



# **Final Report of the Aircraft Accident Investigation Bureau**

concerning the incident (Airprox)

between KLM1931 and HB-OQS

on 1<sup>st</sup> february 2000

on the ground, at Geneva Airport

AIRCRAFT ACCIDENT INVESTIGATION BUREAU

# 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)

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<b>PLACE</b>	On the ground, at Geneva airport
<b>DATE/TIME</b>	1 February 2000 / 14:19 UTC
<b>AIRCRAFT</b>	1. KLM 1931, Boeing 737-400, Amsterdam-Geneva, 2. HB-OQS, Piper PA28A, local VFR flight

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<b>ATC SERVICE</b>	AERODROME CONTROL GENEVA
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<b>ATC CONTROLLER</b>	AERODROME CONTROLLER
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<b>AIRSPACE CATEGORY</b>	ON GROUND
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## HISTORY

On Tuesday 1 February 2000 at 14:19 UTC. flight KLM 1931 from Amsterdam to Geneva, aircraft type Boeing 737-400, making a regular commercial flight, was in final approach on runway 23, authorised to land by airport control.

At this time, a Cherokee type light aircraft, registration HB-OQS, holding at Yankee intersection, is authorised by airport control to line up behind aircraft KLM 1931, whilst an aircraft of the Speedbird company, flight 728, leaves the runway in front of it.

However, the Cherokee aircraft immediately aligns itself and finds itself on runway 23 during the landing phase of the Boeing 737. This event escapes the attention of the airport controller and consequently no measures are taken to eliminate the danger. The Boeing 737 touches down at the beginning of runway 23, brakes and leaves the runway at Charlie intersection, behind the aligned Cherokee.

The pilot of KLM 1931 notifies the controller that the runway was occupied during his landing and advises that he is submitting an incident report.

## FINDINGS

- The runway in operation at Geneva was runway 23.
- The 13:50 UTC meteorological bulletin was as follows: wind 080 degrees 4 knots, variable between 050 and 120 degrees, visibility 8 kilometres, clouds: scattered at 30 000 ft, temperature 6 degrees, dewpoint 3 degrees, atmospheric pressure 1023 hectoPascal. No changes forecast.
- At 14:20:10, Speedbird (BAW) 728, a Boeing 757 from London to Geneva, landed on runway 23. It received an instruction to leave the runway at the next intersection on its left.
- This intersection is the CHARLIE taxiway.
- In relation to the position of aircraft HB-OQS, the centre line of the CHARLIE taxiway is 100 metres to the left of the centre line of the YANKEE taxiway and the route of the Boeing 757 on this taxiway, opposite the waiting position of the aircraft.
- At 14:20:25, KLM 1931 is authorised to land by aerodrome control. The aircraft is 2.5 miles (nm) from the runway 23 touchdown zone.
- The runway distance from Touchdown 23 to Charlie intersection is 1400 metres.
- The runway distance from Touchdown 23 to Yankee intersection is 1500 metres.
- At 14:20:33, Speedbird (BAW) 728 is transferred to the TRAFFIC frequency and is on the CHARLIE taxiway, opposite the position of aircraft HB-OQS.
- At 14:20:40, HB-OQS is authorised to line up on runway 23, behind the incoming traffic.
- At this time, KLM 1931 is 2 miles (nm) or less than 60 seconds from touchdown.
- The pilot of HB-OQS acknowledges receipt of the authorisation to align, indicating "behind" and asks a question concerning the route to follow after take-off.
- At 14:21:55, the pilot of HB-OQS signals to the Control Tower that he is lined up on runway 23 and that he is ready for departure.
- The controller did not notice his intrusion onto the runway and therefore did not react.
- At 14:21:59, aerodrome control instructs KLM 1931 to leave the runway on its left via the CHARLIE taxiway.

- The pilot of KLM 1931 signals that there was another aircraft on the runway and advises that he is submitting an incident report. Until now no report has been received from the pilot of KLM 1931.

## **ANALYSIS**

The incident between KLM airlines flight 1931 and the Cherokee aircraft HB-OQS, a private flight, took place on the ground at the intersection of runway 23 and the Yankee taxiway, approximately 1500 metres from the landing zone of runway 23 at Geneva.

The controller indicated his intention to have the light aircraft take off behind the KLM aircraft when he intentionally reduced the speed of the aircraft following it, Jordanian 105.

One minute and 30 seconds elapsed between the time KLM received its authorisation to land and the time at which it was on the runway, approximately 100 metres behind the lined-up aircraft.

Approximately one minute elapsed from the time when HB-OQS lined up and the time at which it signalled that it was on the runway, ready for take-off.

Taking into account the position of the aircraft on the runway and the point at which KLM landed, the latter had approximately 1400 metres to touch down and brake. During this minute, 11 radio contacts took place between the Control Tower and the traffic in progress; this may explain why the controller did not react, his attention being elsewhere.

The pilot of HB-OQS declares in good faith that he obeyed the instructions received. The instruction to line up on the runway behind the incoming aircraft was clear but, quite clearly, there was confusion between the aircraft leaving the runway in front of him and the aircraft on final approach on runway 23. He deplores the fact that the Control Tower did not notice his mistake, in which case, according to his deposition, he would have left the runway. It is true that if the controller had seen him line up, he would just have had enough time to order KLM 1931 to open the throttle or, possibly, to clear the light aircraft urgently from the runway.

The Control Tower controller, in his deposition, states that he was surprised by the speed of events and explains that it was too late for any intervention when he realised the situation. The controller became aware of the danger only when the aircraft HB-OQS signalled its position on the runway to him, when the Boeing 757 was travelling at a controlled speed behind him, before leaving the runway via CHARLIE taxiway, 100 metres up the runway.

The phraseology used by the airport controller was standard but not sufficiently accurate for a conditional authorisation. It would have been wise to state "traffic on final approach or traffic landing" (original French: "trafic en courte finale ou trafic à l'atterrissage"). The pilot of aircraft HB-OQS probably misinterpreted the meaning of "incoming traffic" (original French: "trafic à l'arrivée").

The combination of light traffic and commercial traffic at Geneva is the source of numerous troublesome problems and therefore of potential danger, particularly when the grass runway is closed and the main runway is used by light traffic. (All take-offs in this traffic category take place from the YANKEE or ZULU intersections, depending on the runway in operation).

**CAUSE**

The incident is due to the premature alignment of a light aircraft on the runway in operation, in front of a commercial aircraft in landing phase. The pilot of the light aircraft misunderstood the aircraft indicated at the time of the line-up clearance issued by the Control Tower, which did not notice his intrusion onto the runway. Contributing factor: lack of precision in the line-up clearance.

**SAFETY RECOMMENDATIONS**

Phraseology is particularly important when conditional instructions are issued. It would therefore be useful to remind pilots and controllers to be extremely attentive and precise in READ-BACK and HEAR-BACK in order to avoid any mistake or misunderstanding.

Language problems may become crucial in certain situations. A misunderstanding often occurs as the result of a lack of precision which may be aggravated by chance.

Remind airport controllers to be extremely vigilant during take-offs from intersections. A visual check of the runway is of vital importance before issuing take-off or landing authorisations.

Also remind private pilots using the main runway that they must carry out a visual check of the approach axis before lining up, even after receiving authorisation from the Control Tower.

**TRANSCRIPT OF TELEPHONY  
OR RADIOTELEPHONY COMMUNICATIONS TAPE-RECORDING**

Investigation into the **incident** that occurred on **February 1<sup>st</sup> 2000**

- Subject of transcript:	<b>KLM1931 / HBOQS</b>
- Centre concerned:	Geneva
- Designation of unit:	Tower
- Frequency:	118.7 MHz
- Date and period covered by attached extract:	February 1 <sup>st</sup> 2000 14:16 – 14:23 UTC
- Date of transcript:	February 8 <sup>th</sup> 2000
- Name of official in charge of transcription service:	Monica Simonet

- Certificate by official in charge of Analysis Department:

I hereby certify:

- That the accompanying transcript of the telephony or radiotelephony communication tape-recording, retained at the present time in the premises of Analysis Department, has been made under my supervision.
- That it was 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.

Geneva, February 8<sup>th</sup> 2000

M. Simonet



TRANSCRIPT SHEET

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

**Frequency 118.7 MHz: Geneva Tower**

TWR	1931	14:16:	33	Geneva Tower good day, KLM one nine three one established on the ILS runway two three.	
1931	TWR		37	KLM one nine three one good afternoon, report two miles.	
TWR	1931		40	Wilco KLM one nine three one.	
TWR	HQS		58	<i>Genève Tour, Hotel Quebec Sierra bonjour.</i>	
HQS	TWR		01	<i>Bonjour Hotel Quebec Sierra, restez dégagé, je vous rappelle.</i>	
TWR	105	14:17:	15	Tower good afternoon, Jordanian one zero five on localizer two three.	
105	TWR		19	Jordanian one zero five good afternoon, report two miles final.	
TWR	105		24	Call you two miles final, Jordanian six zero, one zero five.	
728	TWR		37	Speedbird seven two eight cleared to land two three, wind calm.	
TWR	728		40	Cleared to land runway two three heu Speedbird seven two eight.	
727	TWR		57	Speedbird seven two seven, Departure, one two one decimal three, good-bye.	
TWR	727	14:18:	01	One two one three, good-bye.	
TWR	728		52	Speedbird seven two eight, two miles.	
728	TWR		55	Roger Speedbird seven two eight, I confirm, cleared to land two three, wind calm.	
TWR	728		59	Cleared to land two three, Speedbird seven two eight.	
105	TWR	14:19:	02	Jordanian one zero five, your speed ?	
TWR	105		04	Speed one eighty, Madame.	
105	TWR		06	Roger, reduce speed one six zero knots or less to permit departure.	
TWR	105	14:19:	08	Roger, Jordanian one zero five ?????	unreadable

Signature of  
person in charge:

## TRANSCRIPT SHEET

<u>To</u> <u>Col.1</u>	<u>From</u> <u>Col.2</u>	<u>Hour</u> <u>Col.3</u>	<u>Communications</u> <u>Col.4</u>	<u>Observations</u> <u>Col.5</u>
728	TWR	14:20: 10	Speedbird seven two eight vacate first left.	
TWR	728	12	First left, Speedbird seven two eight.	
<b>1931</b>	<b>TWR</b>	<b>25</b>	<b>KLM one nine three one wind one one zero degrees five knots, cleared to land two three.</b>	
<b>TWR</b>	<b>1931</b>	<b>30</b>	<b>Cleared to land two three, KLM one nine three one.</b>	
728	TWR	33	Speedbird seven two eight contact Apron, one two one decimal seven five, good-bye.	
TWR	728	37	One two one seven five, bye.	
<b>HQS</b>	<b>TWR</b>	<b>40</b>	<b><i>Hotel Quebec Sierra, derrière le trafic à l'arrivée, alignez-vous piste vingt-trois, derrière.</i></b>	
<b>TWR</b>	<b>HQS</b>	<b>44</b>	<b><i>Derrière le trafic s'aligne Quebec Sierra. Tour, est-ce que j'peux faire une sortie directe ... via Sierra, s'il vous plaît.</i></b>	<i>Poor quality of transmission, difficult to understand</i>
<b>HQS</b>	<b>TWR</b>	<b>51</b>	<b><i>Par Sierra, compris.</i></b>	
<b>TWR</b>	<b>HQS</b>	<b>53</b>	<b><i>Merci.</i></b>	
273	TWR	55	Edilink two seven three approaching Morges, three thousand feet.	
TWR	273	58	Edilink two seven three roger, contact Geneva Information, one two six decimal three five, good-bye.	
273	TWR	14:21: 04	One two six three five, au revoir.	
TWR	HJZ	07	La Tour, hélicoptère Hotel Bravo X-Ray Juliett Zulu, bonjour.	
HJZ	TWR	10	Hélicoptère Juliett Zulu bonjour.	
TWR	HJZ	12	Juliett Zulu au C A L, prêt à décoller direction Novembre, local.	
HJZ	TWR	15	Hélicoptère Juliett Zulu compris, autorisé au décollage, route Novembre, le vent cent degrés cinq nœuds.	
TWR	HJZ	14:21: 20	Juliett Zulu.	
TWR	506	24	Tower good afternoon, the Rubens ?????? six approaching the holding point two three. We will be ready from XXXXX.	<b>Two stations calling at the same time / unreadable / probably: "Bravo".</b>

Signature of  
person in charge:



## TRANSCRIPT SHEET

<u>To</u> <u>Col.1</u>	<u>From</u> <u>Col.2</u>	<u>Hour</u> <u>Col.3</u>	<u>Communications</u> <u>Col.4</u>	<u>Observations</u> <u>Col.5</u>
506	TWR	32	Roger Rubens five zero six good afternoon, hold short of two three, intersection Bravo.	
TWR	506	37	Hold short intersection Bravo, Rubens... five zero six.	
<b>TWR</b>	<b>HQS</b>	<b>55</b>	<b><i>Tour XXXXX aligné vingt-trois béton, prêt pour l'départ.</i></b>	<i>Probably: "Quebec Sierra" / Poor quality of transmission</i>
1931	TWR	59	KLM one nine three one vacate left here, via Charlie.	
TWR	1931	14:22: 02	Yea, there was another.. aircraft on the runway.	
1931	TWR	05	Yes, I could see that. He was lining up just before.	
TWR	1931	09	Yes.	
1931	TWR	11	I'm, sorry about that; one two one seven five.	
TWR	1931	14	Yea, we have to report that.	
1931	TWR	16	Ah roger.	
<b>HQS</b>	<b>TWR</b>	<b>23</b>	<b><i>Hotel Quebec Sierra autorisé pour un décollage immédiat, zéro soixante degrés, quatre nœuds, virage à gauche sur Sierra.</i></b>	
<b>TWR</b>	<b>HQS</b>	<b>28</b>	<b><i>Quebec Sierra autorisé, merci.</i></b>	<i>Poor quality of transmission</i>
TWR	1931	44	Tower, KLM one nine three one ?	
105	TWR	51	Jordanian one zero s..., five cleared to land two three, wind zero six zero degrees four knots.	
TWR	105	55	Jordanian one zero five, cleared to land two three.	
1931	TWR	57	Ge., go ahead KLM one nine three one.	
TWR	1931	14:23: 00	Confirm the registration of the aircraft just taking off is... Hotel Bravo Oscar Quebec Sierra ?	
1931	TWR	07	Yes, that is correct.	
TWR	1931	09	Thank you.	

Signature of  
person in charge:

TRANSCRIPT SHEET

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

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Abbreviations

TWR - Geneva Tower

<b>1931</b> - <b>KLM1931</b>	<b>B734</b>	<b>IFR flight</b>	<b>EHAM</b> - <b>LSGG</b>
<b>HQS</b> - <b>HBOQS</b>	<b>PA28A</b>	<b>VFR flight</b>	<b>LSGG</b> - <b>LSGG</b>
105 - Royal Jordanian 105	A320	IFR flight	OJAI - LSGG
728 - Speedbird 728	B752	IFR flight	EGLL - LSGG
727 - Speedbird 727	B752	IFR flight	LSGG - EGLL
273 - HELI-LINK 273	BH06	VFR flight	LSGG - LSZH
HJZ - HBXJZ	R22	VFR flight	LSGG - LSGG
506 - Rubens 506	F50	IFR flight	LSGG - EBAW

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Signature of  
person in charge:

