

Final Report of the Aircraft Accident Investigation Bureau

concerning the incident (Airprox)

between SAA275 and SWR754

on 21 March 2003

On the Ground, Zurich Airport

FINAL REPORT

AIR TRAFFIC INCIDENT REPORT (ATIR)

AIRPROX (NEAR MISS)

This report has been prepared 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 of names also applies analogously to the feminine form.

| | |
|-----------------|--|
| PLACE/DATE/TIME | On the ground, Zurich Airport 21 March 2003 19:55 UTC |
| AIRCRAFT | 1. SAA275 Boeing 747-357 (B743) ZS-SKA South African Airways Zurich (LSZH) – Johannesburg Intl. Airport (FAJS) 2. SWR754 Embraer RJ145LU (EMB145-LU) HB-JAJ Swiss Zurich (LSZH) – Luxembourg (ELLX) |

| | | |
|-----------|---------------|---|
| ATC UNITS | Control Tower | (ADC = Aerodrome Control) (GRO = Ground Control) |
|-----------|---------------|---|

| | |
|----------------------------|----------------------|
| AIR TRAFFIC CONTROLLERS | ADC ATCO GRO ATCO |
|----------------------------|----------------------|

| | |
|----------|---------------|
| AIRSPACE | On the ground |
|----------|---------------|

HISTORY

SAA275

On Friday evening, 21 March 2003 SAA275 was at stand B31 and the flight crew were preparing for the flight to Johannesburg. Clearance delivery (CLD) assigned the pilots departure route GERSA 3 UNIFORM (G3U) with take-off from runway 16. At 19:44:25 the commander (CMD) received from the apron controller at Apron South on frequency 121.750 MHz clearance to taxi via taxiway ECHO with the instruction to stop before runway 28. The aircraft was then handed over to Ground Control (GRO) on frequency 121.900 MHz for the crossing of runway 28.

Once this crossing manoeuvre had been completed, the CMD made contact with Apron North on frequency 121.850 MHz, at 19:48:37 UTC. The apron controller instructed the pilots to continue taxiing as far as the holding point of runway 16. Finally, the apron controller handed over SAA275 to the Aerodrome Control (ADC) frequency of 118.100 MHz for take-off.

When radio contact had been established with ADC, at 19:50:32 SAA275 received from the ATCO the instruction to taxi to the take-off position on runway 16.

At 19:54:22 the ADC ATCO granted the following clearance to SWR754, which was in the take-off position on runway 28: "SWR754, wind 070 degrees, 5 knots runway 28, cleared for take-off".

The crew of SAA275 erroneously interpreted this radio message as clearance for their take-off on runway 16. The CMD acknowledged the take-off instruction immediately.

At 19:55:05 the aircraft began the take-off roll and took off approximately half a minute later from runway 16.

SWR754

On that evening, SWR754 was at stand H82. The pilots intended to fly to Luxembourg. After the FO had received standard instrument departure route (SID) LASUN 3 YANKEE (L3Y) for departure on runway 28 from CLD on frequency 121.800 MHz, he switched to the Apron South frequency. On this frequency he was instructed at 19:48:57 to taxi to the holding point on runway 28 behind a Jumbolino which was taxiing in front of him.

At 19:50:50 SWR754 switched to the ADC frequency 118.100 MHz.

Once radio contact had been established with ADC, the flight crew received clearance at 19:51:48 to taxi to the take-off position on runway 28 behind the Jumbolino which was taking off.

At 19:54:22 the ADC ATCO granted SWR754 take-off clearance with the following words: "SWR754, wind 070 degrees, 5 knots runway 28, cleared for take-off".

According to the legal recording, the readback from SAA275 could be heard "cleared for take-off 16, SAA275."

SWR754 then started its take-off procedure at 19:54:55 and lifted off from runway 28 approximately 300 metres before the intersection of runways 16/28.

According to eye witnesses the EMB145 flew over the intersection of runways 16/28 at a height of approximately 50 metres AGL. At this time, SAA275 was in take-off roll on runway 16.

According to the radar record, the two aircraft converged to a distance of approximately 900 metres. The B747 passed the intersection of runways 16/28 approximately 16 seconds later than SWR754.

All times are specified in the universal time coordinated (UTC) format (local time – 1hour).

FINDINGS

- The incident took place in the area of the intersection of runways 16/28.
- At 19:50:32 SAA275 had been cleared by ADC to taxi to its take-off position on runway 16.
- At 19:51:48 SWR754 had been cleared by ADC to taxi to its take-off position on runway 28.
- For the forthcoming flight to Johannesburg it had been agreed between the crew of SAA275 that the FO would assume the duties of pilot flying (PF) and the CMD those of pilot non flying (PNF) as well as radio operation.
- The CMD of SWR754 was pilot flying and the FO, who operated radio contact with apron control and air traffic control, was pilot non flying (PNF).
- When SAA275 taxied onto runway 16 and lined up for take-off, according to his statements the CMD observed in the 2 o'clock direction an aircraft which had just taken off from runway 28.
- While the crew of SAA275 were waiting on runway 16 in take-off position for take-off clearance, the CMD could not see another aircraft either visually or on the TCAS (Traffic Collision and Avoidance System) display. The same picture also presented itself to him during the take-off roll, the take-off and the subsequent climb.
- When the ADC ATCO had cleared SWR754 for take-off at 19:54:22 according to the statement of the crew of SWR754 this clearance was read back by them.
- SAA275 had not received take-off clearance but interpreted the ADC ATCO's take-off clearance to SWR754 as a clearance for their own take-off from runway 16.
- The take-off of both aircraft was monitored in the control tower as well as by the aerodrome controller (ADC) and the ground controller (GRO).
- The air traffic controllers at ADC and GRO stated that after clearing SWR754 for take-off they had both heard how the pilot of SWR754 had correctly confirmed the take-off clearance.
- On the legal recording, the readback from the crew of SAA275 is recorded as follows: "cleared for take off 16, SAA275".
- The ADC ATCO stated that the quality and comprehensibility of radiocommunications with SAA275 were good.
- The ADC ATCO further stated that he subsequently established that on the legal recording a readback from SAA275 could be heard. This is contrary to what he heard from his loudspeaker at his workstation. This state of affairs is very disturbing for him.
- The ADC ATCO also made the following statement: "If SAA275 had, on the basis of my take-off clearance to SWR754, erroneously given a readback for their take-off which was audible to me, this would have been apparent to me, because of the dialect affected by South African pilots and the particular features of the radiotelephony equipment on their Jumbo aircraft."

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- The GRO ATCO later stated that on subsequently listening to the radio recording in the control tower when the local recording (short-term recording) was played back he had noticed that the readback from SWR754 could not be heard, but that the take-off confirmation from SAA275 was audible. During all radio conversations with SAA275 a distinct background noise (a whistling tone) could be heard.
- On the basis of the legal recording it was possible to establish that the readback from SAA275 was not very clear and was accompanied by background noise. However, it was comprehensible and was given in an accent typical of South African pilots.
- SWR754 had a lift-off about 300 metres before the intersection of runways 16/28.
- The crew of SWR754 had not seen the B747 which was taking off on runway 16.
- According to the statement by the FO of SWR754, on the multi-function display in the cockpit during take-off, the fuel page was selected on the FO's side and the TCAS page was selected on the CMD's side. In the event of a convergence, even on the ground, the TCAS page should have automatically appeared on the FO's side. On this occasion this did not happen.
- At heights below 380 ft AGL (above ground level) the TCAS installed in the EMB145 does not indicate any Traffic Advisories (TA) or Resolution Advisories (RA).
- At heights below 1000 ft AGL the TCAS installed in the B747-357 does not indicate any TA or RA.
- Both controllers stated that they had observed how SWR754 had lift-off before the intersection of runways 16/28.
- When the ADC ATCO noticed that SAA275 had also taxied onto runway 16, SWR754 was just before lift-off.
- The ADC ATCO assessed the situation as not dangerous and therefore decided not to instruct SAA275 to abort its take-off.
- According to the radar recording, the two aircraft converged to approximately 900 metres with their directions of motion intersecting at an angle of approximately 120°. SWR754 crossed the intersection of runways 16/28 about 16 seconds before SAA275.
- At 19:56:25 the crew of SAA275 was informed by ADC that they had taken off without clearance.
- At the time of the incident, the frequencies of ADC1, 118.100 MHz, and ADC2, 120.225 MHz, were coupled by means of the coupling function.
- According to the radio record, both aircraft had been sent by Apron Control to ADC on frequency 118.100 MHz.
- According to both the statement of the technical expert from skyguide "ATC communication Zurich" and the manufacturer of the radio system, the signal audible from the loudspeaker at the ADC workstation must have been the same as that on the short term recording.

All times are specified in the universal time coordinated (UTC) format (local time – 1hour).

- ATIS ZURICH
INFO WHISKEY
QAM LSZH 19:50 UTC 21.03.2003
060 DEG 6 kts
VIS 10 km
SKC
+07 / -02
QNH 1021
QFE THR 14 970
QFE THR 16 971
QFE THR 28 970
NOSIG

ANALYSIS

At the time of the incident, the ATCO at the ADC workstation was dealing with an average workload. The traffic situation was also being attentively monitored by his neighbouring colleague at the GRO workstation.

When the ADC ATCO cleared SWR754 for take-off on runway 28, SAA275 was also positioned for take-off on runway 16.

Because of a misunderstanding, the crew of SAA275, which had just completed their final take-off checks, assumed that the take-off clearance applied to them.

This misunderstanding may possibly have been caused because the crew of SAA275, after completing their take-off preparations, were expecting a take-off clearance and one then followed. The similar sound of the combination of the numbers in their callsigns (both callsigns included the numbers "75") may also have played a role in this.

According to the radio recording only the readback from SAA275 could be heard. The transmission was not very clear and was accompanied by background noise. However, it was comprehensible and was delivered in an accent typical of South African pilots.

Because of the take-off clearance to SWR754, the controllers at ADC and GRO were obviously mentally tuned to the response from the pilot of this aircraft (expectant behaviour). This may have led him to supposedly hear the readback of SWR754.

The legal recording did not record any answer from SWR754.

The ADC ATCO noticed SAA275 rolling approximately 35-40 seconds after he had cleared SWR754 for take-off. At the time, according to his information, SWR754 was located at the point between taxiways JULIETT and FOXTROT.

After a brief analysis of the situation, the ADC ATCO decided not to request SAA275 to abort its take-off. He justified this as follows: quote: "For me there was clearly no danger of collision of the two aircraft. A possible abort of SAA275's take-off would in my opinion have been a disproportionate measure, and also useless".

Airborne collision avoidance system (ACAS/TCAS)

The TCAS installed and operational on both aircraft is not suitable for such convergence of aircraft at low approach heights, shortly after take-off or on the ground.

An aircraft holding on the runway and an approaching aircraft, and two aircraft which are taxiing towards each other on the ground, have only a limited possibility, or none at all, of performing the vertical evasive manoeuvre envisaged by the TCAS system.

All times are specified in the universal time coordinated (UTC) format (local time – 1hour).

For this reason, TCAS system Traffic Advisories and Resolution Advisories are suppressed at heights below approximately 300 – 1000 ft AGL (depending on the installation).

CAUSE

The incident is attributable to the following:

- SAA275 took off from runway 16 even though its flight crew had not received take-off clearance. None of the three cockpit crew members had realised that the take-off clearance applied not to them, but to an aircraft which was ready for take-off from runway 28.
- neither the ADC ATCO nor the GRO ATCO noticed that it was SAA275 which read back the take-off clearance, rather than SWR754.

SAFETY RECOMMENDATION Nr. 271

The Federal Office for Civil Aviation should arrange that when flight crews are simultaneously granted taxiing clearance to their take-off position on different runways, they should be provided with additional accompanying information such as, for example, information concerning the take-off sequence. This would lead to increased awareness of the situation on the part of crews.

Berne, 15 September 2004

Aircraft Accident Investigation Bureau

This report has been prepared 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)

All times are specified in the universal time coordinated (UTC) format (local time – 1hour).

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

Investigation into the **incident** that occurred on **21.03.2003**

| | |
|--|---------------------------------------|
| - Subject of transcript: | SAA275/SWR754 |
| - Centre concerned: | Swiss Radar Area East |
| - Designation of unit: | TCZ |
| - Frequency / Channel: | 121.8 MHz |
| - Date and period (UTC) covered by attached extract: | 21.03.2003 19:30:11 - 19:31:57 UTC |
| - Date of transcript: | 30.09.2003 |
| - Name of official in charge of transcription: | Franz FISCHBACH |

- 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, 30.09.2003

Franz FISCHBACH

Abbreviations

Sector Designation of sector

CLD - Clearance Delivery Zurich

| <u>Aircraft</u> | - | <u>Callsign</u> | | <u>Type of acft</u> | <u>Flight rules</u> | <u>ADEP</u> | - | <u>ADES</u> |
|-----------------|---|-----------------|------------|---------------------|---------------------|-------------|---|-------------|
| 754 | - | SWR754 | Swiss | E145 | IFR | LSZH | - | ELLX |
| 275 | - | SAA275 | Springbock | B743 | IFR | LSZH | - | FAJS |

OZEX-fb / 30.09.2003

TRANSCRIPT SHEET

Occurrence: SAA275/SWR754 of 21.03.2003



| 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> |
|--------------------|----------------------|----------------------|--|------------------------------|
| CLD | 754 | 19:30:11 | Zurich Clearance Delivery, "guete obig" SWR754, Embraer 145, Hotel 82, with information, for start up | |
| 754 | CLD | :19 | SWR754, good evening, slot starting 56, you're cleared to Luxemburg, runway 28, Lasun 3 yankee, squawk 3047 | |
| CLD | 754 | :30 | Cleared to Luxemburg, runway 28, Lasun 3 yanlee. Squawk 3047, SWR754 | |
| 754 | CLD | :37 | Correct, for start up stand by on Apron. 121 point 75, good evening | |
| CLD | 754 | :40 | Standin by on Apron, SWR754, bye bye | |
| CLD | 275 | 19:31:29 | Zurich delivery, SAA275.....* uniform, good evening | *unreadable |
| 275 | CLD | :34 | SAA275, good evening, confirm fully ready? | |
| CLD | 275 | :36 | We are fully ready, SAA275 | |
| 275 | CLD | :40 | Okay, you're will be runway 16 to Johannesburg, Gersa 3 uniform departure, your squawk is 1420, slot starting 51 | |
| CLD | 275 | :47 | Johannisburg, runway 16, Gersa 3 uniform, squawk 1420, SAA275 | |
| 275 | CLD | :53 | SAA275, for start up stand by on Apron, 121 point 75, good evening | |
| CLD | 275 | :57 | Stand by Apron 12175, SAA275, good night | |

- end -

Transcript SAA 275

Date: 21.03.03 20:43 – 20:47 lt

Transcript of tape recording frequency 121,75 MHz (Apron South)

| From | To | Time LT | Communications |
|---------|---------|-----------|--|
| AC | SAA275 | 20.:43:44 | SAA275 for your information your traffic will be a opposite DLH Regional Jet I'll call you back. |
| SAA275 | AC | :50 | SAA275 |
| AC | SAA275 | :44:25 | SAA275 when clear of the DLH Regional Jet make a one eighty to the right taxi via Echo hold short RWY 28 |
| SAA275 | AC | :31 | Roger behind the DLH one eighty via Echo holding short of 28 SAA275 |
| SWR49KX | AC | :37 | Züri Guetä Abig SWR49KX crossing 28 on Fox |
| AC | SWR49KX | :40 | SWR49KX Apron Guetä Abig turn now to the left taxi via Alpha and Kilo to stand A03 |
| SWR49KX | AC | :46 | Alpha Kilo for A03 SWR49KX |
| AC | DLH5404 | :50 | DLH5404 continue now slowly and for information the SAA is doing a one eighty to the right when clear taxi via Inner and Mike to stand C01 |
| DLH5404 | AC | :45:00 | Inner and Mike to C01 and we keep slowly 5404 |
| AC | DLH5441 | :05 | DLH5441 hold short RWY 28 |
| DLH5441 | AC | :09 | Hold short RWY 28 DLH5441 |
| AC | DLH5441 | :11 | Dankä schön DLH5441 contact GRO 121,9 schönen Abend tschüss |
| DLH5441 | AC | :16 | 121,9 tschüss DLH5441 |
| SWR754 | AC | :20 | Züri Apron guetä Abig SWR754 standing by on your frequency |
| AC | SWR754 | :24 | SWR754 Apron Guetä Abig your start up is approved now |
| SWR754 | AC | :28 | Start up approved SWR754 |
| SWR736K | AC | :46:28 | SWR736K request taxi |
| AC | SWR736K | :30 | SWR736K make a one eighty to the left taxi via TWY Inner to the holding point RWY 28 |
| SWR736K | AC | :37 | Left turn via the Inner to the holding point 28 SWR736K |
| SWR7102 | AC | :41 | Apron SWR7102 Guetä Abig crossing 28 on Foxtrott |
| AC | SWR7102 | :45 | SWR7102 Apron Guetä Abig turn left via Alpha and ääh hold position please |
| SWR7102 | AC | :51 | Left turn into Alpha there we'll hold position |
| AC | SAA275 | :56 | SAA275 to confirm hold short RWY 28 |
| SAA275 | AC | :59 | Affirm hold short of 28 SAA275 |
| AC | SAA275 | :47:01 | Thank you GRO 121,9 good night |
| SAA275 | AC | :04 | Confirm the frequency please |
| AC | SAA275 | :06 | 121,9 good bye |
| SAA275 | AC | :08 | 121,9 SAA275 good evening |
| | | | |
| | | | |

Transcript SAA 275

Date: 21.03.03 20.48 – 20:49 lt

Transcript of tape recording frequency 121,85 MHz (Apron North)

| From | To | Time LT | Communications |
|--------|--------|----------|--|
| SAA275 | AC | 20:48:37 | Apron good evening SAA275 |
| AC | SAA275 | :40 | SAA275 good evening keep it rolling straight ahead on one ... ääh on Echo towards the holding point 16 |
| SAA275 | AC | :47 | o.k. SAA275 |
| AZA570 | AC | :49:00 | Apron good evening AZA570 |
| AC | AZA570 | :04 | Bona sera AZA570 continue TWY Delta Foxtrott hold short RWY 28 |
| AZA570 | AC | :09 | Delta Foxtrott hold short 28 570 |
| AC | SAA275 | :13 | SAA275 call TWR 118,1 good night have a good flight |
| SAA275 | AC | :19 | 118,1 SAA275 thank you and a good weekend |
| AC | SAA275 | :22 | Thank you |
| | | | |
| | | | |

Transcript SWR754

Date: 21.03.03 20:47 – 20:50 lt

Transcript of tape recording frequency 121,75 MHz (Apron South)

| From | To | Time LT | Communications |
|---------|---------|----------|--|
| SWR754 | AC | 20:47:53 | SWR754 ready for taxi |
| AC | SWR754 | :56 | SWR754 stand by short call you back in sequence |
| SWR754 | AC | :48:00 | Standing by SWR754 |
| AC | SWR770 | :27 | SWR770 are you ready for departure? |
| SWR770 | AC | :30 | Affirm 770 |
| AC | SWR770 | :32 | Thank you then make number one all the way |
| SWR770 | AC | :35 | Number one 770 |
| AC | SWR736K | :38 | SWR736K for your information you will be number two behind that company jumbolino on TWY Alpha |
| SWR736K | AC | :46 | o.k. but yeah number two that's copied SWR736K |
| AC | SWR754 | :50 | And SWR754 when clear of a company jumbolino overtaking you from the right taxi to the holding point RWY 28 behind |
| SWR754 | AC | :57 | Behind jumbolino coming from the right taxi to holding point RWY 28, SWR754 |
| AC | SWR770 | :49:19 | SWR770 TWR 118,1 schöne Abig |
| SWR770 | AC | :22 | 18,1 dankä glichfalls 770 |
| AC | SWR770 | :24 | Merci |
| AC | SWR736K | :26 | SWR736K TWR 118,1 schöne Abig |
| SWR736K | AC | :30 | 118,1 good night sir SWR736K |
| AC | SWR1028 | :37 | SWR1028 Apron guetä Abig ready for start up? |
| SWR1028 | AC | :41 | Äh yeah we just be closing door any second we'll be ready |
| AC | SWR1028 | :44 | o.k. |
| AC | SWR754 | :50:50 | SWR754 TWR 118,1 schöne Abig |
| SWR754 | AC | :53 | 118,1 SWR754 adiä dankä glichfalls |
| AC | SWR754 | :57 | Merci |
| | | | |
| | | | |

Flughafen Zürich, 12.05.2003

Für die Richtigkeit:

Jürg Suter, Leiter Flight Operations

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

Investigation into the **incident** that occurred on **21.03.2003**

- Subject of transcript: **SAA275/SWR754**

- Centre concerned: Swiss Radar Area East

- Designation of unit: TCZ

- Frequency / Channel: 121.9 MHz

- Date and period (UTC) covered by attached extract: 21.03.2003
19:47:03 - 19:48:13 UTC

- Date of transcript: 30.09.2003

- Name of official in charge of transcription: Franz FISCHBACH

- Certificate by official in charge of transcription:

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Zürich, 30.09.2003

Franz FISCHBACH

Abbreviations

Sector Designation of sector

GRO - Zurich Ground

| <u>Aircraft</u> | - | <u>Callsign</u> | <u>Type of acft</u> | <u>Flight rules</u> | <u>ADEP</u> | - | <u>ADES</u> |
|-----------------|---|-------------------|---------------------|---------------------|-------------|---|-------------|
| 275 | - | SAA275 Springbock | B743 | IFR | LSZH | - | FAJS |

OZEX-fb / 30.09.2003

TRANSCRIPT SHEET

Occurrence: SAA275/SWR754 of 21.03.2003



| <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> |
|---------------------------|-----------------------------|-----------------------------|---|-------------------------------------|
| GRO | 275 | 19:47:03 | Ground, good evening, SAA275 | |
| 275 | GRO | :06 | SAA275, good evening, hold short of runway 28 | |
| GRO | 275 | :10 | Hold short of 28, SAA275 | |
| 275 | GRO | :32 | SAA275 on Echo, cross now 28 | |
| GRO | 275 | :36 | On Echo, cross 28, SAA275 | |
| 275 | GRO | :48:09 | SAA275, contact Apron 12185 | |
| GRO | 275 | :13 | 12185, SAA275 good evening | |

- end -



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

Investigation into the **incident** that occurred on **21. March 2003**

- Subject of transcript: **SWR754/SAA275**
- Centre concerned: **Swiss Radar Area East**
- Designation of unit: **TCZ**
- Frequency / Channel: **118.1 MHz**
- Date and period (UTC) covered by attached extract: **21. March 2003
19:50:28 - 19:56:38 UTC**
- Date of transcript: **23. April 2003**
- Name of official in charge of transcription: **Franz Fischbach**

- 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, 23. April 2003

Franz Fischbach

Abbreviations

Sector Designation of sector

ADC - Zurich Tower
-

| <u>Aircraft</u> | <u>Callsign</u> | | <u>Type of acft</u> | <u>Flight rules</u> | <u>ADEP</u> | | <u>ADES</u> |
|-----------------|-----------------|------------|---------------------|---------------------|-------------|---|-------------|
| 275 | - SAA275 | Springbock | B743 | IFR | LSZH | - | FAJS |
| 736K | - SWR736K | Swiss | RJ1H | IFR | LSZH | - | EHAM |
| 770 | - SWR770 | Swiss | RJ1H | IFR | LSZH | - | EBBR |
| 3478 | - AFR3478 | Airfrance | E135 | IFR | LFLL | - | LSZH |
| HJH | - HB-XJH | | R22 Beta | VFR | LSZH | - | unknown |
| 5441 | - DLH5441 | Lufthansa | CRJ7 | IFR | LSZH | . | EDDF |
| 570 | - AZA570 | Alitalia | E145 | IFR | LIMC | - | LSZH |
| 754 | - SWR754 | Swiss | E145 | IFR | LSZH | - | ELLX |
| 33W | - SWR833W | Swiss | SB20 | IFR | EDDW | - | LSZH |
| HOS | - HB-FOS | | PC12 | IFR | EHLE | - | LSZH |
| 805 | - EZY805 | Easy | B737 | IFR | EGKK | - | LSZH |
| 61VD | - SWR641D | Swiss | SB20 | IFR | LSZA | - | LSZH |

TRANSCRIPT SHEET

Occurrence: SWR754/SAA275



Date: 21. March 2003

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

Frequency: 118.1 Zurich Tower

| | | | | |
|------|------|----------|--|------------|
| ADC | 275 | 19:50:28 | Tower, good evening, SAA275 | |
| 275 | ADC | :32 | SAA275, good evening, line up runway 16 | |
| ADC | 275 | :34 | Line up 16, SAA275 | |
| 736K | ADC | :36 | SWR736K, behind RJ100, line up runway 28 | |
| ADC | 736K | :40 | Behind RJ100, line up.....* | unreadable |
| 770 | ADC | :44 | SWR770, wind 050 degrees, 4 knots runway 28, cleared for take-off | |
| ADC | 770 | :50 | Cleared for take-off 28, 770 | |
| ADC | 3478 | :52 | Tower, good evening, AFR3478, established 14 | |
| 3478 | ADC | :55 | AFR3478 Tower, good evening, number two, wind shears reported on final and surface wind 060 degrees, 5 knots | |
| ADC | 3478 | :51:03 | Roger | |
| ADC | HJH | :05 | Heli JH, just passing Bremgarten outbound | |
| HJH | ADC | :09 | Heli JH you may leave, adé | |
| ADC | HJH | :11 | Change to 1247, "bis spöter" JH | |
| 5441 | ADC | :15 | DLH5441, contact departure, "tschüs" | |
| ADC | 5441 | :19 | "Tschüs" DLH5441 | |
| ADC | 570 | :22 | Tower hallo, 570, short of Foxtrott | |
| 570 | ADC | :24 | AZA570, hallo again, hold short of runway 28, departing traffic | |
| ADC | 570 | :28 | Hold short of 28, 570 | |
| ADC | 754 | :32 | Zurich Tower, "guete obig", ,SWR754, approaching holding point 28, ready in sequence | |
| 754 | ADC | :39 | "grüezi", call you back. Break, break. AZA570, cross runway 28 at Foxtrott, contact Apron 121 decimal 75, "ciao" | |
| ADC | 570 | :44 | Cleared cross Foxtrott, Apron 12175, 570 "ciao" | |
| 754 | ADC | :48 | SWR754, "guete obig", behind RJ100 line up runway 28 | |
| ADC | 754 | :52 | Behind jumbolino line up runway 28, SWR754 | |
| 3478 | ADC | :52:00 | AFR3478, wind 060 degrees, 6 knots runway 14, cleared to land | |

Signature of person
in charge of transcription:

TRANSCRIPT SHEET

Occurrence: SWR754/SAA275



Date: 21. March 2003

| To Col.1 | From Col.2 | Time Col.3 | Communications Col.4 | Observations Col.5 |
|-------------|---------------|---------------|---|---|
| ADC | 3478 | :05 | Cleared to land 14, 3478 | |
| 33W | ADC | :07 | SWR833W, contact Apron 121 decimal 85 | |
| ADC | 33W | :11 | 12185, SWR833W | |
| 770 | ADC | :13 | SWR770, contact departure, adié | |
| ADC | 770 | :15 | Departure, adié 770 | |
| 736K | ADC | :19 | SWR736K, wind 060 degrees, 4 knots rinway 28, cleared for take-off | |
| ADC | 736K | :24 | cleared take-off 28, SWR736K | |
| 736K | ADC | :53:37 | SWR736K, contact departure, adié | |
| ADC | 736K | :40 | Contact departure, good night madame, SWR736K | |
| 736K | ADC | :43 | Good night | |
| ADC | 805 | :54 | EZY805, Tower | |
| ADC | HOS | :57 | Tower, "guete obig", HB-FOS, established ILS 14, after landing proceeding to sector 7 | |
| HOS | ADC | :54:04 | HB-FOS Tower, roger, wind 080 degrees, 7 knots runway 14, cleared to land. For information, wind shears reported on final | |
| ADC | HOS | :12 | Cleared to land 14, HOS | |
| ADC | 805 | :15 | Tower, EZY05, holding short 28 | |
| 805 | ADC | :17 | EZY805, hallo again, hold short of runway 28 | |
| ADC | 805 | :21 | Hold short 28, EZY805 | |
| 754 | ADC | :22 | SWR754, wind 070 degrees, 5 knots runway 28, cleared for take-off | |
| ADC | 275 | :26 | Cleared for take-off 16, SAA275 ** | **background noise, two stations simultaneous |
| 3478 | ADC | :28 | AFR3478, contact Apron 121 decimal 85 | |
| ADC | 3478 | :31 | 12185 | |
| ADC | 33W | :45 | Zurich Tower, hallo, SWR833W, holding short runway 28 | |
| 33W | ADC | :49 | SWR833W, hallo again | |

Signature of person
in charge of transcription:

TRANSCRIPT SHEET

Occurrence: SWR754/SAA275

Date: 21. March 2003



| <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> |
|---------------------------|-----------------------------|-----------------------------|--|-------------------------------------|
| 805 | ADC | :55:21 | EZY805, cross runway 28 Foxtrott, contact Apron, 12175, good bye | |
| ADC | 805 | :26 | Cleared Foxtrott, 12175, EZY805 | |
| 754 | ADC | :30 | SWR754, contact departure, adié | |
| ADC | 754 | :33 | Over to departure, SWR754, adié | |
| 33W | ADC | :35 | SWR833W, cross runway 28 Foxtrott, contact Apron 12175, good bye | |
| ADC | 33W | :40 | Cross runway 28 on Foxtrott, 12175, "tschüs" | |
| ADC | 61VD | :56:16 | "Züri, grüezi", SWR61VD is 4 miles 14 | |
| 61VD | ADC | :19 | SWR61VD, "grüezi" | |
| 275 | ADC | :22 | SAA275 | |
| ADC | 275 | :23 | Go ahead | |
| 275 | ADC | :25 | You departed without take-off clearance. We are now checking "äh" the "äh" the tape and we will keep you advised | |
| ADC | 275 | :34 | Roger, SAA275 | |
| 275 | ADC | :36 | SAA275, contact departure. 12595, bye | |
| ADC | 275 | :38 | 12595, SAA275 | |

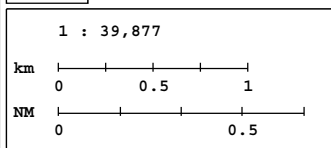
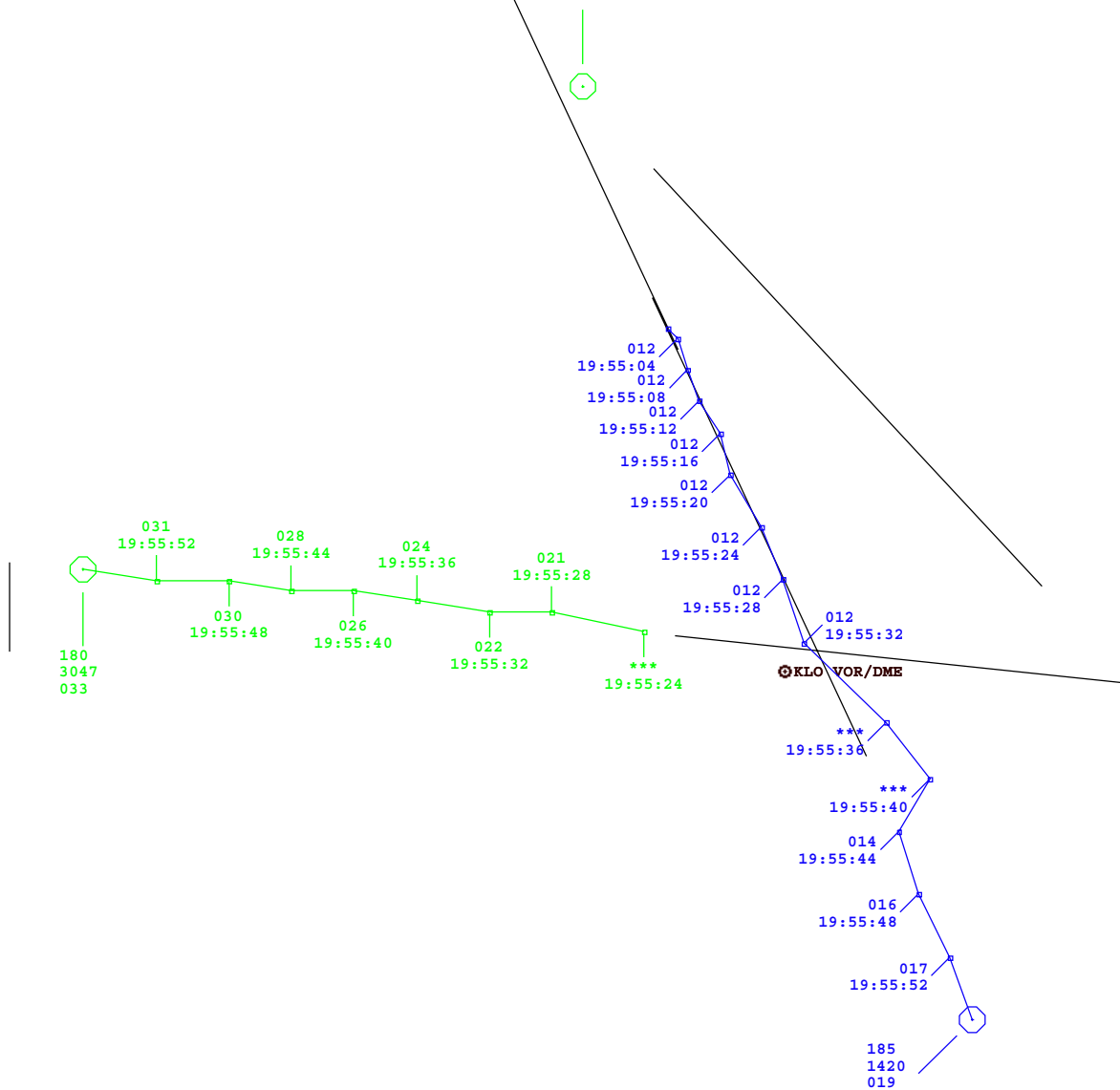
Signature of person
in charge of transcription:

A handwritten signature in blue ink, appearing to be "F. Frank".

Src
HL1

Analysis: SAA275 / SWR754 Time [UTC]: 21.03.2003 19:55:58

146
7641
013



Name: Claudio Di Palma OZEO-dc Eval Date: 03.12.2003