



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Büro für Flugunfalluntersuchungen BFU
Bureau d'enquête sur les accidents d'aviation BEAA
Ufficio d'inchiesta sugli infortuni aeronautici UIIA
Uffizi d'investigaziun per accidents d'aviatica UIAA
Aircraft accident investigation bureau AAIB

Final Report No. 1918 by the Aircraft Accident Investigation Bureau

concerning the serious incident (airprox)

between ECA 923, 5B-DBW

and SPW 35A, HB-VNA

on 16 July 2005

36 NM south of KLO DVOR

Bundeshaus Nord, CH-3003 Berne

Final Report

This report has been prepared solely for the purpose of accident/incident prevention. The legal assessment of accident/incident causes and circumstances is no concern of the incident investigation (Art. 24 of the Air Navigation Law). The masculine form is used in this report regardless of gender for reasons of data protection.

Place/date/time Zurich, 36 NM south of Kloten, 16.07.2005, 09:47 UTC

Aircraft ECA 923, Boeing 737-800, 5B-DBW, Eurocypria Airlines Ltd.
Basel (LFSB) – Larnaka (LCLK)
SPW 35A, Cessna 560 Citation V Ultra, HB-VNA, Speedwings S.A.
Iraklion (LGIR) – Zurich (LSZH)

Crews	ECA 923	CMDR
		FO
	SPW 35A	CMDR
		FO

ATC unit Zurich Area Control Centre

Air traffic controllers Radar Executive South (RE-S)
Radar Planning South (RP-S)
Radar Executive Upper (RE-U)
Radar Planning Upper (RP-U)

Airspace C

1. History

1.1 History of the flight

On Saturday, 16 July 2005, the crew of ECA 923 made preparations shortly before midday in Basel for a scheduled flight to Larnaka. The control tower initially assigned them standard departure route ELBEG 4S, which would have taken them north-east after taking off from runway 16. In view of thunderstorms which extended from the Vosges to the Black Forest (see Annex 3), air traffic control changed the departure route to the south via BASUD – OLBEN – ROTOS – BERSU – GERSA – RESIA. En route to RESIA, ECA 923 had to fly through the airspace of sectors West and South before reaching Upper Sector airspace.

After making contact with Zurich, the crew received clearance from radar Lower Sector West to fly from BERSU on a track of 110° direct to RESIA. The crew had requested a cruising altitude of FL 370 in their flight plan. Since the upper limit of sectors West and South (see Annex 1) is limited to FL 245, after coordination with Sector South, who cleared his airspace for transit, the Sector West air traffic controller (ATCO), allowed ECA 923 to climb to FL 240 and handed over the aircraft for its continued climb directly to the radar executive Upper Sector U (RE-U), who was responsible for the next airspace up, from FL 246 – FL 285 (see Annex 2).

At 09:40:30 UTC, SPW 35A, which had flown via CANNE into Zurich airspace and which was heading north to waypoint KELIP, made contact with the RE-U and was instructed by the latter to descend to FL 250.

At 09:43:16 UTC, the crew of ECA 923 contacted the RE-U and informed him that they were passing FL 198 and climbing to FL 240. At 09:43:45 UTC, the RE-U allowed ECA 923 to continue climbing to FL 270. At the time, the two aircraft were still 35 NM apart.

At 09:44:13 UTC, the RE-U instructed the crew of SPW 35A, whose aircraft had in the meantime reached FL 250, to switch to the Sector South frequency.

The RE-U planned, in view of ECA 923's good climbing performance, to allow it to climb above SPW 35A before they crossed. He stated: *"On the basis of ECA 923's climbing performance, I assumed that vertical separation would be achieved approximately 9-10 NM before the crossing point"*.

He further stated: *"I wanted to use the concept to avoid having to carry out any further verbal coordination. I also assumed that Sector South would allow SPW 35A to descend further without any delay."*

At 09:44:51 UTC, the RE-S informed his colleague at RE-U in a coordination conversation that he was clearing SPW 35A to FL 250. The RE-S stated that he had assumed that ECA 923 would remain at FL 240 until it had crossed SPW 35A before allowing it to climb any further. On the basis of the information from the RE-S the RE-U replied that in that case he would turn his aircraft right.

At 09:44:56 UTC, the two aircraft were 21 NM apart and according to the radar recording ECA 923 was passing FL 234 and climbing to FL 270; the RE-U gave the following instruction: *"Eurocypria nine two three turn right heading one eight zero"*. The crew replied: *"Unable Eurocypria nine two three, big CB on the right"*.

Then, at 09:45:06 UTC the RE-U instructed the crew of ECA 923 to stop its climb at FL 240: *"Roger then stop your climb level two four zero again, traffic right wing, twenty miles, crossing traffic"*. The crew of ECA 923 confirmed this instruction with the words: *"Roger descend two four zero, Eurocypria nine two three"*. According to the radar recording, the two aircraft were still 17 NM apart.

ECA 923 subsequently climbed to FL 250 before beginning to descend again.

At 09:45:39 UTC, the radar executive Sector South (RE-S) cleared SPW 35A to descend to FL180 and requested it to descend at a rate of 2000 ft/min or more. The radar information for ECA 923 was no longer visible to Sector South once the aircraft had passed FL 248. At this time the two aircraft were both at FL 250 and were still 13 NM apart.

Between 09:45:43 UTC and 09:45:54 UTC a coordination conversation took place between the RE-U and the planning controller Sector South (RP-S), during which the RE-U informed the RP-S that ECA 923, which had climbed to FL 250, was quickly descending again to FL 240. The RP-S, who had not heard the instruction from his RE to SPW 35A to descend, replied that SPW 35A would remain at FL 250.

At 09:45:55 UTC, a few seconds before the air traffic controllers' short term conflict alert system (STCA) was triggered, the RE-U issued the following instruction: *"Eurocypria nine two three, expedite your descend please, traffic is twelve miles, right wing"*.

At 09:45:59 UTC, the RE-S, after his RP had informed him about the coordination conversation with the RE-U, gave the following instruction: *"Speedwing three five Alfa, maintain two five zero due to traffic, turn right on to heading zero four zero"*. At the time, SPW 35A was already descending and passing FL 248. The RE-S added: *"Three five Alfa, I'm sorry there is traffic at your left hand correction at your eleven o'clock position, eight miles, converging, I guess they have a TCAS"*.

The crew of SPW 35A, who in the meantime were already passing FL 240, replied that they had received a TCAS-RA (resolution advisory). However, they did not provide any indication of the direction in which they would comply with the TCAS-RA instructions. According to the radar recording, the aircraft then descended to FL 237 and then started to climb again. The commander of SPW 35A stated that during the TCAS-RA only marginal visibility conditions applied and that they were never able to establish visual contact with the other aircraft.

At 09:46:31 UTC, the crew of ECA 923 reported: *"...TCAS descent, TCAS descent"*. The RE-U replied: *"Yeah climb now, the traffic is right wing at three miles, two miles now at two three nine"*. The crew then replied: *"Roger, we are on TCAS, Eurocypria nine two three..."*. According to his information, at the time the commander of ECA 923 had switched off the autopilot and subsequently descended to FL 231. At 09:46:53 UTC, after the two aircraft had crossed, the crew reported: *"Clear of traffic nine two three, visually"*. ECA 923 was already in a slow climb again and was passing FL 232. The crew stated that they were only able to see the other aircraft after they had crossed it, because of cloud.

Almost simultaneously, the crew of SPW 35A in Sector South whose aircraft had climbed back to FL 244, also reported clear of traffic.

At 09:46:43, SPW 35A crossed the flight path of ECA 923 1 NM in front of it; because of the TCAS manoeuvre, the altitude difference was now 700 ft.

1.2 Procedures

Extract from skyguide's procedures for silent transfer.

In principle, all flights shall be coordinated with every sector affected by the flight. If the traffic situation permits, the procedures for coordination-free flights (silent transfer) described below shall be used wherever possible to reduce coordination.

"Silent transfer" for climbing/descending flights

This procedure applies to climbing/descending flights between upper sectors as well as between lower and upper sectors.

The aircraft shall be cleared at the highest or lowest FL of the sector and then transferred without coordination to the accepting sector.

The accepting sector shall clear the flights into its area of responsibility as soon as possible.

Additional "silent transfer" procedure Upper-Lower

If traffic conditions permit, sector U normally clears all descents into the lower sectors to FL 250 and transfers them to the lower exit sectors for further descent.

If due to traffic conditions the procedure cannot be applied, sector U shall coordinate a FL below FL 250 with the appropriate lower sectors.

1.3 Weather

Weather according to skyguide INFONET data:

ATIS ZURICH

INFO ROMEO

LDG RWY 14 ILS APCH, DEP RWY 28

QAM LSZH 0920Z 16.07.2005

220 DEG, 5 KT

VIS 25 KM

CLOUD FEW TCU 5500 FT, SCT 9000 FT

+26°C / +15°C

QNH 1017 ONE SEVEN

QFE THR 14 966

QFE THR 16 967

QFE THR 28 966

TREND TEMPO THUNDERSTORM

NOSIG

TRL 75 DAY 0314 NGT 1958 QNH TICINO 0840Z: 1017 HPA

TROPO: 47 100 FT, MS57

ATIS ZURICH

INFO SIERRA

LDG RWY 14 ILS APCH, DEP RWY 28

QAM LSZH 0950Z 16.07.2005

210 DEG, 8 KT

VIS 25 KM

THUNDERSTORM

CLOUD FEW CB 6000 FT, SCT 8000 FT, BKN 10 000 FT

+26°C / +14°C

QNH 1017 ONE SEVEN

QFE THR 14 967

QFE THR 16 967

QFE THR 28 966

TREND TEMPO THUNDERSTORM WITH RAIN

NOSIG

*TRL 70 DAY 0314 NGT 1958 QNH TICINO 0840Z: 1017 HPA
TROPO: -----FT, -----*

Weather according to MeteoSwiss

General weather situation

Switzerland was in an area affected by a relatively inactive cold front which extended from Scandinavia to the Alps.

SWC, windcharts

SWC, windcharts valid 12 UTC

The Significant Weather Chart (FL100 – FL450) issued by the WAFC in London shows a band of cloud lying over the Alps. Under the hazards, OCNL CB is listed, with a ceiling of FL 360 and a base of XXX.

On the windcharts for FL 240, 35 kt winds from 290 degrees and a temperature of –23 °C are forecast.

Assessment of MeteoSwiss

Radar image

On the radar display, a line of thunderstorm is visible extending from the Vosges via Basel as far as the Black Forest. In the area of the Alps, the display shows an isolated thunderstorm cell centred in the area of Engelberg (see Annex 3).

Conclusions

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:

All information relates to FL 250

Cloud: no cloud

Weather: -

Visibility: over 10 km

Wind: 290 degrees at 38 kt

Temp./dewpoint: -24°C / -40°C

Atmospheric pressure: -

Position of the sun: Azimuth 132°, elevation 57° (information for KELIP)

Hazards: individual thunderstorm cells in the vicinity

2. Analysis

On the day of the incident the air traffic controller at RE-U had come on duty at 04:40 UTC. He took over the RE-U workstation a few minutes before the incident. At first, the volume of traffic was somewhat low, but within a few minutes increased to an average to high volume, the complexity of which was further increased by the weather conditions.

According to his statements, when he took over his workstation the RE-U had been informed that a storm front extended over the whole of northern Switzerland and that there were also areas of thunderstorm activity in the southern part of the Swiss Alps. However, he was not aware of any requests for avoiding action from other aircraft.

The Sector West air traffic controller, after coordination with Sector South, had allowed ECA 923 to climb to the highest flight level available to him, FL 240, and handed over the aircraft by silent transfer to the Upper Sector. As a result of the hand-over to the RE-U, the aircraft was released to continue climbing in accordance with this internal agreement.

On the basis of the Boeing 737-800's good climbing performance, the RE-U, after contacting the crew, instructed them to continue climbing to FL 270. At the same rate of climb, ECA 923 would have achieved the necessary vertical separation of 1000 ft approximately 7-10 NM before crossing SPW 35A and would have flown above SPW 35A. The RE-U also assumed that the Sector South RE would allow SPW 35A to continue to descend; this would have increased the vertical separation even further.

During the time when ECA 923, in the Upper Sector, called and the RE instructed the crew to climb to FL 270, the radar planner Upper (RP-U) was busy with telephone coordination. After this was completed, he saw on his radar monitor that ECA 923 was on the Upper frequency and that SPW 35A had left it and changed to the South Sector.

In order to re-acquaint himself with the traffic situation, the RP-U then asked his RE how high ECA 923 was climbing. The latter replied that he had cleared the aircraft to FL 270. Although the RP had recognised that a separation problem might arise when the two aircraft crossed, according to his statements the information from his RE did not further trouble him, as he was not aware of the control concept of his colleague, who was responsible for separation.

However, the RP-U did subsequently briefly check with his RE whether the separation between the two aircraft was guaranteed: "Chunt das guet" (is it turning out ok?). The question clearly disturbed the RE, who according to his statements had not yet quite completed his traffic planning, to such an extent that he was no longer sure whether the necessary separation could be achieved by means of the climb instruction to ECA 923. During this phase, he was under great strain and was very pressed for time. He considered his RP to be a reliable colleague and a person of integrity, who would not raise such a question about the separation of the two aircraft without reason.

Without subjecting the traffic situation to closer analysis, he instructed ECA 923 to turn right onto heading 180°. By doing so, he wanted to ensure that ECA 923 would cross behind the flight path of SPW 35A and also to establish lateral separation.

When the crew of ECA 923 declined the instruction to turn right because of thunder clouds, the RE-U decided to stop the aircraft's climb at FL 240, as it was shown on the radar screen at the time at an altitude of FL 237.

An aggravating factor in this situation was that the radar screen refresh rate was 12 seconds. This means that the ATCO will always see an altitude which does not correspond to the aircraft's current altitude until the next display. ECA 923, which was climbing at a rate of at least 2500 ft/min in this phase, was therefore up to 500 ft higher than shown on the radar display.

The instruction from the RE-U to ECA 923 to stop its climb at FL240 was given in the period from 09:45:06 – 09:45:11 UTC. However, while the crew were confirming the instruction the Boeing 737-800 was already passing FL 242. This also explains the reply (read-back) from the crew at 09:45:12 UTC: "*Roger descend two four zero, Eurocypria nine two three*". The next radar update at 09:45:15 UTC confirmed this, with an indicated altitude of FL 243. The RE-U assumed that ECA 923 would continue climbing

to approximately FL 245 before starting to descend again. The fact that the aircraft subsequently continued climbing for some 35 seconds up to FL 250, before beginning to descend again at 09:45:50, can be attributed to the high rate of climb.

Since the RE-U had shortly before received from the RE-S the information that SPW 35A was remaining at FL 250, he now wanted to inform him that ECA 923 would quickly descend again to FL 240. However, he could not reach his colleague. It was precisely at this time that the latter gave SPW 35A the instruction to descend to FL 180, as he had seen on his radar screen that ECA 923 had continue to climb.

The coordination conversation therefore took place between the RE-U and the RP-S. The latter incorrectly confirmed to the RE-U, since he could not monitor the radio conversation of his RE, that SPW 35A would remain at FL 250.

Immediately afterwards, the RE-U instructed the crew of ECA 923 to expedite their descent. At almost the same time, the RP-S informed his RE of the content of the coordination conversation with the RE-U. The RE-S then immediately instructed SPW 35A to remain at FL 250 and to turn right onto heading 040°. However, by that time SPW 35A had already left FL 250 and even as the RE-S was transmitting his instruction a short term conflict alert (STCA) appeared on the Upper and Lower Sector radar screens. The RE-S informed the crew of SPW 35A that an aircraft at a distance of 8 NM was approaching them from the 11 o'clock direction and would presumably follow a TCAS alert. The crew of SPW 35A then replied that their TCAS had also generated a resolution advisory.

A few seconds later, in the Upper Sector, the crew of ECA 923 reported a TCAS descent. The RE-U realised that the two aircraft were at the same altitude and that both were descending. According to his statements, this realisation was worrying for him, as he could not see any improvement in the situation as the flights progressed. As a reflex action, he therefore instructed ECA 923 to climb, contrary to the procedure of which he was aware. Only after the crew had informed him that they were following a TCAS-RA did he request them to comply with the TCAS instructions.

Because of the sector allocation in Zurich area control centre, Sector South is responsible for separation up to an altitude of FL 245 within its designated area. The radar display is therefore dependent on the system and designed so that radar information such as callsigns and altitude information for aircraft at FL 248 and above is no longer automatically shown. When ECA 923 passed FL 248 and when as a result the corresponding radar information was no longer visible in Sector South, the RE-S had to assume that ECA 923 had continued its climb in the Upper Sector. Thus there was no longer any obstacle preventing SPW 35A from descending. This corresponds to normal traffic handling practice with silent transfer between sectors.

TCAS - Traffic Alert and Collision Avoidance System

The TCAS equipment in both the aircraft involved were operating with Version 7, which was current at the time of the incident. None of the crews reported any technical problems with the TCAS equipment.

The crew of ECA 923 reacted rapidly and appropriately to the TCAS RA and communicated the TCAS manoeuvre immediately and correctly. The vertical profile of ECA 923's flight path matches the crew statements.

The crew of SPW 35A described a development which could not be reconstructed. The statements of this crew concerning visual and aural instructions from their TCAS equipment during the incident do not permit a definitive reconstruction of the TCAS TA or RA which occurred. The crew of SPW 35A did not use the standard wordings prescribed for such cases for communication on the ATC frequency.

The fact that the RE-U wished to intervene with an instruction to the crew of ECA 923 during a TCAS procedure can be described as inappropriate.

In general it can be noted that the reaction and subsequent description of the case by the crew of SPW 35A might be attributable to shortcomings in training in TCAS-related matters. The RE-U's intervention during an active TCAS avoiding manoeuvre may be the result of a training deficit.

3. Conclusions

3.1 Findings

- ECA 923 was flying according to instrument flight rules and was in contact with Zurich Radar Upper Sector U on the 133.050 MHz frequency.
- SPW 35A was flying according to instrument flight rules and was in contact with Zurich Radar Lower Sector South on the 128.050 MHz frequency.
- The pilots and air traffic controllers were in possession of the licences necessary to exercise their activities.
- There were numerous thunderstorm cells extending from the Vosges to the Black Forest as well as in the area of the Alps.
- At the time of the serious incident, according to information from the air traffic controller, the volume of traffic was average to high with great complexity.
- The hand-over of ECA 923 from the Sector West to the Upper Sector and of SPW 35A from the Upper Sector to Sector South took place by means of silent transfer.
- The air traffic controller had assumed the RE-U function a few minutes before the incident and according to his statement had not yet completed traffic planning.
- The RE-U allowed himself to become unsure because of a brief query from his RP concerning separation of the two aircraft, deviated from the control concept he had adopted and instructed ECA 923, which was flying on a heading of 110°, to turn right onto a heading of 180°.
- The crew of ECA 923 declined the instruction to turn onto a heading of 180° because of thunderstorm clouds.
- According to his statements, the RE-U presumed these thunderstorm clouds were 20-30 NM south of ECA 923's position and therefore assumed that the crew were able to turn the aircraft in a southerly direction or at least to turn markedly to the right.

- The RE-U stated that throughout the entire time he was under extreme strain and very pressed for time.
- Because of the 12 second refresh rate of the radar data, altitude information available to the air traffic controllers was always delayed compared with the actual altitude of the two aircraft at any time.
- The RE-U stated that he had expected that ECA 923 would fly from BERSU direct to RESIA.
- At the time when the RE-U instructed ECA 923 to stop its climb at FL 240, this aircraft had already passed FL 240 and according to the radar recording was passing FL 242.
- ECA 923 continued climbing to FL 250 before it began to descend again.
- During the period when the RE-U was informing the RP-S that ECA 923 was descending back to FL 240, the RE-S cleared SPW 35A to descend to FL 180.
- The air traffic controllers at the Upper and South Sectors were warned at 09:46:03 UTC, when both aircraft were at FL 247 and descending, of the impending conflict by an STCA alert.
- The TCAS equipment in both aircraft generated both a TCAS-TA and a TCAS-RA.
- The crew of SPW 35A were unable to establish visual contact with ECA 923.
- The crew of ECA 923 were able to establish visual contact with SPW 35A only after the conflict had been resolved.
- The following TCAS equipment was fitted to HB-VNA:
TCAS King CAS-67A (TPU-G7A).
- The following TCAS equipment was fitted to 5B-DBW:
TCAS II Transmitter/Receiver 7.0 Logic P/N: 822-1293-002, Model TTR921,
Manufacturer: Collins

3.2 Cause

The serious incident is attributable to the fact that ATC changed its separation concept in an inappropriate manner.

Bern, 5 June 2007

Aircraft Accident Investigation Bureau

This report has been prepared solely for the purpose of accident/incident prevention. The legal assessment of accident/incident causes and circumstances is no concern of the incident investigation (Art. 24 of the Air Navigation Law). The masculine form is used in this report regardless of gender for reasons of data protection.

Responsibility and division of air traffic control Zurich

Area control centre (ACC) Zurich and approach control office (APP)
Zurich/Berne/Basle are responsible for the airspace of air traffic control Zurich.

The airspace of ACC Zurich from the the lower boundary up to FL245 is subdivided into four geographically defined lower sectors:

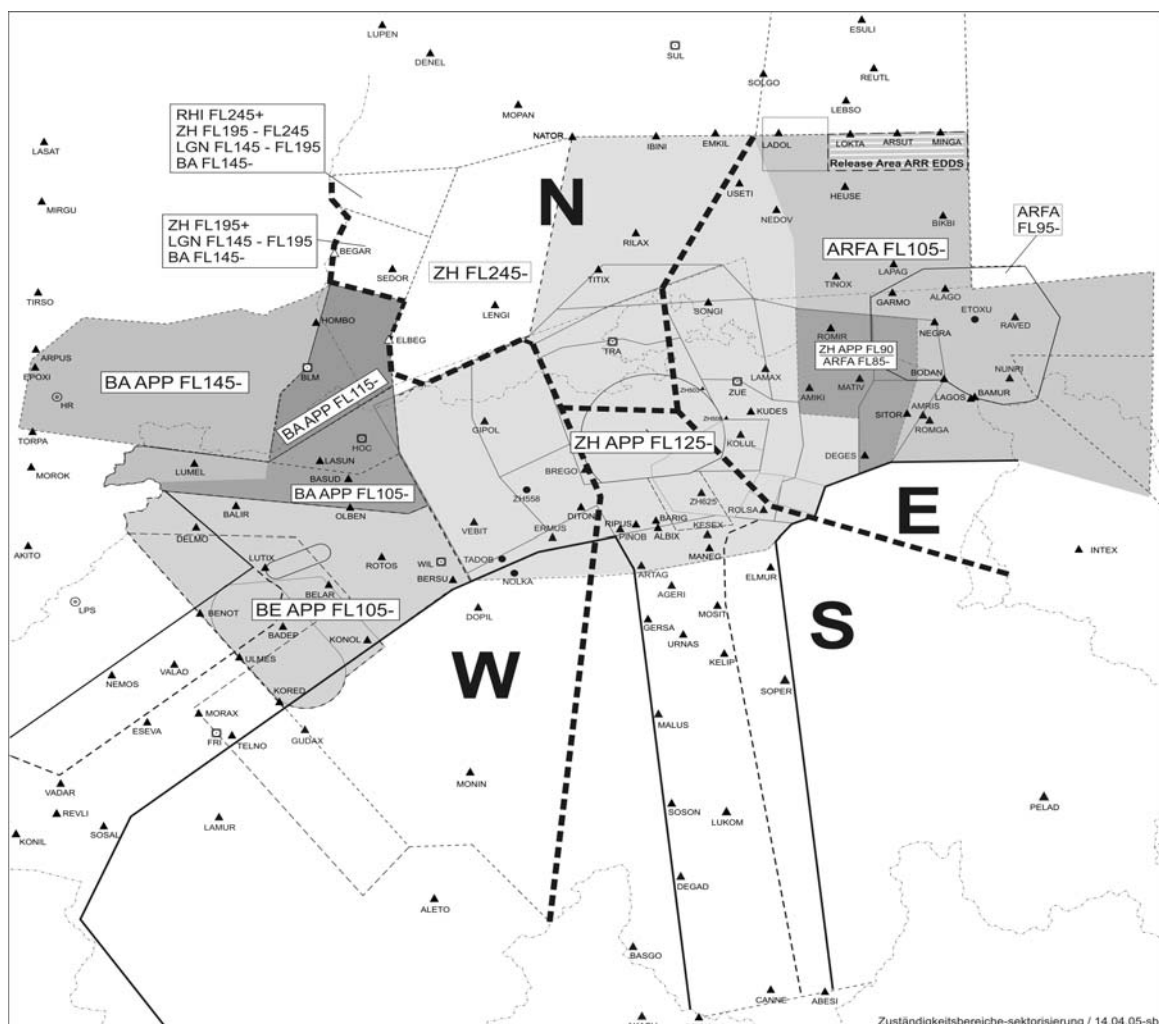
Sectors	SOUTH (S)	NORTH (N)
	EAST (E)	WEST (W)

The lower limit of these sectors above the airspace of Zurich approach is determined at FL125, above the airspace of Berne APP at FL105 and above the airspace of Basle APP at FL105 or FL115, respectively at FL145.

The sector ARFA with an upper limit of FL105 is situated within the sector EAST.

Depending on the expected traffic amount the responsibility of one or more sectors can be delegated or taken on other sectors.

Map showing areas of responsibility ACC Zurich – lower sectors and approach control Zurich/Berne/Basle



Responsibility and division of air traffic control Zurich

Area control centre (ACC) Zurich is responsible for the airspace of air traffic control Zurich above FL245.

The airspace is subdivided into four vertically defined sectors.

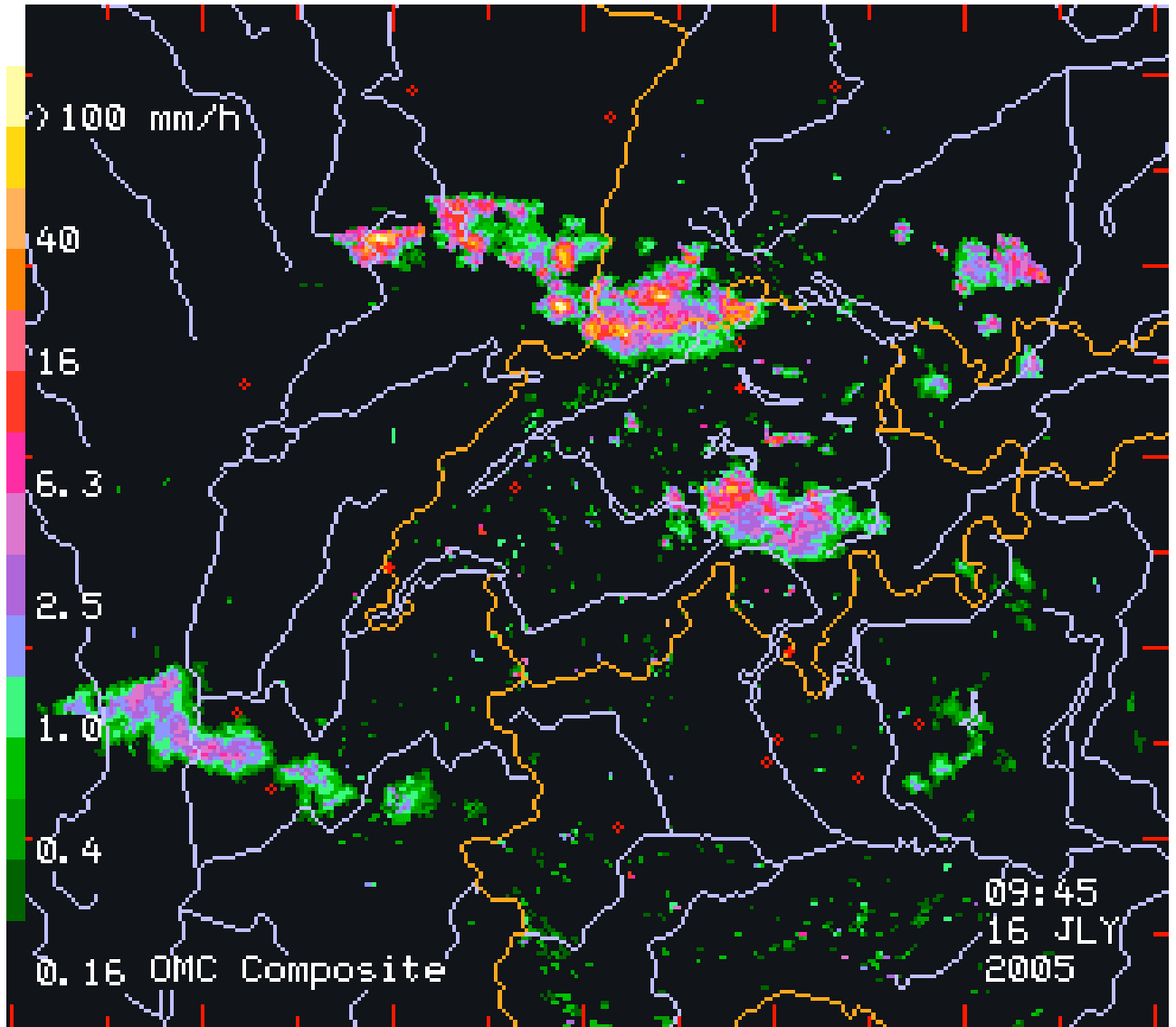
Sectors	upper	(U)	upper M2	(M2)
	upper M3	(M3)	upper M4	(M4)

Depending on the expected traffic level, the areas of responsibility of individual sectors are delegated to others or taken over by them.

Map showing Areas of Responsibility – ACC Upper Sectors



Radar picture on 16.07.2005, 0945 UTC



**TRANSCRIPT OF TELEPHONY
OR RADIOTELEPHONY COMMUNICATION TAPE-RECORDINGS**

Investigation into the **incident** that occurred on **16.07.2005**

- Subject of transcript: **SPW35A / ECA923**

- Centre concerned: Swiss Radar Area East

- Designation of unit: Radar Upper Sector U
Radar Lower Sector South

- Frequency / Channel: 133.05MHz
128.05MHz

- Date and period (UTC) covered by attached extract: 16.07.2005
09:40:30 - 09:54:01 UTC

- Date of transcript: 25.07.2005

- Name of official in charge of transcription: Elke SCHAFFER

- 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, 25.07.2005


Elke SCHAFFER

Abbreviations

Sector Designation of sector

RE U - Radar Upper Sector U
 RE S - Radar Lower Sector South

<u>Aircraft</u>	-	<u>Callsign</u>		<u>Type of acft</u>	<u>Flight rules</u>	<u>ADEP</u>	-	<u>ADES</u>
35A	-	SPW35A	Speedwing	C560	IFR	LGIR	-	LSZH
4152	-	DLH4152	Lufthansa	B462	IFR	EDDM	-	LFMN
087	-	HLF087	Hapag Lloyd	A310	IFR	LFSB	-	LGKO
554	-	HLF554	Hapag Lloyd	B738	IFR	GCLP	-	EDDS
572Z	-	AUA572Z	Austrian	DH8D	IFR	LSGG	-	LOWW
923	-	ECA923	Eurocypria	B738	IFR	LFSB	-	LCLK
S-XH	-	S-PMXH		P180	IFR	EPSC	-	LSGG
937P	-	VLM937P	Rubens	F50	IFR	EHRD	-	LIRA
570B	-	BAL570B	Britannia	B742	IFR	LIRP	-	EGKK
2101	-	STY2101	Styrian	CRJ2	IFR	LFKB	-	LSZH
87U	-	DLH87U	Lufthansa	A320	IFR	EDDM	-	LPPT
1623	-	KLM1623	KLM	B738	IFR	EHAM	-	LIMC
35A	-	SPW35A	Speedwing	C560	IFR	LGIR	-	LSZH
400	-	DNM400	Denim	F50	IFR	LIPE	-	LSZH
1617	-	SWR1617	Swiss	RJ1H	IFR	LIMC	-	LSZH
H-OX	-	HB-FOX		PC12	IFR	LSZH	-	LFMD
H-XK	-	HB-CXK		C210	IFR	LIRJ	-	LSZH
163	-	SRK163	Skyfox	D328	IFR	LSZB	-	LIRJ
2101	-	STY2101	Styrian	CRJ2	IFR	LFKB	-	LSZH
5790	-	HLX5790	Excellence	B735	IFR	EDDS	-	LIBD

ec / 25.07.2005

TRANSCRIPT SHEET

Occurrence: SPW35A / ECA923 of 16.07.2005



To <u>Col.1</u>	From <u>Col.2</u>	Time <u>Col.3</u>	Communications <u>Col.4</u>	Observations <u>Col.5</u>
--------------------	----------------------	----------------------	--------------------------------	------------------------------

Frequency: Radar Upper Sector U 133.05MHz

RE U	35A	09:40:30	Swiss Radar good morning, Speedwing three five Alfa, descending level two niner zero, to KELIP	
35A	RE U	:35	Speedwing three five Alfa, hello identified, descend flight level two five zero	
RE U	35A	:39	Descending down level two five zero, Speedwing three five Alfa	
RE U	4152	09:41:14	Swiss Radar, Lufthansa four one five two?	
4152	RE U	:16	Go ahead	a new controller took place
RE U	4152	:19	According our weather radar, ah... in the vicinity of ODINA there are some ah... build ups ah..., and we would request ah... ten degrees to the right heading two one zero to avoid for the next ah... maybe forty or fifty miles	
4152	RE U	:36	That is approved, Lufthansa four one five two	
RE U	4152	:38	Okay thank you very much, turning right heading two one zero	
RE U	087	:42	Hapag Lloyd zero eight seven, approaching flight level two seven zero	
RE U	554	:48	Radar good day Hapag Lloyd ah... five five four, we are on course KONOL, descending and approaching flight level two eight zero	
554	RE U	:55	Hapag Lloyd five five four good morning identified proceed GARMO ARSUT	
RE U	554	:59	Direct GARMO ARSUT, Hapag Lloyd five five four	
087	RE U	09:42:02	Hapag Lloyd zero eight seven, maintain level two seven zero	
RE U	087	:05	Maintaining two seven zero, zero eight seven	
572Z	RE U	:11	Austrian five seven two Zulu, own navigation BAMUR ALGOI	
RE U	572Z	:15	Direct BAMOR ALGOI next, Austrian five seven two Zulu	

Signature of person in charge of transcription :

TRANSCRIPT SHEET

Occurrence: SPW35A / ECA923 of 16.07.2005



To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
RE U	923	09:43:16	Radar ah... good morning Eurocypria nine two three with you, out of one nine eight climbing at two four zero	
923	RE U	:22	Eurocypria nine two three good morning, call you back for higher	
RE U	923	:26	Nine two three	
923	RE U	:45	Eurocypria nine two three, climb flight level two seven zero	
RE U	923	:49	Climbing two seven zero, nine two three	
S-XH	RE U	09:44:04	Sierra Papa Mike X-ray Hotel, descend flight level two five zero	
RE U	S-XH	:08	Descending flight level two five zero, Sierra Papa Mike X-ray Hotel	
35A	RE U	:13	Speedwing three five Alfa, contact Zurich on one two eight zero five	
RE U	35A	:17	Zurich one two eight zero five, Speedwing three five Alfa, good day	
087	RE U	:23	Hapag Lloyd zero eight seven, over to Munchen one three three five five, bye bye	
RE U	087	:27	Over München three three five five, zero eight seven, bye	
087	RE U	:30	Good Bye	
923	RE U	:56	Eurocypria nine two three turn right heading one eight zero	
RE U	923	09:45:03	Unable Eurocypria nine two three, big CB on the right	
923	RE U	:06	Roger then stop your climb level two four zero again, traffic right wing, twenty miles, crossing traffic	
RE U	923	:12	Roger descend two four zero, Eurocypria nine two three	
RE U	554	:25	Radar Hapag Lloyd five five four, request to deviate ah... fifteen degrees to the right, heading would be ah... zero six five	


Signature of person in charge of transcription :

TRANSCRIPT SHEET

Occurrence: SPW35A / ECA923 of 16.07.2005



To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
554	RE U	09:45:32	Approved	
RE U	554	:33	Thank you, call you when ah... inbound GAMOR again, Hapag Lloyd five five four	
RE U	554	:41	And ah... Hapag Lloyd five five four request further descend	
923	RE U	:55	Eurocypria nine two three, expedite your descend please, traffic is twelve miles, right wing	
RE U	923	09:46:00	I do expediting (traffic*)	*audible in the background
RE U	554	:23	Radar Hapag Lloyd five five four, any chance ah.. to descend, because we have a cloud layer straight ahead?	
554	RE U	:30	Stand by	
RE U	923	:31	Nine two three ????? ah... TCAS ah... TCAS descent, TCAS descent	
923	RE U	:37	Yeah climb now, the traffic is right wing at three miles, two miles now at two three nine	
RE U	923	:44	Roger, we are on TCAS, Eurocypria nine two three ah... yeah	
923	RE U	:48	Yeah, follow the TCAS	
RE U	923	:50	Traffic nine two three	
923	RE U	:51	Follow the TCAS	
RE U	923	:53	Clear of traffic nine two three, visually	
923	RE U	:54	Thank you	
RE U	923	09:47:03	I will filling an ASR, Eurocypria niner two three	
923	RE U	:06	Roger	
RE U	S-XH	:10	Swiss Radar ah... Sierra Papa Mike X-ray Hotel, approaching ah... BENOT, ready for descend, which arrival after BENOT?	
S-XH	RE U	:17	Sierra X-Ray Hotel, contact Geneva one two eight nine, bye bye	


Signature of person in charge of transcription : 

TRANSCRIPT SHEET

Occurrence: SPW35A / ECA923 of 16.07.2005



To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
RE U	S-XH	09:47:20	One two eight nine, bye bye	
554	RE U	:22	Hapag Lloyd five five four, descend level two five zero	
RE U	?	:25	????? clear of weather	two stations overlapping
RE U	554	:26	????? Five five four, thank you	two stations overlapping
554	RE U	:28	Five five four, crossed transmissions, descend level two five zero	
RE U	554	:32	Hapag Lloyd five five four, descending two five zero, thank you	
923	RE U	:35	Eurocypria nine two three, climb now flight level two seven zero	
RE U	923	:39	Roger climbing two seven zero, nine two three	
087	RE U	:42	Austrian five seven two Zulu, Munchen one three three five five	
RE U	087	:46	One three three decimal five five "ade"	
554	RE U	:48	Hapag Lloyd five five four Radar one three three nine, bye bye	
RE U	554	:51	One three three nine, Hapag Lloyd five five four, "tschüss"	
4152	RE U	:53	Lufthansa four one seven two, when able to ODINA, descend level two seven zero	
RE U	4152	:59	Four one five two confirm, and descending two seven zero and turning now inbound to ODINA	
4152	RE U	09:48:06	Roger	
937P	RE U	:08	Rubens nine three seven Papa, are you able to fly to ODINA?	
RE U	937P	:11	Affirm, just clear of weather, ah... nine three seven, direct ODINA	
937P	RE U	:14	Thank you	
RE U	937P	:16	presses the PTT-button

Signature of person in charge of transcription : 

TRANSCRIPT SHEET

Occurrence: SPW35A / ECA923 of 16.07.2005



To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
RE U	570B	09:48:17	Swiss good afternoon, Britannia five seven zero Bravo, flight level two eight zero	
570B	RE U	:27	Britannia five seven zero Bravo, good morning squawk two seven six six	
RE U	570B	:31	Two seven six six, Britannia five seven zero Bravo	
RE U	2101	:58	Swiss Radar "grias euch gott", Styrian two one zero one, level two niner zero, to KELIP	
2101	RE U	09:49:03	Styrian two one zero one good morning identified, descend flight level two five zero	
RE U	2101	:08	Cleared level two five zero, Styrian two one zero one	
923	RE U	:49	Eurocypria nine two three?	
RE U	923	:51	Go ahead sir	
923	RE U	:53	I guess you have to file a report about your ah... resolution advisory	
RE U	923	:57	Roger	
923	RE U	:58	And ah... we will ah... write this down as well	
RE U	923	09:50:02	?????	unreadable
937P	RE U	:14	Rubens nine three seven Papa contact Milan one two seven four five	
RE U	937P	:18	One two seven four five, "tschüss" nine three seven	
RE U	570B	:27	Ah... Britannia five seven zero Bravo we're standing by for further climb due weather	
570B	RE U	:34	Britannia five seven zero Bravo, identified, for higher level contact radar one three two eight one five	
RE U	570B	:42	Roger, one three two eight one five, Britannia five seven zero Bravo, good day	
923	RE U	09:51:04	Eurocypria nine two three climb level two eight zero	
RE U	923	:08	Climbing two eight zero, Eurocypria nine two three	

Signature of person in charge of transcription :

TRANSCRIPT SHEET

Occurrence: SPW35A / ECA923 of 16.07.2005



To <u>Col.1</u>	From <u>Col.2</u>	Time <u>Col.3</u>	Communications <u>Col.4</u>	Observations <u>Col.5</u>
2101	RE U	09:51:19	Styrian two one zero one contact Zurich one two eight zero five	
RE U	2101	:23	One two eight zero five, Styrian two one zero one "ciao"	
2101	RE U	:26	"Ciao"	
4152	RE U	:30	Lufthansa four one five two proceed to EVANO, contact Milan on one three five decimal one three zero	
RE U	4152	:38	Direct to RIVANO, and Milano one three five one three zero, Lufthansa four one five two "aufwiederhören"	
4152	RE U	:44	"Wiederhören"	
923	RE U	:46	Eurocypria nine two three climb level three one zero	
RE U	923	:49	Climbing three one zero, nine two three	
923	RE U	:57	Nine two three, just for my information, did you have visual contact just when crossing the traffic at ah... when descending?	
RE U	923	09:52:06	Affirm Eurocypria nine two three, we have ah... him visually	
923	RE U	:10	That means very late?	
RE U	923	:13	Affirm, very late	
923	RE U	:14	Thank you	
RE U	923	:15	There where clouds and there where CBs on the on our right hand side, we couldn't see the aircraft coming in	
923	RE U	:19	Okay	
RE U	87U	:22	Swiss "grüezi" Lufthansa eight seven Uniform, level two eight zero	
87U	RE U	:26	Lufthansa eight seven Uniform, "grüezi" radar contact, ah... proceed Trasadingen BENOT, squawk now two seven four four	
RE U	87U	:37	Squawk two seven four four, Lufthansa eight seven Uniform and in order to avoid we request direct VERO... VEROX right now	

Signature of person in charge of transcription :

TRANSCRIPT SHEET

Occurrence: SPW35A / ECA923 of 16.07.2005



To <u>Col.1</u>	From <u>Col.2</u>	Time <u>Col.3</u>	Communications <u>Col.4</u>	Observations <u>Col.5</u>
87U	RE U	09:52:45	Eight seven Uniform, that is approved	
RE U	87U	:48	Thank you, Lufthansa eight seven Uniform, direct VEROX	
RE U	1623	:51	Swiss "grüezi" KLM one six two three, descend level two niner zero, inbound AKASU	
1623	RE U	:56	KLM one six two three good morning roger, descend to flight level two five zero	
RE U	1623	09:53:01	Descend level two five zero, KLM one six two three	
923	RE U	:05	Eurocypria nine two three, contact now Padua, on one three three decimal seven zero five	
RE U	923	:12	Three three seven zero five, nine two three	
923	RE U	:14	presses the PTT-button

Signature of person in charge of transcription :

TRANSCRIPT SHEET

Occurrence: SPW35A / ECA923 of 16.07.2005



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

Frequency: Radar Lower Sector South 128.05MHz

RE S	35A	09:44:43	Swiss Radar good day, Speedwing three five Alfa, flight level two five zero, to KELIP	
35A	RE S	:49	"Grüezi" Speedwing three five Alfa identified	
RE S	400	:52	And Denim four hundred is now proceeding to GIPOL and requesting descend	
1617	RE S	09:45:02	Swiss one six one seven, climb flight level two three zero	
RE S	1617	:06	Climbing two three zero, Swiss one six one seven	
RE S	400	:11	Zurich, did you copy Denim four hundred?	
400	RE S	:13	Negative, direct to GIPOL, confirm?	
RE S	400	:15	Yes, we will proceed to GIPOL and requesting descend	
400	RE S	:20	Roger, traffic just at your left hand side, I call you for descend	
RE S	400	:25	Roger, Denim four hundred	
H-OX	RE S	:27	Hotel Oscar X-ray, climb flight level two three zero	
RE S	H-OX	:30	Climb flight level two three zero and request ah... two five zero, Hotel Oscar X-ray	
35A	RE S	:39	Speedwing three five Alfa, descend level one eight zero	
RE S	35A	:42	Descend level one eight zero, Speedwing three five Alfa	
35A	RE S	:44	Three five Alfa, give me a rate of two thousand or more please	
RE S	35A	:48	Wilco, three five Alfa	
35A	RE S	:59	Speedwing three five Alfa, maintain two five zero due to traffic, turn right onto heading zero four zero	
RE S	35A	09:46:06	Right heading zero four zero, Speedwing three five Alfa	

Signature of person in charge of transcription :

TRANSCRIPT SHEET

Occurrence: SPW35A / ECA923 of 16.07.2005



To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
35A	RE S	09:46:09	Three five Alfa, I'm sorry there is traffic at your left hand correction at your eleven o'clock position, eight miles, converging, I guess they have a TCAS	
RE S	35A	:18	Yeah, we have a TCAS ah... Speedwing three five Alfa	
35A	RE S	:23	You have a resolution advisory?	
RE S	35A	:25	Affirmative, three five Alfa	
35A	RE S	:28	Roger, please follow it	
RE S	H-XK	:32	Hotel X-ray Kilo, we... request heading ah... two eight zero	
H-XK	RE S	:38	Approved	
RE S	H-XK	:39	Thank you, Hotel X-ray Kilo	
400	RE S	:49	Denim four hundred Radar one three five six seven, bye	
RE S	35A	:57	Speedwing three five Alfa, we are clear of t... of traffic	
35A	RE S	09:47:00	Thanks a lot, I'm very sorry about that	
RE S	35A	:05	And three five Alfa, ah... what you did ah..., do you have the traffic ah... on the frequency?	
35A	RE S	:12	Negative, it was not on my frequency, that was the problem	
RE S	35A	:21	Roger, so we descend now level one eight zero, Speedwing three five Alfa	
35A	RE S	:24	Affirm	
H-XK	RE S	:33	Hotel X-ray Kilo, contact now Radar one three five six seven "adieu"	
RE S	H-XK	:37	One three five decimal six seven, "adieu" Hotel X-ray Kilo	
RE S	163	:46	Skyfox one six three, we're now clear of weather	
163	RE S	:50	Roger, one six three, proceed to ODINA	
RE S	163	:52	Direct ODINA, Skyfox one six three	
163	RE S	09:48:18	Skyfox one six three, climb to flight level two one zero	

Signature of person in charge of transcription :

TRANSCRIPT SHEET

Occurrence: SPW35A / ECA923 of 16.07.2005



To <u>Col.1</u>	From <u>Col.2</u>	Time <u>Col.3</u>	Communications <u>Col.4</u>	Observations <u>Col.5</u>
RE S	163	09:48:21	Climb to flight level two one zero, Skyfox one six three	
35A	RE S	:31	Speedwing three five Alfa, descend flight level one seven zero	
RE S	35A	:36	Descend level one seven zero, Speedwing three five Alfa	
163	RE S	:56	Skyfox one six three, contact ah... Milano on ah... one two seven four five, good bye	
RE S	163	09:49:01	One two seven four five, Skyfox one six three, good bye	
RE S	H-XK	:09	Hotel Oscar X-ray, clear of ah... weather	
H-XK	RE S	:12	Roger, proceed to ODINA	
RE S	H-XK	:14	Proceed ODINA, "merci"	
RE S	400	:23	And Denim four hundred still standing by for descend	
400	RE S	:26	Denim four hundred contact Swiss Radar one three five six seven, good bye	
RE S	400	:30	One three five six seven, Denim four hundred "tschüss"	
35A	RE S	09:51:03	Speedwing ah... three five Alfa, ah... Swiss Radar?	
RE S	35A	:06	Yes, go ahead sir	
35A	RE S	:08	Yeah, about the situation before, it was a misunderstanding, the traffic should ah... usually should maintain level two four zero and he climbed unexpected at level two five zero, that ah... why we gave you the descent and the other traffic was then descending as well, so ah... we have that to check that ah later on, we are very sorry about the situation	
RE S	35A	:29	Roger, it's not the problem, that we are to ah... to make ah... TCAS climb to do that, you maybe, ah... we avoid by ah... three hundred feet	
35A	RE S	:38	Yes, ah... we we do ah... a report as well and ah... it's a part of the investigation later on, so if it's fine for you ah... if you can live with that, ah... I think we, you will hear from us	
RE S	35A	:51	Is no problem, Speedwing three five Alfa	

Signature of person in charge of transcription :

TRANSCRIPT SHEET

Occurrence: SPW35A / ECA923 of 16.07.2005



To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
35A	RE S	09:51:53	
RE S	2101	:56	Radar "griass euch gott" Styrian two one zero one, descending level two five zero, passing two six zero and ah... we are inbound KELIP	
2101	RE S	09:52:03	Styrian two one zero one, hello identified, reduce minimum clean	
RE S	2101	:06	Reducing minimum clean, Styrian two one zero one	
H-OX	RE S	:10	Hotel Oscar X-ray, contact ah... Milano one two seven four five, good bye	
RE S	H-OX	:14	One two seven four five, good bye, Hotel Oscar X-ray	
1617	RE S	:39	Swiss one six one seven, descend flight level ah... one eight zero	
RE S	1617	:43	Descend now flight level one eight zero, Swiss one six one seven	
1617	RE S	:46	One six one seven, fifteen hundred or greater	
RE S	1617	:49	Descending fifteen hundred feet per minute or more, Swiss one six one seven	
2101	RE S	:53	Styrian two one zero one, descend flight level ah... two one zero, rate two thousand or greater	
RE S	2101	:59	Down level two one zero with the rate of two thousand or greater, Styrian two one zero one	
35A	RE S	09:53:17	Speedwing three five Alfa, descend flight level one three zero, rate fifteen hundred or greater	
RE S	35A	:21	Descend level one three zero, fifteen hundred or greater, Speedwing three five Alfa	
RE S	5790	:26	Swiss ah... good ah...morning, Excellence five seven niner zero, flight level two three zero, inbound ODINA	
5790	RE S	:35	Station calling?	
RE S	5790	:37	Excellence five seven niner zero, flight level two three zero, inbound ODINA	

Signature of person in charge of transcription :

TRANSCRIPT SHEET

Occurrence: SPW35A / ECA923 of 16.07.2005



<u>To</u> <u>Col.1</u>	<u>From</u> <u>Col.2</u>	<u>Time</u> <u>Col.3</u>	<u>Communications</u> <u>Col.4</u>	<u>Observations</u> <u>Col.5</u>
5790	RE S	09:53:41	Excellence five seven nine zero, hello identified, maintain level two three zero	
RE S	5790	:45	Maintain level two three zero and request heading two two zero to avoid	
5790	RE S	:49	Five seven nine zero, ah... heading is approved	
RE S	5790	:52	Thank you	
35A	RE S	:57	Speedwing three five Alfa, contact Arrival one one eight zero, good bye	
RE S	35A	09:54:01	Arrival one one eight zero, Speedwing three five Alfa, good day	

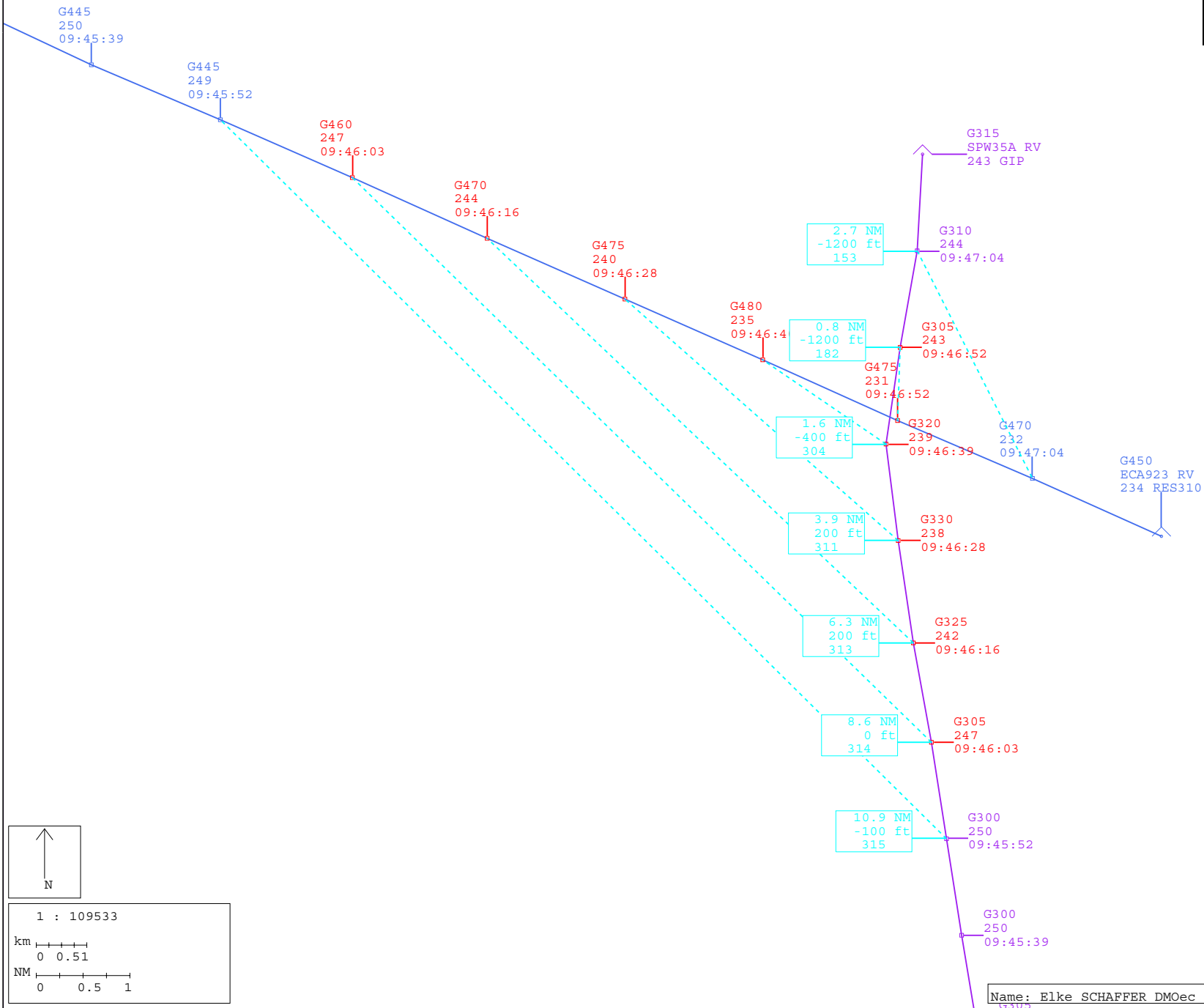
- end -

A handwritten signature in blue ink, appearing to be the initials "EE".

Src
MV_MRT_ACC

Analysis: SPW35A / ECA923 Time: 16.07.2005 09:47:20

▲ KELIP



Name: Elke SCHAFER DMOec Eval Date: 18.07.2005

Src
MV_MRT_ACC

Analysis: ECA923 SPW35A Time: 16.07.2005 09:48:04

