching FL 110, upon which they received another traffic information from the air traffic controller and were instructed to descend immediately to FL 090.

The CMDR of SWR 758 stated that the TCAS had generated at TA during the climb from FL 090 to FL 110. An aircraft was indicated approaching from the right which was also climbing. In addition, there was a large thunderstorm cell in front of them which, according to his estimate, they would fly into after approximately 5 NM. Once they were able to establish visual contact with the Airbus 319, they kept it in sight. Suddenly, the latter had apparently descended and turned off to the right.

At 15:27:02 UTC, according to the radar recording, the flight paths of EZS 1055 and SWR 758 had converged to 2 NM. SWR 758 had passed FL 103 on its climb to FL 110, whilst EZS 1055 was also still climbing and passing FL 100. The shortest lateral separation between the two aircraft was measured at 15:27:14 UTC as 1.8 NM. The altitude difference was 500 ft. SWR 758 was at FL 108 and EZS 1055, according to the radar recording, reached the highest indicated value of FL 103 before it descended again to FL 090. SWR 758 was on heading 250, whilst EZS 1055 was flying a 180° turn onto heading 360 degrees.

After EZS 1055 had flown a full circuit at FL 090, the crew were instructed to contact Zurich on 135.675 MHz. SWR 758 was later cleared to climb to FL 240 and handed over to Reims Control.

1.2 Procedures

The coordination and transfer procedures between Basle APP, Zurich ACC, Zurich APP and Berne APP were prescribed in the "Letter of Agreement BASLE APP – ZURICH ATC". No procedures were listed in the LoA for flights which deviated from the standard routes.

1.2.1 Basle ATC

The original text of the Letter of Agreement (LoA) was available to ATCOs in Basle as operating regulations. Departures from Basle which request a cruising altitude of flight level FL 110 or higher and which fly into Zurich airspace are coordinated by Basle

a) via waypoint ELBEG with Sector North in Zurich, or
b) via waypoint BASUD with Sector West in Zurich

Regarding flight EZS 1055, the following provision in the LoA, Annex 4, under point 2 "Eastbound flights" was applicable:
2.1 Flights departing from AoR Basle shall be cleared by Basle APP via BASUD, FL 110, to reach FL 110 latest BASUD.

Flights from Basle to Zurich were as a rule coordinated directly between Basle and Zurich APP.

1.2.2 Zurich ATC

The "Letter of Agreement BASLE – ZURICH ATC" was not published in the Zurich ATC operating procedures. Instead, for Zurich TWR/APP the procedures were contained in the ATC Manual II ZT and for Zurich ACC in the ATMM Volume 2 ATC MANUAL.

According to these procedures, departures from Zurich were cleared to FL 120 by DEP on the published Standard Instrument Departures (SID) without coordination.

1.3 Weather analysis according to MeteoSwiss (extract)

General weather situation

Switzerland was at the forefront of a high-altitude trough over Western Europe. This was bringing humid air masses to the Alpine area in unstable strata. In the afternoon in particular these were producing local shower cells and some powerful thunderstorm cells.

Radar image (Annex 1)

The radar image shows a thunderstorm cell extending from Olten to Liestal. The other shower cells did not affect the area of the incident.

Conclusion (according to MeteoSwiss)

On the basis of the listed information, it is possible to conclude that the weather conditions at the time and in the area of the incident were as follows.

At the time of the incident, there was a fairly large but isolated thunderstorm cell in the Olten-Liestal region which was producing isolated lightning. In addition, there was

also an isolated thunderstorm cell in the region of Koblenz, but this was distinctly smaller and no lightning activity was measured in it. Generally, the shower and thunderstorm activity was somewhat more pronounced in Southern Germany than in Switzerland.

In the remaining area (Switzerland), cloud cover was very heterogeneous. The main cloud base was generally at about 9000 ft AMSL. There was some isolated cumulus cloud below this. The cloud ceiling, according to the Payerne probe, would have been at approximately FL 150.

Weather according to skyguide Infonet data

ATIS ZURICH

INFO HOTEL LDG RWY 14 ILS APCH, DEP RWY 28
QAM LSZH 1520z 10.09.2005
200 DEG 6 KT
VIS 30 KM
CLOUD SCT 3000FT, SCT 9000FT
+23/+15
QNH 1011 ONE ONE
QFE THR 14 961
QFE THR 16 962
QFE THE 28 961
NOSIG
TRL 75 DAY 0431 NGT 1823 QNH TICINO 14440z: 1010 HPA
TROPO: 39000FT, MS58

METAR Basle according to MeteoSwiss

LFSB 1500Z 27007KT 6000 VCSH FEW036 SCT046CB 23/15 Q1011 TEMPO SHRA
LFSB 1530Z 22008KT 6000 -SHRA FEW036 SCT050 FEW051CB BKN100 21/16 Q1011
NOSIG

2. Analysis

2.1 Standard procedures for Zurich and Basle departures

Departures from Zurich via VEBIT are cleared by DEP to FL 120 and transferred for their continued climb to Sector West. As a rule, they fly over Basle's area of responsibility. Flight plan data for such flights are therefore not sent to Basle APP.

Departures from Basle via BASUD are cleared by Basle to FL 110. These departures are also transferred by Basle APP to Sector West for their continued climb. The route for a flight starting from Basle direction BASUD lies outside the Zurich APP area of responsibility. The flight plan data are therefore only sent to Sector West.

The transfer of aircraft to Sector West both by Zurich DEP and by Basle APP takes place by means of a silent transfer.

Zurich departures and Basle departures are normally separated vertically from each other.

2.2 Zurich Departure

The DEP workstation was occupied by two ATCOs (the DEP ATCO and a coach). The DEP ATCO had several years' experience as an ATCO, but no longer had validation, after more than 60 days during which he had been employed on office duties. His work was being monitored by the coach. This was his first day at work within the framework of the revalidation programme.

According to his own statements, the coach restricted himself strictly to the monitoring function. He considered the behaviour of the DEP ATCO to be correct; the latter had acted with foresight and in good time throughout the incident.

The DEP ATCO cleared SWR 758 to climb to 7000 ft QNH because he had to separate the Embraer 145 from an aircraft flying to Zurich. Therefore, SWR 758 was not able to continue its climb until five minutes after take-off.

The DEP ATCO had realised early that SWR 758 would be leaving his area of responsibility on heading 290 because of a thunderstorm cell. He subsequently coordinated the flight path with Zurich Approach (APP) and informed the Daily Operations Manager (DOM-TWR) that SWR 758 would probably fly into German airspace. In addition, he coordinated the flight with Basle APP, as penetration of the Basle APP area of responsibility was also indicated. However, coordination with Sector West did not take place, despite the clear deviation of SWR 758 from the standard departure route.

The workload at the DEP sector was high because of the complex weather situation. Take-offs were occurring every two to three minutes. The question is therefore posed as to whether there would have been more time for additional coordination if the take-off intervals had been increased.

When the DEP ATCO first coordinated the SWR 758 flight with Basle APP, the CORI Basle informed him that EZS 1055 was climbing to FL 110. The DEP ATCO then answered that he would clear SWR 758 below EZS 1055 and allow it to climb to FL 100. At this time, EZS 1055 was about 600 ft above SWR 758, which was still at 7000 ft QNH. When Zurich DEP later realised that EZS 1055 was remaining at FL 090, he stopped SWR 758 climbing at FL 090. According to his information, this was the next possible flight level which would avoid SWR 758 having to descend again. On the basis of the coordination conversation, the DEP ATCO could assume that EZS 1055, whose altitude was shown on the radar monitor as FL 090, would continue climbing to FL 110.

However, no clarificatory conversation between CAP and Basle to confirm this situation came about, because Basle was not attending to the telephone. At this time, Basle CORI was very probably still in a conversation with the RP-W, during which FL 090 and heading 110° were agreed.

A little later, DEP assigned SWR 758 heading 250, on the assumption that EZS 1055 would continue to maintain heading 110 degrees. In this way, DEP was attempting to further resolve the conflict by ensuring lateral separation.

2.3 Basle Approach

In Basle, the two workstations CORI and Radar INI were occupied. A trainee, who was being monitored by a coach, was sitting at the INI workstation.

The volume of traffic at the workstation was somewhat low. The complexity increased because aircraft were deviating from the published routes because of the storm cells.

Originally, Basle had assigned EZS 1055 a departure route from runway 16, direction south. However, because of storm cells to the south of the aerodrome, the crew requested a take-off from runway 34. In view of the weather situation, and with the consent of Basle APP, EZS 1055 made a right turn over BN, instead of the published left turn according to the standard instrument departure (SID). Because of an area with parachute jumps near Bremgarten (D), Basle APP initially assigned EZS 1055 FL 090. The CORI then coordinated with Zurich Sector West the route direct to waypoint GERSA requested by the crew of EZS 1055 because of the weather situation. The Sector West ATCO then proposed a direct flight to waypoint SOSON. Neither waypoint GERSA nor waypoint SOSON was known to the Basle CORI. He confirmed the direct flight to SOSON with the words "*Thank you very much*".

The ATCO working in the CORI position made the following statement about the procedures: "*We are working according Letter of Agreement. The boundaries between Zurich APP and West Sector are not displayed. A coordination for a flight transit Zurich would be done with Zurich North or West Sector. Only a flight to Zurich would be coordinated with Approach*"

This statement explains the circumstance that the coordination was conducted between three ATC units. Whilst Zurich DEP was coordinating the impending entry of SWR 758 into Basle's area of responsibility directly with Basle CORI, the latter, in so far as the initiative originated with him, conducted the coordination conversations with Sector West in accordance with the LoA. A further complication was the fact that the telephone display at Basle CORI did not always clearly show the unit which was making a call. According to information from the authorised representative of France, it has happened that the caller has been shown on the display only as "Zurich". Basle CORI, who always assumed that he was speaking with Sector West in Zurich, therefore did not realise that he was conducting the first coordination conversation about SWR 758 and EZS 1055 with Zurich DEP. Evidently encouraged by the telephone instructions for EZS 1055, the Basle CORI additionally assumed that SWR 758 was on the Sector West frequency.

The Basle CORI carried out the coordination about EZS 1055 remaining at FL 090 with Sector West. However, the latter had not been informed of the measures arranged between Basle CORI and Zurich DEP. He assumed that FL 090 had been agreed for EZS 1055 between Basle CORI and Zurich DEP. Only when he realised from the radar image that SWR 758 was not continuing its climb and was still at FL 090 did he forward the information received from Basle CORI to Zurich DEP. About 18 seconds elapsed between the end of the conversation between Basle CORI and Sector West and the forwarding of the information to Zurich DEP and this contributed to aggravating the situation.

The circumstance that no coordination procedure is listed in the Letter of Agreement for a flight taking off from Basle and passing through the Zurich APP area of

responsibility into the Sector West area of responsibility considerably affected this serious incident.

The investigation has shown that Basle APP was inadequately informed about the areas of responsibility of the ATC sectors in Zurich.

2.4 Zurich Sector West

Sector West was occupied by a radar executive (RE-W) and a radar planner (RP-W).

The volume of traffic in the sector was low to average. However, complexity was increased as a result of the weather situation. The RE-W had knowledge of a storm cell to the south-west of Zurich and another one south-east of Basle. According to his statements, he was able to monitor the progress of SWR 758 and EZS 1055 almost continuously on the radar monitor. Up until the serious incident occurred, he did not have radio contact with either of the two flights, as these were not yet in his area of responsibility.

After the RP-West had agreed the direct routing of EZS 1055 to SOSON with Basle CORI, and an incursion into the Zurich APP area of responsibility could not be excluded, provision of information to Zurich APP would have been appropriate. The latter would then have informed the DEP ATCO.

When a possible conflict between SWR 758 and EZS 1055 was indicated, the RP-W enquired of CORI in Basle whether he had knowledge of SWR 758. Basle answered in the affirmative and informed him that EZS 1055 was at FL 090 and that SWR 758 could climb. The RP-W agreed with him to hand over EZS 1055 to Sector West at FL 090. At the time, the RP-W could assume that SWR 758 would climb to FL 120 and that the conflict with EZS 1055 flying at FL 090 would therefore soon be resolved. He was unaware of the coordination conversation between Zurich DEP and Basle CORI according to which the climb of SWR 758 was to take place below EZS 1055.

While the RP-W was still coordinating with the Basle CORI, the DEP ATCO asked RE-W whether EZS 1055 would climb further. The RE-W answered that he did not yet have radio contact with the crew of EZS 1055.

When the RP-W had ended the coordination conversation with Basle CORI, he informed his RE about EZS 1055 remaining at FL 090. The RE-W forwarded this information to the DEP ATCO; this can be judged to have been appropriate, as resolution of the conflict had to take place directly between Zurich DEP and Basle APP.

2.5 Coordination

Zurich DEP, Basle APP and Zurich Sector West were involved in the coordination of flights SWR 758 and EZS 1055. It took place under considerable pressure of time, and this grew as the incident escalated. Rather mor re than two and a half minutes elapsed between the first conversation between Zurich DEP and Basle CORI and the time of the incident. Basle APP and Zurich Sector West had a coordinator, whilst Zurich DEP generally had to handle this work in addition to the executive function.

Some radio and coordination conversations took place simultaneously. Thus a fairly long conversation took place between Basle CORI and the RP-W, from which it emerged that EZS 1055 would remain at FL 090. At the same time, Zurich DEP asked the RE-W whether EZS 1055 was already on his frequency. The RE-W answered in the

negative and at the same time gave the correct latest information he had, i.e. that EZS 1055 would climb to FL 110.

Likewise in parallel with the coordination conversation between Basle CORI and the RP-W concerning the immediate climb by SWR 758, Basle Radar INI gave the clearance for EZS 1055 to climb to FL 110.

In the final phase of convergence, the Zurich DEP and Basle APP ATCOs found themselves in a similar situation. Both were monitoring the flight paths and altitudes of SWR 758 and EZS 1055 on the radar monitor. Zurich DEP was waiting for EZS 1055, as coordinated with him, to climb to FL 110, whilst Basle APP was expecting SWR 758, as the CORI had agreed with the RP-West, to leave FL 090 and continue its climb. However, when both aircraft remained at FL 090, there was an urgent need for action by the ATCOs. Not only were the two aircraft at the same flight level, they were also on opposite headings and were only about 7 NM away from each other. At this moment, Zurich DEP received the information from the RE-W that EZS 1055 would remain at FL 090, upon which he instructed SWR 758 to climb immediately to FL 110. In Basle, the Radar INI ATCO could also no longer wait and for his part allowed EZS 1055 to climb to FL 110. He did this in ignorance of the conversation which had taken place at the same time between the Basle CORI and the RP-W, in which the CORI ascertained from the RP-W that SWR 758 was climbing.

The fact that the two aircraft were on different frequencies made things more difficult. An early transfer of the aircraft to one of the control sectors would most probably have prevented the serious incident.

2.6 Other measures by the ATC units

In view of the weather situation, Zurich DEP and Basle INI were correctly concentrating on resolving the impending conflict by ensuring vertical separation. In addition, both ATC units also attempted to establish lateral separation. At 15:25:48 UTC, Zurich DEP gave the instruction to SWR 758 to turn left onto heading 250. At 15:27:14 UTC, Zurich DEP tried again to turn SWR 758 further to the left onto heading 180. At this time, however, the crew of SWR 758 had established visual contact with EZS 1055. The crew, when asked by the ATCO whether they could maintain their own separation, confirmed that they could.

At 15:25:51 UTC, Basle Radar INI instructed EZS 1055 to turn onto heading 180. Since Zurich DEP had turned SWR 758 onto heading 250 at almost the same time, the two aircraft continued to converge and Basle Radar INI shortly afterwards gave the instruction to EZS 1055 to continue turning, onto heading 360.

The STCA alert was triggered in Zurich at the Sector West and DEP workstations and began at 15:26:26 UTC, shortly after SWR 758 had turned onto heading 250 and EZS1055 had started to make a right turn onto heading 180. The Zurich DEP ATCO had already recognised the conflict and initiated the necessary measures. Therefore, according to the ATCO's statement, the alert did not influence his actions. After receiving the STCA alert, Sector West had no possibility of intervening in the situation. He was not in contact with either aircraft and was not informed of the measures taken by Zurich DEP and Basle APP.

The STCA at the workstation in Basle APP was in a test phase. However, after the first telephone conversation with Zurich DEP, the ATCOs had recognised the potential conflict.

According to the RP-W's statement, in the final phase of the conflict he received a telephone call from Reims ATC which also made him aware of the problem. However, the conversation had no further influence on the event.

2.7 ACAS II / TCAS

The ACAS II is the final safety net, intended to prevent a collision after the failure of all other possibilities of separating aircraft in flight. The TCAS information or instructions to flight crews occur in a three-stage procedure: in the first phase of a conflict, the symbol of the conflicting aircraft is conspicuously displayed to the crew (proximity). in the second phase, a traffic advisory is issued visually and aurally, i.e. the conflicting aircraft is displayed in amber on the TCAS display and an aural 'traffic traffic' warning sounds in the cockpit. In the third phase, the conflicting aircraft is shown in red and the crew are instructed both aurally and visually to assume a vertical flight path which leads to a resolution of the situation.

The TCAS installations in both the aircraft involved were equipped with software version 7.0, which was current at the time of the incident. None of the crews reported any technical problems with the TCAS installations.

ACAS II calculates the time to the closest point of approach (CPA) of the two aircraft. Depending on the altitude band in which an incident occurs, ACAS II uses different threshold values, termed sensitivity levels, to issue traffic advisories or resolution advisories. The sensitivity levels extend from 2 to 7. The present case took place in the altitude band between 5000 ft and 10,000 ft, corresponding to sensitivity level 5. At this sensitivity level, a traffic advisory is triggered when the projection of the flight paths of the aircraft concerned, calculated by the TCAS computers on a second-by-second basis, means that within 40 seconds both a lateral convergence of ≤ 0.75 NM and a vertical convergence of ≤ 850 ft will occur. In the present case, a traffic advisory was issued on both aircraft. In the event of a further escalation of convergence, according to the ACAS II logic a resolution advisory would have been issued 25 seconds before the CPA, i.e. before the time at which the lateral separation would have been ≤ 0.55 NM and the altitude difference ≤ 350 ft.

In the final phase, the instructions of the Zurich DEP and Basle APP ATCOs made it possible to resolve the conflict in such a way that no resolution advisory was issued.

3. Conclusions

3.1 Findings

- SWR 758 was flying according to instrument flight rules and was in contact with Zurich Departure on 125.95 MHz.
- EZS 1055 was flying according to instrument flight rules and was in contact with Basle Approach on 118.575 MHz.
- There was a fairly large thunderstorm cell in the Olten-Liestal region and a smaller cell in the Koblenz region.

- Because of the thunderstorm cells, according to the information from the ATCOs concerned, complexity at the Zurich DEP, Basle APP and Sector West workstations was high.

- By agreement with Zurich Departure, SWR 758 flew around the storm cell on a flight path to the north of the published departure route.

- By arrangement with Basle APP, EZS 1055 chose a flight path to the east of Basle aerodrome because of thunderstorm cells.

- Zurich DEP did not inform Sector West about SWR 758's deviation from the departure route.

- Basle APP always assumed that SWR 758 was on the Zurich West frequency.

- The Basle APP telephone display did not always display the calling unit unambiguously.

- Sector West did not inform Zurich APP about the direct routing of EZS 1055 to SOSON.

- Basle APP had no flight plan data for SWR 758 and was not informed accurately about the planned flight path.

- Zurich DEP had no flight plan data for EZS 1055 and was not informed accurately about the planned flight path.

- At 15:21:37 UTC, Basle Radar INI cleared EZS 1055 to climb to FL 090.

- At 15:24:24 UTC Zurich DEP cleared SWR 758 to climb from 7000 ft to FL 120.

- At 15:24:27 UTC, Zurich DEP informed Basle CORI of the position and altitude of SWR 758 and agreed with him to climb EZS 1055 to FL 110 and SWR 758 to climb to FL 100.

- At 15:24:58 UTC, Zurich DEP countermanded the clearance given to SWR 758 to climb to FL 120 and instructed it to stop climbing at FL 100 and shortly afterwards at FL 090.

- At 15:25:18 UTC, the RP-West asked Basle CORI whether he was aware of SWR 758. Basle answered in the affirmative and informed him that EZS 1055 was stabilised at FL 090 and was on heading 110. Basle again mentioned that SWR 758 could continue climbing.

- At 15:25:33 UTC, Zurich DEP asked the RE-W whether EZS 1055 was on his frequency and continuing to climb. The latter answered that EZS 1055 was not yet on his frequency.

- At 15:26:04 UTC, the RE-W informed the DEP ATCO that EZS 1055 would be maintaining FL 090. The latter answered that he was giving clearance to SWR 758 to climb.

- At 15:26:07 UTC, Zurich DEP instructed SWR 758 to climb immediately ("*climb immediately, climb immediately*") from FL 090 to FL 110.

- At 15:26:10 UTC, Basle CORI asked the RP-W to make SWR 758 climb immediately ("*climb it, climb it immediately*").

- At 15:26:13 UTC, Basle Radar INI instructed EZS 1055 to climb from FL 090 to FL 110.

- At 15:26:37, Basle Radar INI countermanded the climb clearance to EZS 1055 and instructed the crew to descend to FL 090 (*immediately, avoiding action*). According to the radar recording, the aircraft reached a maximum flight level of FL 103.

- The incident occurred directly at the boundary of the areas of responsibility of Zurich APP, Basle APP and Sector West.

- At the time of the incident, Sector West did not have radio contact either with SWR 758 or EZS 1055.

- No coordination procedure for a flight taking off from Basle and passing through the area of responsibility of Zurich APP into the Sector West area of responsibility is listed in the Letter of Agreement.

- The TCAS in SWR 758 generated a TA advisory, after which the crew were able to establish visual contact with EZS 1055.

- The TCAS in EZS 1055 generated a TA advisory. However, the crew were unable to establish visual contact with SWR 758.

- At 15:27:14 UTC, according to the radar recording, the minimum lateral separation between SWR 758 and EZS 1055 was measured at 1.8 NM. The altitude difference was 500 ft.

3.2 Cause

The serious incident is attributable to incomplete coordination procedures in the Letter of Agreement Basle APP – Zurich ATC, leading to an inappropriate procedure in coordination between the ATC units concerned.

4. Safety recommendation

4.1 Safety deficit

On the afternoon of 10 September 2005, the Swiss International Air Lines Embraer ERJ145, flight number SWR 758, took off on a scheduled flight from Zurich to Luxembourg. The scheduled departure route was via VEBIT – LASUN – TORPA. In order to avoid a thunderstorm cell, the crew deviated in accordance with Zurich ATC from the published flight path and flew in a north-westerly direction.

In Basle at approximately the same time, an A319, flight number EXS 1055, had taken off from runway 34 on a scheduled flight to Rome-Ciampino. After taking off, in order to avoid a storm cell, the crew initiated in accordance with Zurich ATC a right turn onto heading 110°.

Since SWR 758's entry into the Basle APP area of responsibility was indicated, Zurich DEP informed the air traffic controller in Basle of the position and altitude of SWR 758. The latter, for his part, referred to EZS 1055, which the Zurich DEP ATCO could see on his radar monitor.

Both aircraft were subsequently to be transferred to Sector West, for their continued climbs.

Coordination was conducted between the three ATC units of Basle APP, Zurich DEP and Zurich Sector West.

The coordination and transfer procedures between Basle and Zurich are prescribed in the "Letter of Agreement (LoA) BASLE APP – ZURICH ATC". No procedures are listed in the LoA for flights which deviate from the standard routes.

This led to an inappropriate procedure in the coordination between the ATC units concerned. As a result, the minimum radar separation between SWR 758 and EZS 1055 was violated. To prevent a collision, the air traffic controllers had to issue instructions to the crews under great pressure of time.

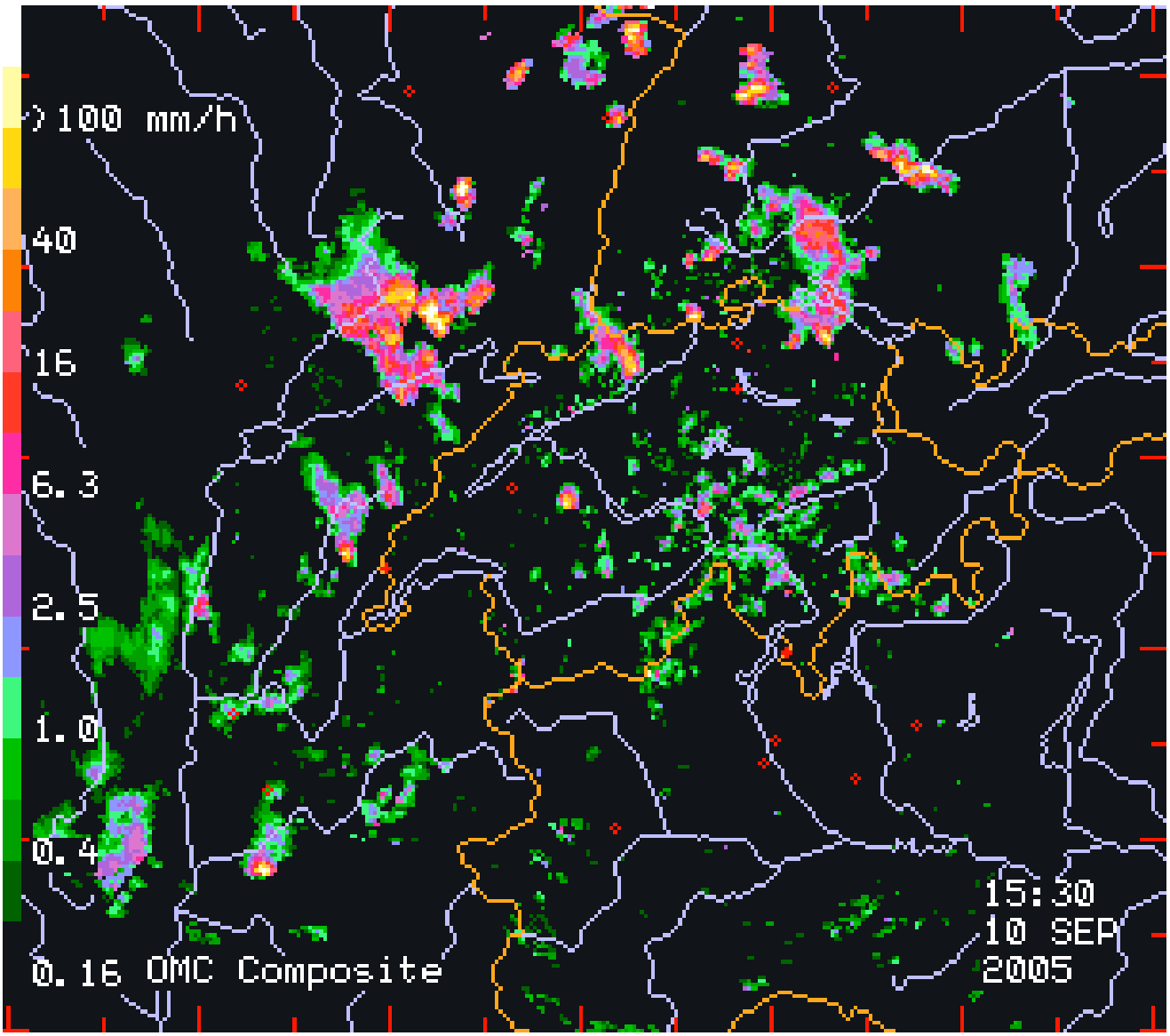
According to the radar recording, the two aircraft converged to a lateral separation of 1.8 NM and an altitude difference of 500 ft.

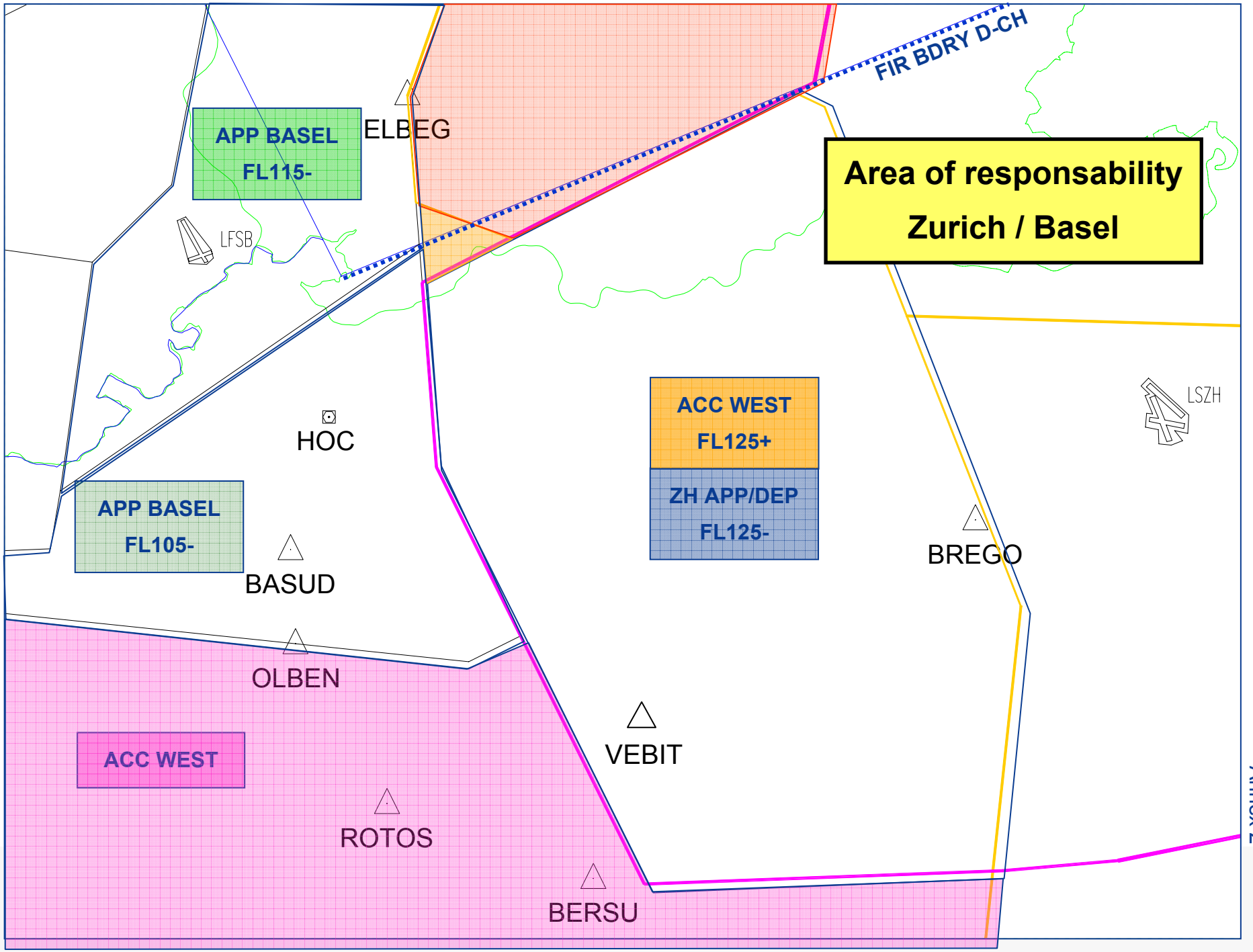
4.2 Safety recommendation No. 391

The Federal Office for Civil Aviation should arrange for the coordination procedures between Zurich ATC and Basle APP to be examined.

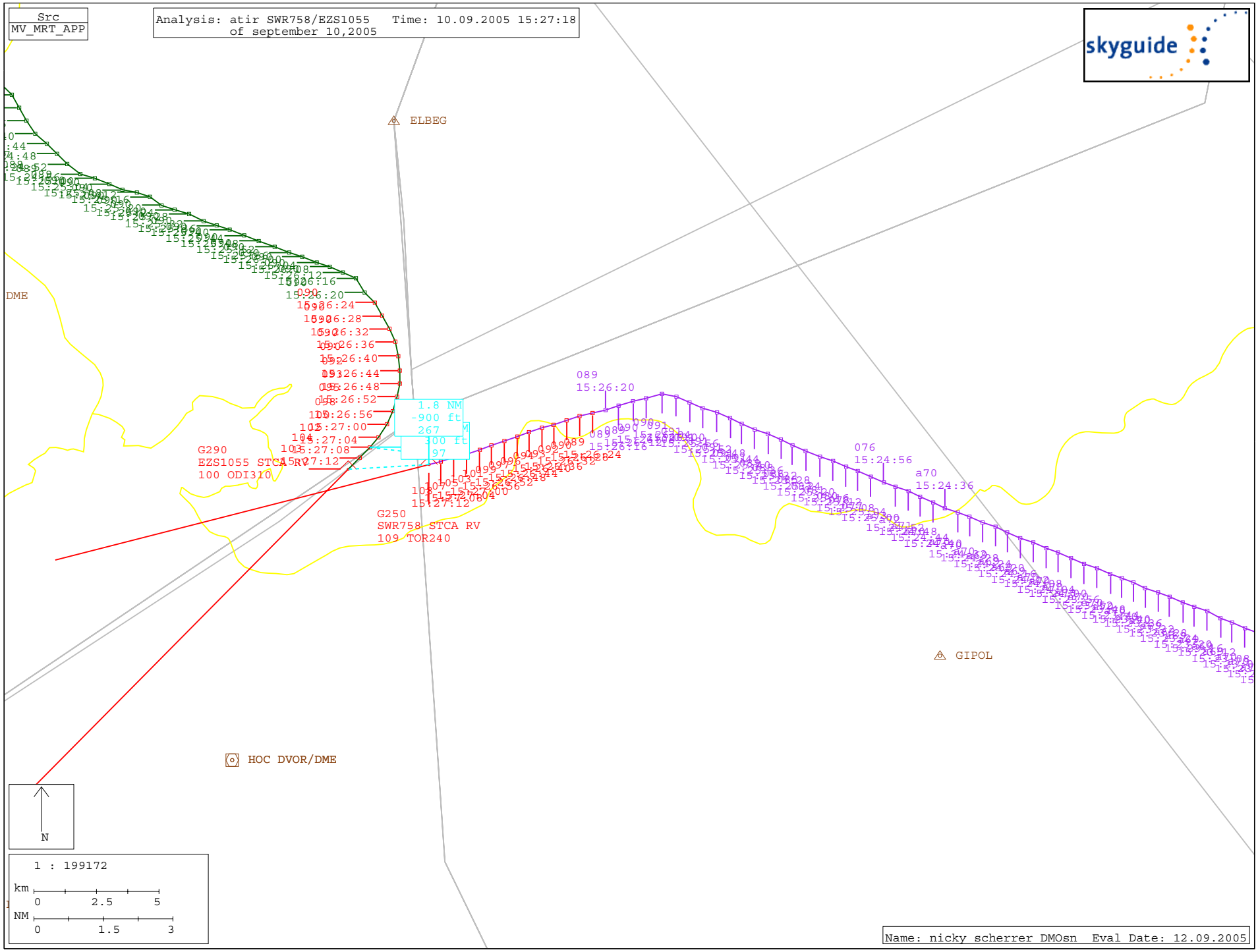
Bern, 17 December 2007 Aircraft Accident Investigation Bureau

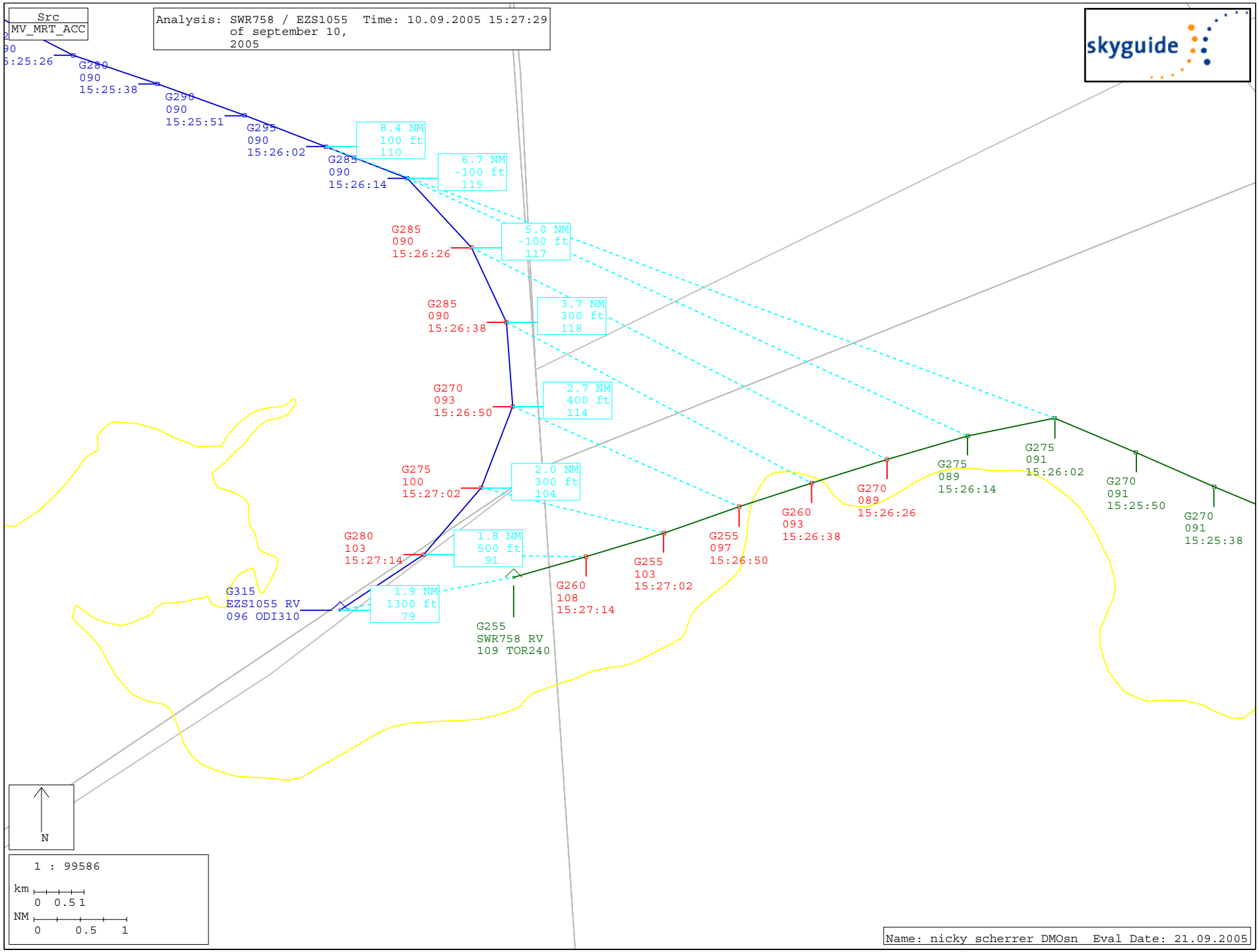
Radar picture on 10.09.2005, 1530 UTC




FIR BDRY D-CH
Area of responsability
Zurich / Basel
APP BASEL
FL115-
ELBEG
LFSB
HOC
ACC WEST
FL125+
ZH APP/DEP
FL125-
LSZH
APP BASEL
FL105-
BASUD
BREGO
OLBEN
VEBIT
ACC WEST
ROTOS
BERSU

Annex 2


Src
MV_MRT_APP
Analysis: atir SWR758/EZS1055 Time: 10.09.2005 15:27:18
of september 10,2005
skyguide
ELBEG
DME
1.8 NM
-900 ft
267
100 ft
197
G290
EZS1055 STCA RV
100 ODI310
G250
SWR758 STCA RV
109 TOR240
089
15:26:20
076
15:24:56
a70
15:24:36
GIPOL
HOC DVOR/DME
N
1 : 199172
km
0
2.5
5
NM
0
1.5
3
Name: nicky scherrer DMOsn Eval Date: 12.09.2005


Src
MV_MRT_ACC
Analysis: SWR758 / EZS1055 Time: 10.09.2005 15:27:29
of september 10,
2005
skyguide
G280
090
15:25:38
G290
090
15:25:51
G295
090
15:26:02
8.4 NM
100 ft
110
G285
090
15:26:14
6.7 NM
-100 ft
115
G285
090
15:26:26
5.0 NM
-100 ft
117
G285
090
15:26:38
3.7 NM
300 ft
118
G270
093
15:26:50
2.7 NM
400 ft
114
G275
100
15:27:02
2.0 NM
300 ft
104
G280
103
15:27:14
1.8 NM
500 ft
91
G315
EZS1055 RV
096 ODI310
1.9 NM
1300 ft
79
G255
SWR758 RV
109 TOR240
G260
108
15:27:14
G255
103
15:27:02
G255
097
15:26:50
G260
093
15:26:38
G270
089
15:26:26
G275
089
15:26:14
G275
091
15:26:02
G270
091
15:25:50
G270
091
15:25:38
N
1 : 99586
km
0 0.5 1
NM
0 0.5 1
Name: nicky scherrer DMOsn Eval Date: 21.09.2005

TRANSCRIPT OF TELEPHONY

OR RADIOTELEPHONY COMMUNICATION TAPE-RECORDINGS

Investigation into the **incident** that occurred on **10.09.2005**

- Subject of transcript:	**SWR758 / EZS1055**
- Centre concerned:	Swiss Radar Area East
- Designation of unit:	Zurich Departure
- Frequency / Channel:	125.95 MHz
- Date and period (UTC) covered by attached extract:	10.09.2005 15:19-15:28 UTC
- Date of transcript:	15.09.2005
- Name of official in charge of transcription:	

- Certificate by official in charge of transcription:

I hereby certify:

- That the accompanying transcript of the telephony or radiotelephony communication tape-recordings, retained at the present time in the premises of the Analysis Department, has been made, examined and checked by me.
- That no changes have been made to the entries in columns 2, 3 and 4, which contain only clearly understood indications in their original form.

Zürich, 15.09.2005

Abbreviations

Sector		Designation of sector
DEP	-	Zurich Departure

Aircraft	-	Callsign	Type of acft	Flight rules	ADEP	-	ADES
758	**-**	**SWR758 (Swiss)**	**E145**	**IFR**	**LSZH**	**-**	**ELLX**
978	-	SWR978	RJ1H	IFR	LSZH	-	EDDT
190B	-	SWR190B	RJ1H	IFR	LSZH	-	EDDN
1352	-	SWR1352	E145	IFR	LSZH	-	EPWA
076D	-	SWR076D	RJ1H	IFR	LSZH	-	EDDF
74PE	-	SWR74PE	DH8C	IFR	LSZH	-	LSZA
1732	-	SWR1732	A321	IFR	LSZH	-	LIRF

DMOsn / 15.09.2005

To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5

Frequency: Zurich Departure 125.95 MHZ (and telephones in time sequence)

DEP	**758**	**15:19:25**	**Departure, "Grüezi", Swiss seven five eight, passing three thousand four hundred climbing five thousand and request runway heading to avoid**
758	DEP	:34	Swiss seven five eight, Departure, "Grüezi", identified, approved, climb to six thousand feet
DEP	**758**	**:39**	**Climbing six thousand feet on runway heading, Swiss seven five eight**
758	DEP	:44	Swiss seven five eight, report able to turn to VEBIT
DEP	**758**	**:46**	**Copied, Swiss seven five eight**
978	DEP	:50	Swiss niner seven eight, contact Radar one three three decimal niner, "Adie"
DEP	978	:52	one three three niner, Swiss niner seven eight, "Ade"
758	DEP	:20:07	Swiss seven five eight, climb to seven thousand feet
DEP	**758**	**:10**	**Climbing seven thousand feet, Swiss seven five eight, if possible, like to continue the runway heading for the next thirty miles**
758	DEP	:18	So, you are unable for left turn?
DEP	**758**	**:20**	**Affirm, Swiss seven five eight**
758	DEP	:21	Maintain seven thousand feet for the next twenty miles, then
DEP	**758**	**:25**	**Okay, maintain seven thousand feet for the next twenty miles, Swiss seven five eight**
758	DEP	:28	Due to traffic above
DEP	**758**	**:30**	**Roger**
DEP	190B	:52	Departure, "Guete Abe", Swiss one niner zero Bravo, passing two niner climbing to five thousand feet
190B	DEP	:58	Swiss one niner zero Bravo, Departure, "Grüezi", identified, climb to six thousand feet

To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
DEP	190B	15:21:01	Climbing six thousand, Swiss one niner zero Bravo	
DEP	**758**	**:06**	**And, Swiss seven five eight, request heading two niner zero to avoid**	
758	DEP	:08	Roger, approved	
DEP	**758**	**:09**	**Okay**	
DEP	1352	:22:04	Zurich Departure, Good Day, Swiss one three five two, three thousand five hundred for five thousand feet	
1352	DEP	:10	Swiss one three five two, "Grüezi", identified, climb to flight level one two zero	
DEP	1352	:14	Level one two zero, Swiss one three five two	
190B	DEP	:23	Swiss one niner zero Bravo, turn left direct to DEGES	
DEP	190B	:26	Left to DEGES, Swiss one nine zero Bravo	
758	DEP	:30	Swiss seven five eight, traffic will be ten o'clock position, range six miles, crossing left to right, one thousand feet above, there	
DEP	**758**	**:36**	**"äh", copied, Swiss seven five eight, looking out**	
1352	DEP	:23:01	Swiss one three five two, are you passing five thousand now?	
DEP	1352	:02	Affirm, one three five two	
1352	DEP	:04	Roger, turn right to DEGES	
DEP	1352	:05	Right to DEGES, one three five two	
DEP	076D	:09	Departure, "Guete Abig", Swiss zero seven six Delta, two thousand seven hundred feet climbing to five thousand feet	
076D	DEP	:23:16	Swiss zero seven six Delta, "Grüezi", identified, maintain five thousand feet	
DEP	076D	:19	Maintaining five thousand feet, reaching, Swiss zero seven six Delta	
758	DEP	:24	Swiss seven five eight, the traffic is now ten o'clock position, range four miles	

TRANSCRIPT SHEET

Occurrence: SWR758 / EZS1055 of 10.09.2005

To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
DEP	**758**	**15:23:27**	**"jo", we have it on the TCAS, Swiss seven five eight**	
758	DEP	:29	Roger	
DEP	1352	:36	Swiss seven three five two, request heading one two zero to avoid	Says seven three five two
1352	DEP	:38	Swiss one three five two, approved	
DEP	1352	:40	Thank you	
DEP	**758**	**:43**	**And the traffic is in sight now, Swiss seven five eight**	
758	DEP	:45	Thank you	
758	DEP	:24:24	Swiss seven five eight, clear of traffic, climb to flight level one two zero	
DEP	**758**	**:28**	**Climbing to flight level one two zero, Swiss seven five eight**	
DEP	74PE	:32	Zurich Departure, "Schönen Guten Abend", Swiss seven four Papa Echo, passing two thousand eight hundred, climbing five thousand on departure	
076D	DEP	:41	Stand by, Swiss seven six Delta, climb to flight level one two zero	
DEP	076D	:46	Climbing to flight level one two zero, Swiss seven six Delta	
758	DEP	:58	Swiss seven five eight, stop climb at flight level one zero zero	
DEP	**758**	**:25:04**	**Recleared flight level one zero zero, Swiss seven five eight**	
1352	DEP	:07	Swiss one three five two, able for a left turn again?	
DEP	1352	:10	Affirm, one three five two, we could proceed to DEGES	
1352	DEP	:12	Roger, turn left to DEGES	
DEP	1352	:15	Left to DEGES, one three five two	
758	DEP	:22	Swiss seven five eight, stop climb flight level niner zero	
DEP	74PE(?)	:26	XXX, passing three thousand climbing five thousand on	Blocked out

Signature of person
in charge of transcription :

To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
			departure	
758	DEP	15:25:28	Swiss seven five eight, stop climb flight level niner zero	
DEP	**758**	**:30**	**Recleared niner zero, Swiss seven five eight**	
DEP	190B	:33	Swiss one niner zero Bravo, requesting heading one hundred for a short while to avoid	
?	DEP	:40	Swiss	
DEP	190B	:41	Swiss one niner zero Bravo, request flight level one zero zero for a short while to avoid	Says flight level
758	DEP	:45	Swiss seven five eight, turn immediately left, left heading two five zero	
DEP	**758**	**:48**	**Left heading two five zero, Swiss seven five eight**	
190B	DEP	:53	Stand by, swiss one niner zero Bravo, stop climb flight level one zero zero	
DEP	190B	:57	We are still six thousand, Swiss one niner zero Bravo	
190B	DEP	:26:00	Swiss one niner zero Bravo, climb flight level eight zero	
DEP	190B	:01	Climbing flight level eight zero, Swiss one niner zero Bravo, and requesting heading one hundred to avoid	
758	DEP	:07	Swiss seven five eight, climb immediately, climb immediately flight level one one zero	
DEP	**758**	**:10**	**Climbing one one zero, Swiss seven five eight**	
DEP	74PE	:14	Seven four Papa Echo, airborne, "Grüezi"	
758	DEP	:15	Swiss seven five eight, traffic straight ahead niner zero, expedite climb please	
DEP	**758**	**:20**	**Climbing, climbing seven five eight**	
190B	DEP	:22	Swiss one niner zero Bravo, climb to flight level one one zero	
DEP	190B	:24	Climbing to flight level one one zero, Swiss one niner zero Bravo, requesting heading one hundred to avoid	
758	DEP	:30	Swiss seven five eight, are you leaving niner zero?	

TRANSCRIPT SHEET

Occurrence: SWR758 / EZS1055 of 10.09.2005

To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
DEP	**758**	**15:26:31**	**Roger, we are climbing, expediting**	
758	DEP	:33	Roger, thank you	
74PE	DEP	:35	Swiss seven four Papa Echo, maintain five thousand feet	
DEP	74PE	:39	Maintaining five thousand, Swiss seven four Papa Echo	
DEP	190B	:43	And Swiss one hundred*, request heading one hundred to avoid	Say swiss one hundred
190B	DEP	:46	Swiss one niner zero Bravo, approved	
758	DEP	:49	Swiss seven five eight, expedite level one one zero, expedite climb until level one one zero	
DEP	**758**	**:53**	**Yes, we have three thousand five hundred feet per minute and the aircraft is in five and turning on the left of ours**	
758	DEP	:27:00	Roger	
758	DEP	:04	Swiss seven five eight, traffic at your right hand side now, one hundred climbing	
DEP	**758**	**:06**	**Ya, we have it in sight**	
758	DEP	:14	Seven five eight, turn left heading one eight zero	
DEP	**758**	**:17**	**Left one eight zero, Swiss seven five eight, - if possible, we'd prefer to turn right, Swiss seven five eight**	
758	DEP	:23	Roger, can you maintain own separation to the other one?	
DEP	**758**	**:27**	**Affirm, Seven five eight**	
758	DEP	:28	Roger, appreciate	
1352	DEP	:39	Swiss one three five two, contact Radar one three three decimal niner	
DEP	1352	:41	Three three decimal niner, Swiss one three five two	
74PE	DEP	:46	Swiss seven four Papa Echo, climb to flight level one two zero	
DEP	74PE	:48	Climbing one two zero, Swiss seven four Papa Echo	

Signature of person
in charge of transcription :

To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
190B	DEP	15:27:50	Swiss one niner zero Bravo, maintain level one one zero, cleared to DEGES, if you can	
DEP	190B	:54	Roger, we're able now towards DEGES again and maintaining flight level one one zero, reaching, Swiss one, Swiss one niner zero Bravo	
758	DEP	:28:01	Swiss seven five eight, climb to flight level two four zero	
DEP	**758**	**:05**	**Climbing level two four zero, Swiss seven five eight**	
758	DEP	:07	Swiss seven five eight, what heading can you fly?	
DEP	**758**	**:11**	**Any heading to the right, Swiss seven five eight**	
758	DEP	:14	Roger, any heading approved to the right, climb level two four zero	
DEP	**758**	**:18**	**Climbing two four zero and turning right on heading three hundred, Swiss seven five eight**	
758	DEP	:22	Roger	
DEP	1732	:25	Departure, "Grüezi", Swiss one seven three two is four thousand climbing five thousand	
1732	DEP	:30	Seven three, Swiss one seven three two, identified	
190B	DEP	:33	Swiss one niner zero Bravo climb to flight level one two zero	
DEP	190B	:35	Climb to flight level one two zero, Swiss one nine zero Bravo	
190B	DEP	:38	Swiss one niner zero Bravo, contact Radar one three three decimal niner	
DEP	190B	:43	One three three nine, bye bye, Swiss one nine zero Bravo	
758	DEP	:44	Swiss seven five eight, could you say me the heading again, please?	
DEP	**758**	**:47**	**Ah, we have now heading two seven zero, Swiss seven five eight**	
758	DEP	:51	Roger, approved, report your heading on Radar one three four decimal four	

TRANSCRIPT SHEET

Occurrence: SWR758 / EZS1055 of 10.09.2005

To	From	Time	Communications	Observations
Col.1	Col.2	Col.3	Col.4	Col.5
DEP	**758**	**15:28:56**	**One three four decimal four, Swiss seven five eight, good bye**	

- end -

Signature of person
in charge of transcription :

TRANSCRIPTION DE COMMUNICATIONS RADIOTELEPHONIQUES ET TELEPHONIQUES

EVENEMENT : AIRPROX ATC DU 10 / 09 / 2005 **AERONEFS EZS1055 SWR758**	**INCA: 701**
POSITION / FREQUENCES : ITM / 118,57	

Station émettrice	Station réceptrice	Heure Utc	Communications	Observations
EZS1055	Bâle APP	15 21 30	Bâle approach ,bonjour Top Swiss 1 0 5 5 passing altitude 2 thousand 4 hundred feet climbing 7 thousand feet	
Bâle APP	EZS1055	15 21 37	Top Swiss1 0 5 5 bâle approach good day ,radar identified ,climb flight level 9 0 initially	
EZS1055	Bâle APP	15 21 42	flight level 9 0 Top Swiss 1 0 5 5	
Bâle APP	EZS1055	15 22 03	Top Swiss 1 0 5 5 bâle	
EZS1055	Bâle APP	15 22 05	go ahead for 1 0 5 5	
Bâle APP	EZS1055	15 22 07	Top Swiss 1 0 5 5 ,according to weather ???? Left turn or right turn to BASUD	
EZS1055	Bâle APP	15 22 13	request right turn to GERSA to avoid the weather Top Swiss 1 0 5 5	
Bâle APP	EZS1055	15 22 19	Top Swiss 1 0 5 5 ,copied I call you back for right turn	
EZS1055	Bâle APP	15 22 23	right turn to GERSA I call you back romeo sierra alpha	
Bâle APP	EZS1055	15 22 27	golf echo and say again the rest of the point	
EZS1055	Bâle APP	15 22 31	golf echo romeo sierra alpha GERSA	
Bâle APP	EZS1055	15 22 34	roger Top Swiss 1 0 5 5 ,I call you back stand by	
EZS1055	Bâle APP	15 22 39	roger standing by	
		15 22 41	communication avec DEKMC 12 secondes	
Bâle APP	EZS1055	15 22 58	Top Swiss 1 0 5 5 turn right heading 1 5 0	
EZS1055	Bâle APP	15 23 01	turning right 1 5 0 Top Swiss 1 0 5 5	
		15 23 07	communication avec DEKMC 19 secondes	

TRANSCRIPTION DE COMMUNICATIONS RADIOTELEPHONIQUES ET TELEPHONIQUES

EVENEMENT : AIRPROX ATC DU 10 / 09 / 2005 AERONEFS EZS1055 SWR758	INCA: 701
POSITION / FREQUENCES : ITM / 118,57	

Station émettrice	Station réceptrice	Heure Utc	Communications	Observations
		15 23 30	communication avec SWR 167 17 secondes	
Bâle APP	EZS1055	15 24 19	Top Swiss 1 0 5 5 ,according to weather would you be OK direct SOSON sierra oscar sierra oscar november	
EZS1055	Bâle APP	15 24 28	stand by	
		15 24 38	communication avec DEKMC 10 secondes	
EZS1055	Bâle APP	15 24 50	Top Swiss 1 0 5 5 negative for SOSON ,request left heading 1 1 0 to avoid and if possible then GERSA	
Bâle APP	EZS1055	15 24 58	Top Swiss 1 0 5 5 left turn heading 1 1 0 approved	
EZS1055	Bâle APP	15 25 01	left turn heading 1 1 0 Top Swiss 1 0 5 5 and flight level 9 0	
EZS1055	Bâle APP	15 25 26	Top Swiss 1 0 5 5 we could accept SOSON if we could to climb to get out of the weather	
Bâle APP	EZS1055	15 25 33	Top Swiss 1 0 5 5 traffic information at twelve o'clock seven miles traffic an airbus with zurich it's euh same altitude climbing maintain flight level 9 0	
EZS1055	Bâle APP	15 25 44	roger looking out maintaining flight level 9 0 Top Swiss 1 0 5 5	
Bâle APP	EZS1055	15 25 51	Top Swiss 1 0 5 5 turn right heading 1 8 0 for avoiding action	
EZS1055	Bâle APP	15 25 56	Top Swiss 1 0 5 5 right heading 1 8 0 but ??? for a short time	
Bâle APP	EZS1055	15 26 03	roger but immediatly turn right heading 1 8 0 traffic at 12 o'clock 4 miles opposite direction same altitude	
EZS1055	Bâle APP	15 26 09	roger turning right heading 1 8 0 Top Swiss 1 0 5 5 keep for 7 miles	

TRANSCRIPTION DE COMMUNICATIONS RADIOTELEPHONIQUES ET TELEPHONIQUES

EVENEMENT : AIRPROX ATC DU 10 / 09 / 2005 AERONEFS EZS1055 SWR758	INCA: 701
POSITION / FREQUENCES : ITM / 118,57	

Station émettrice	Station réceptrice	Heure Utc	Communications	Observations
Bâle APP	EZS1055	15 26 13	Top Swiss 1 0 5 5 continue right turn heading 3 6 0 ,climb flight level 1 1 0	une voix dit "non non" en arrière plan
EZS1055	Bâle APP	15 26 16	right turn heading 3 6 0 climbing flight level 1 1 0 Top Swiss 1 0 5 5	
		15 26 31	communication avec SWR167 2 secondes	
Bâle APP	EZS1055	15 26 37	Top Swiss 1 0 5 5 don't climb don't climb I confirm don't climb the traffic is at your 11 o'clock 3 miles left to right 6 hundred feet above climbing	Voix du moniteur
EZS1055	Bâle APP	15 26 51	Top Swiss 1 0 5 5 we are just ??? flight level 1 1 0 you want us to stop the climb now Top Swiss 1 0 5 5	
Bâle APP	EZS1055	15 26 58	affirm Sir affirm descend flight level 9 0 immediatly avoiding action the traffic is at your 9 o'clock 2 miles left to right climbing is passing flight level 1 0 5 climbing	
EZS1055	Bâle APP	15 27 10	roger we're descending flight level 9 0 EZS 1 0 5 5	
		15 27 17	communication avec TAR 8211 13 secondes	
		15 27 31	communication avec SWR 2167 7 secondes	
		15 27 56	communication avec SWR 2167 10 secondes	
Bâle APP	EZS1055	15 28 07	Top Swiss 1 0 5 5 very sorry for this so now you are cleared of traffic fly heading 1 1 0 euh maintain level 9 0	
EZS1055	Bâle APP	15 28 16	roger ,we continue our right turn on heading 1 1 0 and maintaining flight level 9 0 Top Swiss 1 0 5 5	

TRANSCRIPTION DE COMMUNICATIONS RADIOTELEPHONIQUES ET TELEPHONIQUES

EVENEMENT : AIRPROX ATC DU 10 / 09 / 2005 **AERONEFS EZS1055 SWR758**	**INCA: 701**
POSITION / FREQUENCES : ITM / 118,57	

Station émettrice	**Station réceptrice**	**Heure Utc**	**Communications**	**Observations**
Bâle APP	EZS1055	15 28 22	Top Swiss 1 0 5 5 ,just to confirm the situation the aircraft was in conflict with Zurich in Zurich airspace he was supposed to climb flight level 1 hundred when you were flight level 9 0 and I've just a trainee with me that gave you 1 1 0 but it was an error	
EZS1055	Bâle APP	15 28 42	Top Swiss 1 0 5 5 it's OK with us no problem	
Bâle APP	EZS1055	15 28 47	roger Sir contact Zurich 1 3 5 décimal 6 7 good bye	
EZS1055	Bâle APP	15 28 52	1 3 5 6 7 au revoir and again it's OK with us no problem Top Swiss 1 0 5 5	
Bâle APP	EZS1055	15 28 59	roger thank you Sir	

La présente transcription comporte 4 pages

La durée de la transcription est de 7 minutes et 30 secondes.

Fait à Saint-Louis, le 19/10/2005