



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Büro für Flugunfalluntersuchungen
Bureau d'enquête sur les accidents d'aviation
Ufficio d'inchiesta sugli infortuni aeronautici
Uffizi d'investigaziun per accidents d'aviatica

Aircraft accident investigation bureau

Final Report No. 1888 of the Aircraft Accident Investigation Bureau

concerning the incident (Airprox)

between AZA327 and VBA1067

on 19 July 2004

MEDAM, Geneva

FINAL REPORT

AIR TRAFFIC INCIDENT REPORT (ATIR)

AIRPROX (NEAR MISS)

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	MEDAM, Geneva, 19.07.2004, 17.28 UTC
AIRCRAFT	AZA 327, McDonnell Douglas MD82, I-DAWG, Alitalia Paris Charles De Gaulle - Rome Fiumicino VBA 1067, Airbus A320, PH-VAC, V. Bird Airlines Netherlands Niederrhein - Nice
ATC UNIT	Swiss Radar Area West UAC
CONTROLLER	Radar operator K3/L3 Coordinator K3/L3
AIRSPACE	A

HISTORY

On Monday 19 July 2004, at 17:12 UTC, the pilot of aircraft AZA 327, a commercial flight between Paris Charles De Gaulle and Rome Fiumicino, called Geneva control sector L3/K3 on frequency 134.315 MHz. It was cleared by a trainee controller, under supervision, to follow route MOKIP-KOGAS-TOP at flight level FL 330.

A 17:14, the crew of aircraft VBA 1067, a commercial flight between Niederrhein and Nice, called Geneva control sector L4 on frequency 133.630 MHz and requested a direct route to point MEDAM. It was cleared by the radar controller to maintain flight level FL 390, direct route MEDAM-VEVAR.

At 17:24, the radar controller instructed the crew of aircraft VBA 1067 to continue on its present heading because of conflicting traffic and to descend to flight level FL 350. The pilot read back this clearance. Two minutes later, the radar controller informed him that he was separated from the traffic, that he could resume his own navigation and handed him over to sector L3/K3 on frequency 124.030 MHz.

At 17:26, the crew of aircraft VBA 1067 reported flight level FL 350 on frequency 124.030 MHz. The radar controller identified it and instructed it to descend to flight level FL 340. The pilot read back this clearance.

At 17:26:43, the pilot asked the radar controller to confirm the flight level for which he was cleared; the latter responded to him: "VBA 1067, cleared level is 340, maintain flight level 340, further descent in 3 minutes ". The pilot then confirmed: "Okay, going back to 340, VBA 1067 ".

At 17:26:58, the STCA alert (an automatic alert predicting loss of required separation between aircraft) was triggered and the radar controller realised that flight VBA 1067 was passing flight level 336. He immediately informed the pilot of aircraft AZA 327 of the conflicting traffic and issued him with essential traffic information. The pilot answered that he could see the traffic on his TCAS (onboard collision avoidance system) which issued a TA (traffic advisory) and that he was under IMC conditions (instrument meteorological conditions).

At 17:27:10, flight VBA 1067 was at flight level FL 331, at a distance of 5 NM from the point of intersection. The radar controller then instructed the pilot to climb immediately.

At 17:27:46, flight VBA 1067 crossed the route of flight AZA327, at flight level FL 339 and with a lateral distance of 2 NM.

FINDINGS

- The incident took place at 17:26:58, 25 NM north of MEDAM, in class A delegated French airspace, at flight level FL 330.
- At the time of the incident, sectors K3 (frequency 134.315 MHz) and L3 (frequency 124.030 MHz) were coupled.
- At the time of the incident, flight AZA 327 as well as flight VBA 1067 were in contact with and under radar control of Sector K3/L3.
- The radar controller in charge of sector L3/K3 was on training, under the direct supervision of a coach radar controller.

All times indicated in the report are in UTC (LT – 2 hours)

- The coach radar controller as well as the coordinator were in possession of an appropriate licence.
- All the radiotelephony exchanges between flights AZA 327, VBA 1067 and the radar controllers took place using English phraseology.
- The aircraft of flight AZA 327 as well as the aircraft of flight VBA 1067 were TCAS equipped.
- At 17:14:05, the pilot of aircraft VBA 1067 called radar sector L4, reporting his flight level FL 390. The radar controller identified flight VBA 1067 and cleared it on a direct route MEDAM-VEVAR. The pilot read back this clearance.
- At 17:23:49, the sector L4 radar controller instructed the pilot of flight VBA 1067 to continue on his present heading and to descend to flight level FL 350. The pilot read back this instruction.
- At 17:25:36, the radar controller cleared flight VBA 1067 to resume its own navigation and handed it over to the L3/K3 sector frequency 124.030 MHz.
- At 17:12:41, the pilot of aircraft AZA 327 called radar sector L3/K3, reporting his flight level FL 330. The radar controller identified flight AZA 327 and cleared it on route MOKIP-KOGAS-MEDAM-TOP. The pilot read back this clearance.
- At 17:23:02, the pilot of flight AZA 327 asked if he could maintain his present heading because of the weather. The radar controller answered "Roger, it's approved".
- At 17:25:14, the radar controller called the crew of flight AZA 327 to inform it of traffic "traffic at nine o'clock... crossing your level on your left hand side, distance one zero miles". The pilot read back "AZA 327, copied".
- At 17:25:57, the crew of flight VBA 1067 called on sector L3/K3 frequency 124.030 MHz, reporting flight level FL 350. The radar controller identified it and cleared it to descend to flight level 340. The pilot read back "Descend flight level 340, VBA 1067".
- At 17:26:12, the radar controller informed the pilot of flight AZA 327 that he could fly direct to TOP when clear of the bad weather. The pilot read back this clearance.
- At 17:26:43, the pilot of flight VBA 1067 asked the radar controller to confirm his cleared flight level. The latter replied that the cleared flight level was FL340, that he should maintain flight level 340 and that he could expect a further descent in 3 minutes. The pilot read back "Going back to three four zero, VBA 1067".
- At 17:26:58, the STCA indicated a proximity alert to the radar controller. According to the radar plots, the two aircraft were at this moment on a converging heading, at a lateral distance of 5 NM and with an altitude difference of 600 ft. At the same time the radar controller reported the conflicting traffic to the pilot of flight AZA 327: "AZA 327, traffic, twelve o'clock... climbing now one thousand feet... above you".
- At 17:27:06, the pilot of flight AZA 327 replied "AZA 327, we have traffic on TCAS... we are in IMC".
- At 17:27:10, the radar controller instructed the pilot of flight VBA 1067 to climb immediately to flight level FL 340. According to the radar plots, the latter was at flight level FL 331, at a lateral distance of 4.1 NM from flight AZA 327.

All times indicated in the report are in UTC (LT – 2 hours)

- At 17:27:19, the pilot of flight AZA 327 reported that his TCAS had issued a TA and that he did not have visual contact with the traffic.
- At 17:27:39, the pilot of flight AZA 327 announced that he now had visual contact with the traffic and complained that the latter had not climbed more quickly.
- At 17:30:30, the radar controller instructed the pilot of flight VBA 1067 to descend to (exit) flight level FL 290 and handed it over to the Marseille frequency 125.65 MHz.
- At 17:31:53, the radar controller handed over flight AZA 327 at (exit) flight level FL 330 to the Rome frequency 132.905 MHz.
- The volume of traffic, according to the radar controller, was low.
- According to the report by the commander of flight AZA 327, the meteorological conditions were excellent and enabled him to see the traffic. He also reported that his TCAS had not issued an RA (resolution advisory) alert.
- According to the commander of flight VBA 1067, at the time of the incident he himself was pilot non flying (PNF) and was handling radiotelephony. The copilot was pilot flying (PF). The latter apparently selected flight level FL 250 instead of FL 340 in the altitude window of the automatic flight control system. The error was noted by the commander when the aircraft passed flight level FL 343. At this time, vertical speed was about 3000 ft/min. The aircraft descended about 500 ft below the cleared flight level and its TCAS issued a traffic advisory TA. Moreover, the commander acknowledged that he was also busy giving an explanation concerning the approach to Nice to a trainee copilot who was in the jumpseat.
- According to skyguide radar plots, the aircraft went from -2500 ft/min. to +1500 ft/min. in about 24 seconds.
- Weather: (according to Infonet Skyguide)
ATIS Geneva 17:27 Info Echo
QAM LSGG 1720Z 19.07.2004
050 DEG 5 KT. VRB BTN 010 AND 120 DEG
VIS 10 KM
FEW 5500 FT
1+27/+12
QNH 1015 ONE FIVE
QFE THR 05 965
QFE THR 23 966
QAO-A1: 15Z-21Z FL100 220/015 FL180 230/020 FL240 250/030
FL300 250/040 FL340 260/035 FL390 260/040

All times indicated in the report are in UTC (LT – 2 hours)

ANALYSIS

Flight management aspects

According to the statement by the commander of flight VBA 1067, the potentially conflicting convergence between the two aircraft involved was due to an error in entering the cleared altitude in the altitude window of the automatic flight control system, made by the pilot flying (PF) (the copilot) at the controls of the Airbus A320. Two pertinent comments may be made concerning the flight management aspects in the particular environment which pre-existed just before the events:

- the presence of a third crew member (a trainee copilot) in the cockpit momentarily distracted the commander's attention from carrying out the procedure for checking the cleared flight level; occupied with explaining the standard instrument approach route to LFMN to the new copilot, he correctly understood and read back the assigned flight level (FL 340) but omitted to check the entry in the flight management system (FMA check);
- for the same reason, he probably did not check the logic of the chosen mode of descent with the cleared flight level: in fact, in order to traverse the 1000 feet separating flight levels FL 350 and FL 340 it is not opportune to select "open descent" mode, since this is an option with a high vertical speed (this mode involves decelerating the jet engines to iddle). A standard descent rate of 1000 feet per minute would have been appropriate in this situation and could have been achieved either by reverting directly to "V/S -1000" mode, or to "descent" mode which controls a rate of -1000 feet/minute as long as the aircraft is below the descent plane programmed for the thrust-back engine scenario.

It is highly probable that the commander, who was pilot non flying (PNF), quickly became aware of the lack of a counter-check. Indeed, at the time he asked the air traffic controller to confirm the cleared flight level (17:26:43), the recording of the radar plots shows that the aircraft was passing flight level FL 342 at an average vertical speed of 2500 feet/min. If the rate of descent had been 1000 feet/min. ("V/S -100" or "descent" modes), the vertical inertia of the aircraft would have been less and the corrective action undertaken by the crew of VBA 1067 to climb back to flight level FL 340 would have had a quicker response, with a less serious level violation (according to the skyguide radar plots, the aircraft went from -2500 feet/min. to +1500 feet/min. in about 24 seconds).

The flight crew of VBA 1067 corrected the level violation fairly quickly and in a sufficiently definite manner, so the on-board collision avoidance systems only issued a traffic advisory (TA); observation of the evolution of the lateral separation and altitude difference between the two aircraft shows that very little prevented the issuing of a resolution advisory.

Air traffic control aspects

It seems that the vigilance, tardy though it was, of the commander of VBA 1067 contributed to the optimal management of the conflict on the part of the air traffic controller. By requesting confirmation of the cleared flight level (17:26:43), he enabled the latter to clarify it for him again and to instruct him to maintain it (FL 340). Having immediately received a read-back of the instruction he had issued, the controller was then able to turn his attention to the second aircraft involved (AZA 327) and issue it with essential traffic information, at the very moment the STCA alarm triggered; subsequently, he then turned to VBA 1067 using emergency phraseology and instructed it to climb back to its assigned flight level.

CAUSE

The incident is due to the fact that the flight level assigned by the radar controller was entered incorrectly in the altitude window of the automatic flight management system and was not checked by the flight crew of VBA 1067.

Probable factor affecting the incident sequence:

The presence of a third crew member (a trainee copilot) in the cockpit of VBA 1067, to whom the commander was giving operational information, momentarily distracting the latter's attention from carrying out the checking procedure for the cleared flight level.

Berne, 23 March 2006

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.

All times indicated in the report are in UTC (LT – 2 hours)

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

Investigation into the **incident** that occurred on **19.07.2004**

- Subject of transcript: **AZA327 / VBA1067**

- Centre concerned: Swiss Radar Area West

- Designation of unit: Upper Area, sector L4 & L3 / K3

- Frequency / Channel: 128.155 / 133.630 MHz & 124.030 / 134.315 MHz

- Date and period (UTC) covered by attached extract: 19.07.2004
17:12 - 17:31 UTC

- Date of transcript: 06 August 2004

- Name of official in charge of transcription: Ivan ROCHAT

- 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.

Geneva, 06 August 2004



Ivan ROCHAT

Abbreviations

Sector Designation of sector

- L4 - Swiss Radar Area West, Upper Control, sector L4
- L3 - Swiss Radar Area West, Upper Control, coupled sector L3 / K3

<u>Aircraft</u>	-	<u>Callsign</u>		<u>Type of acft</u>	<u>Flight rules</u>		<u>ADEP</u>	-	<u>ADES</u>
1067	-	VBA 1067		A320	IFR		EDLV	-	LFMN
327	-	Alitalia 327		MD82	IFR		LFPG	-	LIRF
315A	-	Hapag Lloyd 315A		B738	IFR		EDDM	-	LEPA
5453	-	Jet Italia 5453		LJ45	IFR		EGPN	-	LIMC
806	-	Condor 806		B753	IFR		EDLP	-	LEPA

OGEY / 06 August 2004

TRANSCRIPT SHEET

Occurrence: AZA327 / VBA1067 of 19.07.2004



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

Coupled Channels: 128.155 & 133.630 MHz, sector L4 (VBA1067 only)

L4	1067	17:14:05	Heu..., Control, good day, VBA one zero six seven, three nine zero, inbound MILPA, ?????? looking for a direct MEDAM.	Unreadable
1067	L4	11	VBA one zero six seven, hello, identified, maintain flight level three niner zero, direct MEADM - VEVAR.	
L4	1067	17	????? MEDAM, three nine zero, thanks, VBA one zero six seven.	Unreadable

Sector in contact with:
 - HLF503A
 - EZY5447
 - HLF503A
 - AZA328
 - CFG568
 - HHI2315
 - ERJ5453
 - EZY5447
 - HLF503A
 - HEJ504
 - HHI2315
 - N125GW
 - ERJ5453
 - N125GW
 - HHI2518
 - CFG962
 - HHI2315

1067	L4	17:23:49	VBA one zero six seven, continue present heading, descend to flight level three five zero.	
L4	1067	55	????? present heading and descend flight level three five zero, VBA one zero six seven.	Unreadable

Sector in contact with:
 - ERJ5453

1067	L4	17:25:36	VBA one zero six seven, clear of traffic, own navigation direct MEDAM, contact Radar on one two four decimal zero three zero, goodbye.	
L4	1067	44	Direct MEADM, one two four zero three zero, VBA one zero six seven, au revoir.	

Signature of person in charge of transcription :

TRANSCRIPT SHEET

Occurrence: AZA327 / VBA1067 of 19.07.2004



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

Coupled Channels: 124.030 & 134.315 MHz, sector L3 / K3 (AZA327 only)

L3	327	17:12:41	<i>Radar, bonjour, Alitalia three two seven, flight level three three zero, inbound MOKIP.</i>	
327	L3	46	<i>Alitalia three two seven, bonjour, identified, cleared MOKIP - KOGAS - MEDAM - Torino, flight level three three zero.</i>	Trainee
L3	327	55	<i>MOKIP - KOGAS ... - MEDAM - Torino at flight level three three zero, Alitalia three two seven.</i>	

Sector in contact with:
 - VIK7313
 - BER9358
 - VEX75Y
 - FIN891
 - VEX79W
 - VEX75Y
 - VEX79W

L3	327	17:23:02	<i>Alitalia three two seven, a request.</i>	
327	L3	05	<i>Alitalia three two seven, go ahead.</i>	
L3	327	07	<i>Can we maintain this heading to avoid?</i>	
327	L3	12	<i>Roger, it's approved.</i>	
L3	327	13	<i>We maintain the heading to avoid the weather, Alitalia three two seven.</i>	

Coupled Channels: 124.030 & 134.315 MHz, sector L3 / K3

L3	315A	17:23:54	Swiss Radar, good evening, Hapag Lloyd three one five Alfa, flight level three five zero.	Trainee
315A	L3	58	Hapag Lloyd three one five Alfa, bonjour, identified, maintain flight level three five zero, cleared BENOT - BALSI.	
L3	315A	17:24:05	BENOT - BALSI, maintain three five zero, request level three seven zero, Hapag Lloyd three one five Alfa.	

Signature of person in charge of transcription :

TRANSCRIPT SHEET

Occurrence: AZA327 / VBA1067 of 19.07.2004



To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
315A	L3	17:24:10	Roger, call you back.	
L3	315A	13	Thank you.	
L3	5453	16	Radar..., good afternoon, this is Echo Romeo Juliett five four five three, we are descending level, ... we are maintaining level three four zero inbound to Torino.	
5453	L3	25	Jet Italia five four five three, bonjour, identified, descend flight level three zero zero, two thousand feet a minute minimum until passing flight level three two zero.	
L3	5453	35	Two thousand feet until passing three two zero, descending three zero zero, Jet Italia ... five four five three.	
315A	L3	41	Hapag Lloyd three one Alfa, correction, Hapag Lloyd three one five Alfa, flight level three seven zero is occupied, sorry, maintain flight level three five zero.	
L3	315A	49	Maintain three five zero, Hapag Lloyd three one five Alfa.	
327	L3	17:25:14	<i>Alitalia three two seven, traffic at nine o'clock..., crossing your level on your left hand side, distance one zero miles.</i>	
L3	327	23	<i>Alitalia three two seven, copied.</i>	
5453	L3	48	Jet Italia four five four three, contact... Swiss Radar, one two six decimal zero five, goodbye.	
L3	5453	53	Six zero five, goodbye.	
L3	1067	57	Radar, good evening, VBA one zero six seven, inbound MEDAM, flight level three five zero.	
1067	L3	17:26:03	VBA one zero six seven, bonjour, identified, descend flight level three four zero.	
L3	1067	08	Descend flight level three four zero, VBA one zero six seven.	
327	L3	12	<i>Alitalia three two seven, when clear of weather, direct to Torino.</i>	
L3	327	16	<i>When cleared... we are... cleared also to go direct to Tango Oscar Papa, Alitalia three two seven.</i>	

Signature of person in charge of transcription :

TRANSCRIPT SHEET



Occurrence: AZA327 / VBA1067 of 19.07.2004

To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
327	L3	17:26:23	Roger.	
L3	1067	43	And for VBA one zero six seven, confirm cleared level?	
1067	L3	47	VBA one zero six seven, cleared level is three four zero, maintain flight level three four zero, further descent is three minutes.	
L3	1067	54	Okay, going back to three four zero, VBA one zero six seven.	
327	L3	58	Alitalia three two seven, traffic, twelve o'clock..., climbing now one thousand feet... above you.	
L3	327	17:27:05	Alitalia three two seven, we have the traffic on TCAS..., we are in India Mike Charlie	
1067	L3	10	VBA one zero six seven, climb immediately fl.	
L3	1067	12	Yeah, we are climbing three four zero, VBA one zero six seven.	
L3	327	19	Alitalia three two seven, we have TCAS advisory.	
327	L3	23	Alitalia three two seven, roger, the traffic is just... in front of you.	
L3	327	29	Three two seven, not in sight but... on TCAS.	
327	L3	33	Twelve o'clock at distance two miles and just reaching one thousand feet above you.	
L3	327	39	Alitalia three two seven, now the traffic is in sight.	
L3	327	53	Maybe next time, it's advisable to increase rate of... climb, Alitalia three two seven.	
327	L3	59	Standby, please.	
327	L3	17:28:02	Alitalia three two seven?	Coach takes over.
L3	327	04	We just said that maybe next time, it's advisable to increase the rate of climb..., not to make a TCAS advisory.	

Signature of person
in charge of transcription :

TRANSCRIPT SHEET

Occurrence: AZA327 / VBA1067 of 19.07.2004



To Col.1	From Col.2	Time Col.3	Communications Col.4	Observations Col.5
327	L3	17:28:11	Yeah, Alitalia three two seven, sorry about that, but that traffic was descending, he was cleared to level three four zero descending.	
L3	327	19	Yes, no problem, we were just... giving a... an advise.	
327	L3	24	Roger, give it to the other pilot, please, then.	
L3	327	27	I think he copied.	
L3	1067	29	Thank you very, our apologies... for... XXXXX.	Could be "for us"
1067	L3	32	Roger.	
L3	806	42	Swiss bonsoir, Condor eight zero six, level three three zero.	
806	L3	46	Condor eight zero six, bonjour, identified, cleared MILPA - BALSI, flight level three three zero.	Trainee again
L3	806	53	Heu..., MILPA - BALSI, three three zero, Condor eight zero six, merci.	
806	L3	17:29:32	Heu..., eight ze.	
806	L3	34	Condor eight ze.	
806	L3	45	Condor eight zero six, go ahead.	
L3	806	48	Condor eight zero six, I didn't call you.	
806	L3	50	Roger.	
1067	L3	17:30:27	VB.	
1067	L3	30	VBA one zero six seven, descend flight level two niner zero, be level by VEVAR.	
L3	1067	35	????? two niner zero, leveled VEVAR, one zero six seven.	Unreadable
1067	L3	17:31:18	VBA one zero six seven, contact Marseilles, one two five decimal six five, goodbye.	
L3	1067	23	One two five six five, au revoir Monsieur, VBA one zero six seven.	

Signature of person
in charge of transcription :

TRANSCRIPT SHEET

Occurrence: AZA327 / VBA1067 of 19.07.2004



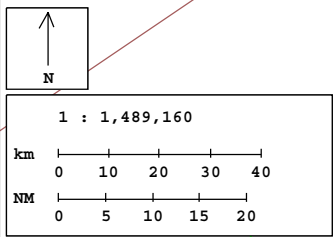
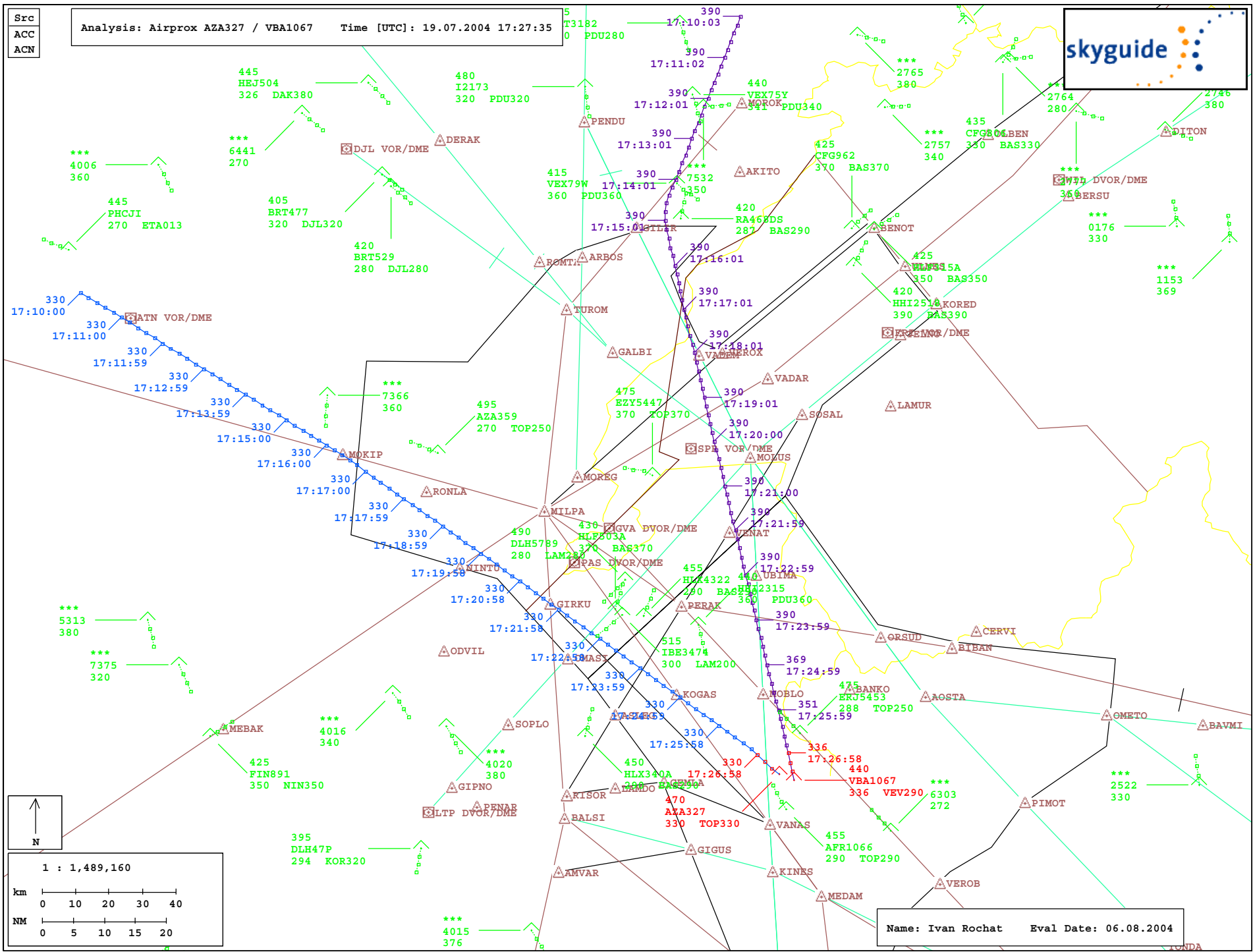
<u>To</u> <u>Col.1</u>	<u>From</u> <u>Col.2</u>	<u>Time</u> <u>Col.3</u>	<u>Communications</u> <u>Col.4</u>	<u>Observations</u> <u>Col.5</u>
327	L3	17:31:53	<i>Alitalia three two seven, contact Roma on one three two decimal niner zero five, goodbye.</i>	Change of controller
L3	327	58	<i>One three two niner zero five, goodbye, Alitalia three two seven.</i>	

Signature of person
in charge of transcription :

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

Src
ACC
ACN

Analysis: Airprox AZA327 / VBA1067 Time [UTC]: 19.07.2004 17:27:35

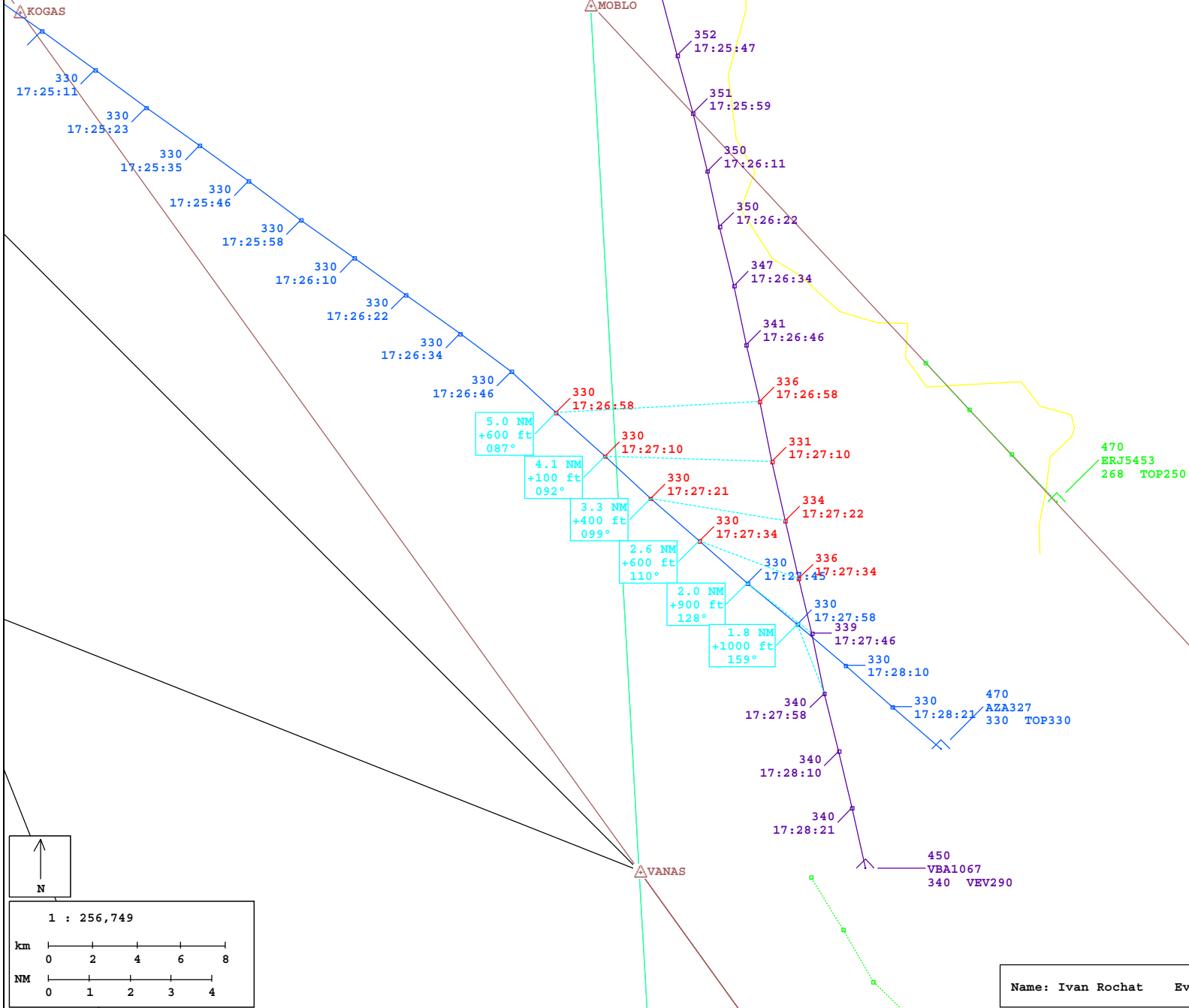


Name: Ivan Rochat Eval Date: 06.08.2004

Src
ACC
ACN

Analysis: Airprox AZA327 / VBA1067 Time [UTC]: 19.07.2004 17:28:45

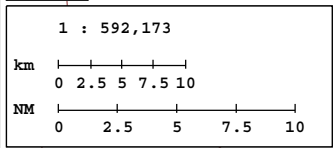
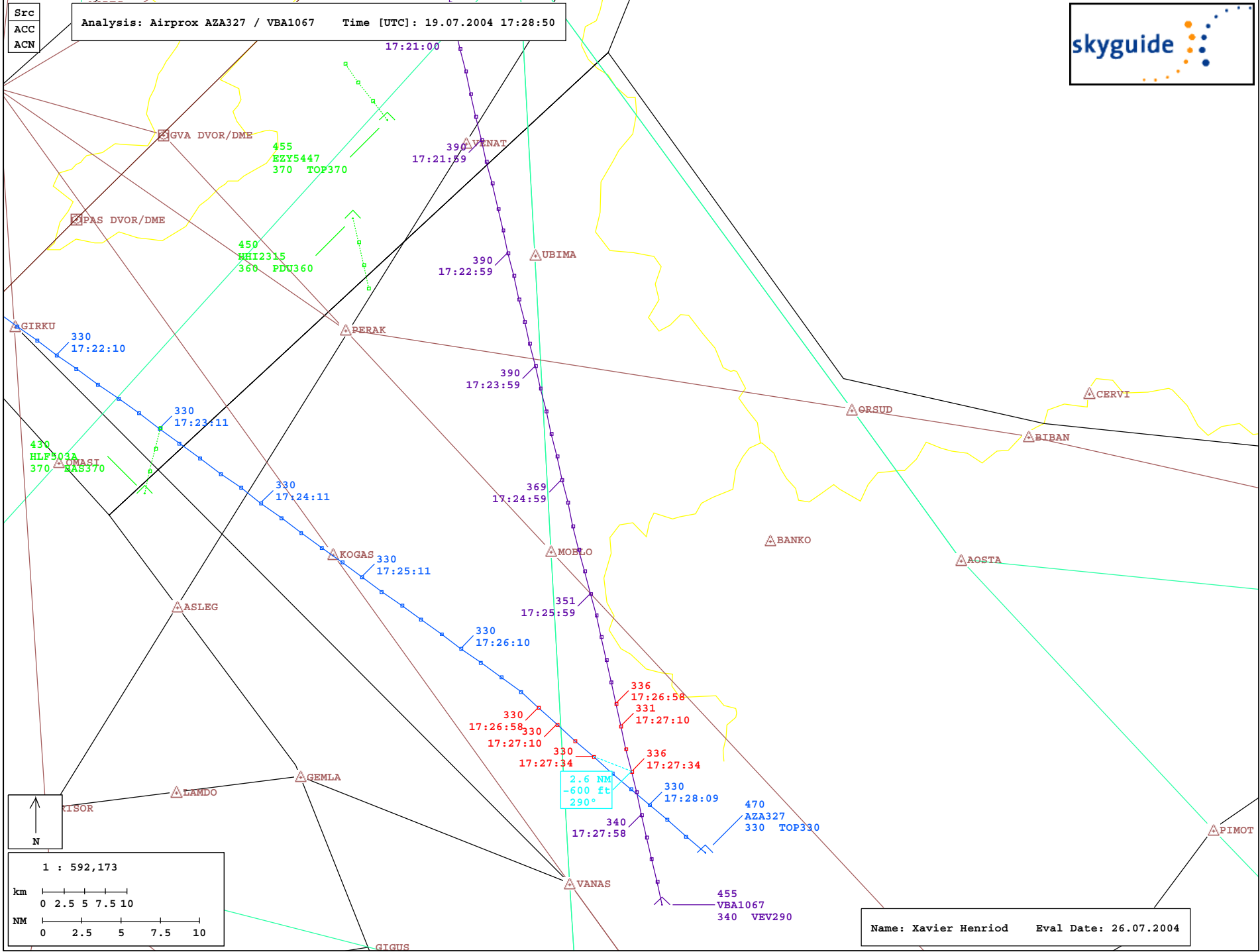
BANKO



Name: Ivan Rochat Eval Date: 06.08.2004

Src
ACC
ACN

Analysis: Airprox AZA327 / VBA1067 Time [UTC]: 19.07.2004 17:28:50



Name: Xavier Henriod Eval Date: 26.07.2004