



Final Report of the Aircraft Accident Investigation Bureau

concerning the incident (Airprox)

between SWR551R, HB-IQG and I-SDFG

on 13th July 1999

14 NM TD ILS RWY 14, Zurich Airport

FINAL REPORT

AIR TRAFFIC INCIDENT REPORT (ATIR) AIRPROX (NEAR COLLISION)

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)

PLACE/DATE/TIME Zurich, 14 NM TD ILS RWY 14, 13 July 1999, 08:52 UTC

AIRCRAFT

1. SWR 551R, Airbus A330, HB-IQG, Swissair
2. I-SDFG, Hawker Siddeley HS25A,

ATC UNIT Approach control office

AIRSPACE C

HISTORY

HB-IQG, an Airbus A330 of Swissair, was arriving from Munich on 13 July 1999 and on approach to the ILS 14 (instrument landing system of Runway 14) of Zurich-Kloten. The aircraft, with the flight number SWR 551R, was guided by FINAL control (Zurich arrival final sector) and was flying on a heading of 160° to intercept the ILS 14. When it had reached a distance of approximately 16 NM from TD (touch down), FINAL found that the Hawker Siddeley HS25A, I-SDFG, flying under the guidance of APW (Zurich arrival west sector) was approaching the ILS 14 from the west and could later come into conflict with SWR 551R. FINAL immediately informed SWR 551R about the position of I-SDFG and instructed the A330 to expedite its descent in order to achieve vertical separation as rapidly as possible. A little later, after co-ordination with APW (Zurich Arrival West Sector), FINAL informed the Swissair aircraft about the flight path which had been instructed to HS25A. The crew of SWR 551R had a warning at the same time from the TCAS (traffic collision avoidance system). The Swissair crew subsequently achieved visual contact with I-SDFG.

Approximately three minutes before SWR 551R had been accepted by FINAL, APW had cleared the I-SDFG into the holding pattern EKRON and to FL 60. However, the HS25A passed EKRON and continued its flight path in the north-easterly direction. When it was approximately 5 NM NE of EKRON, APW recognised this deviation from the clearance and instructed I-SDFG to make a right turn in order to remain clear of the approach axis of ILS the 14. The answer from I-SDFG now made it clear that the Italian aircraft was in the process of starting an approach with its own navigation system. I-SDFG again received the instruction to immediately turn to the right because of other traffic. Although the pilot correctly confirmed this instruction, he did not carry it out and, instead, flew for about another 30 seconds on an almost easterly heading and began to turn onto the localiser. Approximately one minute later, he reported himself ready for the descent and, at the same time, stated that he had a Swissair aircraft in sight. APW again expressly instructed a right turn, whereupon the Italian aircraft finally turned away sharply to the west in the direction of EKRON.

FINDINGS

- Both aircraft were flying in class C controlled airspace.
- Both aircraft were flying according to IFR (instrument flight rules) and were in continuous radio contact with the responsible air traffic control units, SWR 551R being guided by FINAL and I-SDFG being guided by APW.
- When SWR 551R was informed for the first time by FINAL about the position of I-SDFG and was given the instruction to expedite the descent, both aircraft were approximately at the same altitude (FL60) and their lateral distance was 4.3 NM.
- When SWR 551R reported the TCAS warning, there was an altitude difference of 300 ft and a lateral distance of 2.6 NM.
- At a lateral distance of a good 1 NM and an altitude difference of approximately 1000 ft, SWR 551R reported visual contact with I-SDFG.

- The instruction by APW to I-SDFG: “Sierra Fox Golf, Zurich Arrival, hold over EKRON, short delay, thereafter radar vectoring ILS runway 14” to fly into the EKRON holding pattern and to hold there until the beginning of the radar vectoring to the ILS 14, was not read back by the crew of I-SDFG.
- When I-SDFG was approximately 5 NM NE of EKRON, APW instructed the Italian aircraft to execute a right-hand turn. I-SDFG did not do this but continued to fly on a heading of 070° for approximately 30 seconds.
- APW then instructed the HS25A once again to turn away immediately to the right. I-SDFG then initiated a slight right turn onto a heading of approximately 110°.
- I-SDFG reported itself 1000 ft higher than and 0.5 NM to the west of SWR 551R ready for the descent. At this time, the crew of I-SDFG had visual contact with the Swissair aircraft.
- APW instructed I-SDFG with emphasis to continue the right-hand turn to a heading of 270° and to return to the EKRON holding pattern. I-SDFG finally carried out this instruction.
- Weather: ATIS Zurich of 13.07.99 Information Bravo
 - Wind from 300° at 4 knots
 - Ground visibility 6 km
 - Thunderstorm and rain
 - Clouds: 1-2/8 at 600 ft/GND, 1-2/8 with CBs at 2000 ft/GND, 3-4/8 at 4500 ft/GND, 5-7/8 at 15000 ft/GND.
 - Temperature 17°C, Dewpoint 16°C
 - QNH 1013 hPa
 - Temporarily visibility 3000 m with possible thunderstorm and rain.
- According to the statement by the crew, SWR 551R was sometimes in clouds during the incident (“between layers, in and out”). The flight visibility was 6 km and there was haze.

ANALYSIS

The reactions and instructions of FINAL took place rapidly and expediently. Although those of APW were also expedient, there was a slight time delay. This delay can be attributed to the fact that APW initially wished to follow without intervening how I-SDFG was joining the EKRON holding pattern.

SWR 551R followed all instructions from FINAL without delay.

The reason why I-SDFG did not remain in the EKRON holding pattern but, instead, obviously started to execute a standard ILS approach to Runway 14 using their own navigation system is probably to be sought in a misunderstanding. The recording of the radio communication between APW and I-SDFG suggests that the crew of the Italian aircraft obviously assumed that they had obtained the clearance for a standard

ILS approach to Runway 14. On the other hand, the enquiry of the crew with respect to a descent clearance indicates that they were not so sure of their actions.

In addition, the before mentioned inexpedient instruction from the air traffic controller (mixture of clearance and unnecessary information) led to the incorrect interpretation of the clearance by the crew of I-SDFG. In order to avoid such incorrect interpretation, the phraseology: "India Fox Golf, Zurich Arrival, short delay, proceed to EKRON and hold" could have been more appropriate. Reason: the latter part leaves the most permanent impression.

If I-SDFG had reacted without delay to the first two instructions from APW, to initiate a right turn in the western direction, the closure on to SWR 551R would in all probability not have occurred.

Although the separation between the two aircraft was clearly below the minimum values at times, the traffic informations of the air traffic control, the TCAS warning at SWR 551R and mutual visual contact at times on the part of the two cockpit crews eased the situation to the extent that there was no serious risk of collision.

CAUSE

The incident has to be attributed to the fact that I-SDFG did not respect the EKRON clearance limit provided and started to execute a standard ILS approach to Runway 14 using their own navigation system.

The following contributed to the incident:

- The slow reaction of I-SDFG to the instructions of APW to carry out a change in heading.
- The fact that the responsible air traffic controller did not demand a read-back (confirmation) of his clearance "hold over Ekron" from I-SDFG.
- Use of inexpedient phraseology by both the crew and the air traffic controller.

Bern, 30 May 2001

Swiss Aircraft Accident Investigation Bureau



Flugsicherungsbetrieb Zürich
CH-8058 Zürich-Flughafen

Zürich-Flughafen, 9.8.1999
ZZD

Transcript of Original Tape Recording

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Subject **AIRPROX SWR551R of July 13 1999**

Abbreviations	551R	→	SWR551R	→	Swissair
and Call Signs	IFG	→	ISDFG	→	private
	FIN	→	Zurich Arrival Final Sector		
	APW	→	Zurich Arrival West Sector		

Frequencies Zurich Arrival Final Sector Radar 125,325 MHz
 Zurich Arrival West Sector Radar 118,000 MHz

The signer certifies the completeness and correctness of the present transcript.

swisscontrol
Flugsicherungsbetrieb Zürich

A handwritten signature in black ink, appearing to read "N. Scherrer".

Nicky Scherrer

From	To	Time UTC	Communications	Observations
551R	FIN	08:50:30	Final "Grüezi", SWR551R	
FIN	551R	:34	SWR551R, Final, "Guete Tag"	
FIN	551R	:51:33	SWR551R, left turn heading 220, descend to 5000 feet on QNH 1013	
551R	FIN	:39	Left turn 220, 5000 feet, 1013, SWR551R	
FIN	551R	:52:18	SWR551R, left turn heading 160, cleared ILS approach 14	
551R	FIN	:22	Left turn heading 160, cleared ILS approach runway 14, SWR551R	
FIN	551R	:28	Roger, leave 5000 feet on the glidepath	
551R	FIN	:32	Will leave 5000 feet on the glide, SWR551R	
FIN	551R	:53:00	SWR551R, expedite descent please, another traffic at your three o'clock, correction, nine o'clock position, stand-by short, call you back	
551R	FIN	:10	SWR551R, on the TCAS	
FIN	551R	:12	Ja sorry, three o'clock position, two miles, it 's now almost same direction in a right turn towards to the southwest	
551R	FIN	:24	Yes, we have the warning, SWR551R	
FIN	551R	:28	551R, thank you	
551R	FIN	:42	Traffic in sight, SWR551R	
FIN	551R	:44	"Ja, Danke", now clear of traffic	
551R	FIN	:52	What is he doing?	
FIN	551R	:56	SWR551R, clear of traffic and speed at your convenience,---,yes, he is just above one thousand feet	
551R	FIN	:54:00	What is he doing?	

From	To	Time UTC	Communications	Observations
FIN	551R	08:54:02	He should be turning to the west again, he is not going onto the ILS	
551R	FIN	:08	He is intercepting the ILS we guess	
FIN	551R	:16	SWR551R, it looks like it, but he should be turning to the west, I call you back	
551R	FIN	:23	Roger	
FIN	551R	:50	SWR551R, reduce the speed now below one eighty, the traffic is now clear of the ILS, if you wish, call us after landing extension 63908	
551R	FIN	:55:10	63908, "Danke"	
551R	FIN	:22	Established ILS 14, SWR551R	
FIN	551R	:26	SWR551R, roger, reduce as convenient, 4 decimal 5 nautical miles behind a Hawker Siddeley Jet, contact tower 118 decimal 1	
551R	FIN	:31	"Ade", SWR551R	

- end -

Transcript from Zurich Arrival West Sector:

IFG	APW	08:47:00	Zurich, good morning, ISDFG
APW	IFG	:03	SFG, Zurich Arrival, hold over EKRON, short delay, thereafter radar vectoring ILS runway 14
IFG	APW	:09	FG

Further transmissions (2) between Zurich Radar and other aircraft

APW	IFG	:55	IFG, descend to flight level 90
AFG	APW	:58	Recleared flight level zero niner zero, may we slow down to 230 ?
APW	IFG	:48:04	Affirm, that is approved

Further transmission (1) between Zurich Radar and another aircraft

From	To	Time UTC	Communications	Observations
APW	IFG	08:49:12	IFG, descend to flight level 70	
IFG	APW	:16	Recleared to flight level zero seven zero	
Further transmissions (2) between Zurich Radar and other aircraft				
APW	IFG	:50:50	IFG, descend to flight level 60	
IFG	APW	:54	Recleared to flight level zero six zero, FG	
IFG	APW	:52:12	May we slow down to 210?	
APW	IFG	:15	Affirm, FG	
APW	IFG	:36	IFG, start a right turn to remain clear of the final track	
IFG	APW	:41	Starting right turn on track to be established	
APW	IFG	:45	FG, you are already five miles northeast of EKRON	
IFG	APW	:51	O-kay, can we continue on a standard or you want that we make a right turn now?	
APW	IFG	:55	Turn immediately right due to traffic	
IFG	APW	:59	Immediate to the right	
IFG	APW	:53:52	FG, we are ready for descent and we have also a traffic, Swissair, in sight	
APW	IFG	:57	FG, continue your right turn, you are expected to be in the EKRON pattern	
APW	IFG	:54:12	IFG, for confirmation, I gave you the instruction to join the pattern at EKRON, turn back and make it heading 270 for the time	
IFG	APW	:24	Back 270, I'm sorry about that, but we were instructed to delay and for radar vectors	

From	To	Time UTC	Communications	Observations
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Further transmissions (2) between Zurich Radar and other aircraft

APW	IFG	08:56:31	IFG, turn right heading 020	
IFG	APW	:35	Right heading 020, FG	
APW	IFG	:38	FG, contact final 125 decimal 32	
IFG	APW	:41	12532, thank you	

-end-

