Enclosure: 2.

Ref. 33\1/113\13-69\02
Roma, 14 GEN. 2002


In compliance with Annex 13, please find herewith enclosed copy of the Preliminary Report and Interim Factual Report concerning the subject.

President
(Bruno Franchi)
PRELIMINARY REPORT
(Preliminary information only, Accident Investigation still pending)

RUNWAY COLLISION
BETWEEN AIRCRAFTS
MD 87 REG. SE-DMA (FLIGHT SAS 686)
AND CESSNA 525A REG. D-IEVX
Milano Linate, October 8th, 2001
# PRELIMINARY REPORT
(Preliminary information only, Accident Investigation still pending)

## 00 – OCCURRENCE IDENTIFICATION

### FILING INFORMATION

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<thead>
<tr>
<th>State Reporting</th>
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### WHERE

<table>
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<th>Code</th>
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<th>Code</th>
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<tbody>
<tr>
<td>N( )</td>
<td>Milan, Nolinate Airport</td>
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### WHEN

<table>
<thead>
<tr>
<th>Date of occurrence</th>
<th>Year</th>
<th>Month</th>
<th>Day</th>
</tr>
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<td>01/10/08</td>
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<table>
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<tr>
<th>Local time of occurrence</th>
<th>Hour</th>
<th>Min</th>
</tr>
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<tbody>
<tr>
<td>08:10</td>
<td></td>
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### AIRCRAFT

<table>
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<tr>
<th>Manufacturer</th>
<th>Code</th>
<th>Plain text</th>
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<tbody>
<tr>
<td>Boeing-McDonnell Douglas</td>
<td>148</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MD-87</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Registration</th>
<th>Code</th>
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<th>Code</th>
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<tr>
<td>Sweden</td>
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<td></td>
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<table>
<thead>
<tr>
<th>Operator's name</th>
<th>Code</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS</td>
<td></td>
<td>Scandinaavian Airlines System</td>
</tr>
</tbody>
</table>

### 01 - HISTORY OF FLIGHT

#### Type of operation (Air transport operations)

- **0101**
  - 1( X ) Passenger
  - 2( ) Cargo
  - 3( ) Passenger/cargo
  - 4( ) Ferry/Positioning
  - 5( ) Training/Check
  - Y( ) Other
  - Z( ) Unknown

- **0102**
  - S (X ) Scheduled
  - N( ) Non-scheduled
  - Z( ) Unknown

- **0103**
  - D( ) Domestic
  - I( X ) International
  - Z( ) Unknown

#### General aviation

- **0104**
  - Instructional
    - 10( ) Dual
    - 11( ) Solo
    - 12( ) Check
    - 1Y( ) Other
    - 1Z( ) Unknown
  - Non-commercial
    - 20( ) Pleasure
    - 21( ) Business
    - 22( ) Off-shore operation
    - 23( ) Aerial work
    - 24( ) Off-shore operation
    - 25( ) Government/State
    - 26( ) Government/State
    - 27( ) Government/State
    - 28( ) Government/State
    - 29( ) Government/State
    - 30( ) Aerial application(Crop control)
    - 31( ) Fire control
    - 32( ) Aerial observation
    - 33( ) Aerial advertising
    - 34( ) Construction/Sling load
    - 35( ) Aerial ambulance
    - 36( ) Logging
    - 37( ) Off-shore operation
    - 38( ) Off-shore operation
    - 39( ) Off-shore operation
    - 40( ) Text/Experimental
    - 41( ) Illegal (smuggling, etc.)
    - 42( ) Ferry
    - 43( ) Search and Rescue
    - 44( ) Airshow/Race
    - 45( ) Demonstration
    - 46( ) Other
    - 47( ) Unknown

- **0105**
  - Type of Operator
    - 1( ) Flying Club/School
    - 2( ) Corporate/Executive
    - 3( ) Gov. Agency
    - 4( ) Private owner
    - 5( ) Sales/Rental/Service
    - Y( ) Other
    - Z( ) Unknown
ITINERARY

Last Departure point: MILANOLINATEAIRPOR

0106

Or S (X) if same as 0005

Planned destination: KOBENHAVN

0107

Or S (X) if same as 0005

Duration of flight (time airborne): 

0108 hour min or Y (X) if accident occurred on ground

02 - INJURIES TO PERSONS

0208

Fatal Serious Minor None Unknown

0206 Crew

0207 Passenger

0207 On ground

03 / 04 - DAMAGE

0301 Damage to aircraft

07 - METEOROLOGICAL INFORMATION

General weather in the area of occurrence

0705

1( ) Visual meteorological information 2( X ) Instrument meteorological conditions Z( ) Unknown

Light conditions

0706

1( ) Dawn 2( X ) Daylight 3( ) Dusk/Twilight

4( ) Night-Moonlight 5( ) Night-dark Z( ) Unknown

SEQUENCE OF EVENTS

EVENTS PHASES

0 5 2 RUNWAY INCURSION 0 3 2 INITIAL CLIMB

Form P
(Rev. 9/87)
## AIRCRAFT

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>226 CESSNA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>CESSNA 525A (CJ2)</td>
</tr>
<tr>
<td>Registration</td>
<td>D-IEVX</td>
</tr>
<tr>
<td>State of registry</td>
<td>GERMANY</td>
</tr>
<tr>
<td>Operator's name</td>
<td>AIR-EVEX</td>
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</table>

## 01 - HISTORY OF FLIGHT

### AIRLINE OPERATION (AIR TRANSPORT OPERATIONS)

<table>
<thead>
<tr>
<th>Type of operation</th>
<th>0101</th>
</tr>
</thead>
<tbody>
<tr>
<td>1( ) Passenger</td>
<td>2( ) Cargo</td>
</tr>
<tr>
<td>3( ) Passenger/cargo</td>
<td></td>
</tr>
<tr>
<td>4( ) Ferry/Positioning</td>
<td>5( ) Training/Check</td>
</tr>
<tr>
<td>Y( ) Other</td>
<td></td>
</tr>
<tr>
<td>Z( ) Unknown</td>
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<table>
<thead>
<tr>
<th>Scheduled</th>
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<tbody>
<tr>
<td>S( )</td>
<td>N( )</td>
<td>Z( )</td>
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<table>
<thead>
<tr>
<th>Domestic</th>
<th>International</th>
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<tbody>
<tr>
<td>D( )</td>
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<td>Z( )</td>
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### GENERAL AVIATION

<table>
<thead>
<tr>
<th>Type of operation</th>
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<tbody>
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<tr>
<td>10( ) Dual</td>
<td>11( ) Solo</td>
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<tr>
<td>12( ) Check</td>
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</tr>
<tr>
<td>1Y( ) Other</td>
<td>1Z( ) Unknown</td>
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<tr>
<td>Non commercial</td>
<td></td>
</tr>
<tr>
<td>20( ) Pleasure</td>
<td>21( X ) Business</td>
</tr>
<tr>
<td>22( ) Aerial work</td>
<td>24( ) Off-shore operation</td>
</tr>
<tr>
<td>22( ) Unknown</td>
<td></td>
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<tr>
<td>Commercial</td>
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<tr>
<td>30( ) Aerial application (Crop control)</td>
<td>31( ) Fire control</td>
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<tr>
<td>33( ) Aerial advertising</td>
<td>34( ) Construction/Sling load</td>
</tr>
<tr>
<td>36( ) Logging</td>
<td>37( ) Off-shore operation</td>
</tr>
<tr>
<td>32( ) Aerial observation</td>
<td>35( ) Aerial ambulance</td>
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<tr>
<td>36( ) Unknown</td>
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<tr>
<td>Miscellaneous</td>
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<tr>
<td>40( ) Text/Experimental</td>
<td>41( ) Illegal (smuggling, etc.)</td>
</tr>
<tr>
<td>43( ) Search and Rescue</td>
<td>44( ) Airshow/Race</td>
</tr>
<tr>
<td>41( ) Other</td>
<td>42( ) Ferry</td>
</tr>
<tr>
<td>4Z( ) Unknown</td>
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<table>
<thead>
<tr>
<th>Type of Operator</th>
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<td>2( X ) Corporate/Executive</td>
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<tr>
<td>Private owner</td>
<td>5( ) Sales/Rental/Service</td>
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<td>Gov. Agency</td>
<td>3( )</td>
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<tr>
<td>Other</td>
<td>42( )</td>
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<tr>
<td>Unknown</td>
<td>4( )</td>
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</table>
ITINERARY
Last Departure point
0106
MILANOLINATEAIRPORT
Or S( X ) if same as 0005
Planned destination
0107
PARISLEBOURGET
Or S( X ) if same as 0005
Duration of flight (time airborne)
0108
hour min
0207 On ground 00 00 00

02 - INJURIES TO PERSONS
Fatal Serious Minor None Unknown
0208 Crew 02 00 00 00
0206 Passenger 02 00 00 00
0207 On ground 00 00 00

03 / 04 - DAMAGE
0301 Damage to aircraft
D( X ) Destroyed S( ) Substantial M( ) Minor N( ) None Z( ) Unknown

07 - METEOROLOGICAL INFORMATION
General weather in the area of occurrence
0705
1( ) Visual meteorological information 2( X ) Instrument meteorological conditions Z( ) Unknown
Light conditions
0706
1( ) Dawn 2( X ) Daylight 3( ) Dusk/Twilight
4( ) Night-Moonlight 5( ) Night-dark Z( ) Unknown

SEQUENCE OF EVENTS
EVENTS PHASES
062 RUNWAY INCURSION 022 TO RUNWAY
Code Plain text Code Plain text

Form P (Rev. 9/87)
NARRATIVE

AT LINATE THE REPORTED OVERALL VISIBILITY WAS 100 METERS.

THE MD87 WAS CLEARED BY GROUND TO TAXI FOR RWY 36 FROM THE MAIN APRON VIA MAIN TAXIWAY (BOTH ON THE EASTERN SIDE OF THE RWY) AND THEN CLEARED BY TWR TO THE HOLD LINE.

THE CESSNA WAS CLEARED BY GROUND TO TAXI FROM GENERAL AVIATION APRON (ON THE NORTH-WESTERN SIDE OF THE RWY) FOR RWY 36 VIA NORTH TAXIWAY "ROMEO FIVE" AND TO REPORT AT THE STOP BARS OF EXTENSION NORTH OF RWY 36.

THE CESSNA PILOT'S READ BACK CONTAINED THE WORDS "VIA ROMEO FIVE" BUT LACKED OF MOST OF THE OTHER INFORMATION WITHOUT ANY INTERVENTION BY GROUND CONTROLLER.

THE CESSNA WAS INSTRUCTED BY GROUND TO STOP AT STOP BARS AND THEN CLEARED TO TAXI ALONG MAIN APRON.

AT THE SAME TIME THE TWR CLEARED MD87 FOR TAKE OFF.

AFTER FEW SECONDS THE TWO AIRCRAFT COLLIDED AT THE INTERSECTION BETWEEN RWY AND TAXIWAY "ROMEO SIX".

ROMEO SIX IS THE SOUTHBOUND CONNECTION BETWEEN GENERAL AVIATION APRON AND RUNWAY WITH THE INTERSECTION AT TWO THIRDS OF RWY 36.

AFTER THE IMPACT THE MD87 FELL ONTO THE RWY SKIDDING SIDEWAYS INTO AN AIRPORT BUILDING.

BOTH AIRCRAFT CAUGHT FIRE AND WERE COMPLETELY DESTROYED.

MD87'S FDR, CVR AND QAR WERE RESCUED.
AGENZIA NAZIONALE
PER LA SICUREZZA DEL VOLO
(istituita con decreto legislativo 25 febbraio 1999, n. 66)

INTERIM FACTUAL REPORT

RUNWAY COLLISION BETWEEN AIRCRAFTS
MD 87 REG. SE-DMA (FLIGHT SAS 686)
AND CESSNA 525A REG. D-IEVX
Milano Linate, October 8th, 2001
SYNOPSIS.

On October 8th, 2001, at 06.10 UTC, an MD 87 operating Scandinavian Air System flight 686 collided with a Cessna 525A (CJ2) at Milano Linate airport, in northern Italy. The airport was operating in CAT 3 conditions with a general visibility reported at 100 metres and Runway Visual Range (RVR) values around 200 metres. The MD 87 had just been airborne at the end of the take off roll on runway 36 R and the Cessna 525A was taxiing across the same runway, having entered it from a lateral taxiway intersecting the runway. The MD 87 collided with the CJ2 and fell back onto the runway, skidding thereafter sideways into an airport building.

Both aircraft caught fire and were completely destroyed and 104 passengers and 6 crew members aboard flight SAS 686 and 4 occupants of the Cessna were killed together with 4 other people that were working in the building, while 4 more workers suffered injuries and burns of various degrees. An investigation was immediately started by ANSV, the Italian Flight Safety Board, an independent body dedicated to promote aviation safety and mandated by the Italian Government to investigate aviation events in accordance with the ICAO Annex 13 standards, with the participation of the accredited representatives of all the entitled member states and their advisors.

NOTE: all times are in UCT (Universal Coordinated Time) local time is UCT plus 2 hours.

1. FACTUAL INFORMATION.

1.1 - Chronology of events.

At 5.40 October 8th the MD 87 and the Cessna 525A were parked at Milano Linate airport waiting to depart to their respective destinations. The MD 87 had arrived the previous evening and was parked on the main apron, at gate A13, and boarding of the 104 passengers had just been completed, with a delay of approx 5 minutes on the scheduled departure time of flight SAS 686 to Copenhagen. Upon requesting start up clearance on the Ground frequency (121.8 MHz) the crew obtained a departure slot at 06.16 and, accordingly, started up ten minutes later requesting then and obtaining, at 05.54, clearance to “taxi to the holding position CAT 3...”, with instructions to “call back entering the main taxi way”.

Meanwhile on the western apron, designated for General Aviation and executive aircrafts, the Cessna 525A, arrived earlier that same morning from Cologne without passengers and parked in front of the GA Terminal, was intended to be operated in a private demonstration flight to Paris Le Bourget and back, arranged by the Italian Cessna representative for a potential customer. A flight plan to this effect had been filed the previous day with ETD at 05.45. Start up clearance was requested by the Cessna pilots on the Ground frequency (121.8 MHz) at 05.58 and obtained one minute later, with a departure slot at 06.19. At 06.05 the Cessna was cleared to taxi, “...north via Romeo 5” and instructed to “call back at the STOP BAR of the main runway extension”.

The Cessna pilot acknowledged “Roger, via Romeo 5 ... and call you back before reaching main runway”, omitting the words NORTH, STOP BARS and EXTENSION, and, unchallenged by the ATC operator, taxied out of the GA apron taking the ROMEO 6 taxiway.

In the meantime SAS 686, taxiing on the main taxiway, had been transferred to the Tower frequency (118.1 MHz) and been instructed first to continue to the holding position CAT 1 and then, at 06.07, to line up and wait on Runway 36R.
At 06:08 the Cessna pilot, still on the Ground frequency, reported "...approaching SIERRA 4", and, requested by the ATS operator, confirmed his position repeating "approaching the runway, SIERRA 4" and was instructed to "maintain the STOP BAR..."

One minute later, at 06:09.19, the Cessna D-IEVX was authorized by the Ground operator to "continue your taxi on the main apron", and, almost simultaneously, at 06:09.29, SAS 686 was "cleared for take off ..." by the Tower operator and started its take off roll.

At 06:10.21, a few seconds after having transmitted via ACARS the Off Ground report, the MD 87 collided with the Cessna at the intersection of ROMEO 6/ROMEO 2 taxiways and the main runway.

At impact the MD 87 sustained structural damage to the right wing leading edge and lost its right main landing gear that, in turn, damaged the right flap and hit the right engine that became separated from its pylon.

The aircraft continued briefly airborne for a few seconds and then touched down back on the runway within 400-500 ft of the runway end, skidded through the remaining part of the runway, the grass overrun, the ROMEO 5 taxiway and a service road crashing sideways into an airport building used for baggage handling and located at the west end of the airport terminal building, approximately 67 feet to the right of the extended runway 36R and 1500 feet from the runway end.

The Cessna had remained on the runway at the point of impact, broken in three main sections with the forwards and mid sections on fire.

1.2 - Injuries to persons.

All 104 passengers and 6 crew members on board the MD 87 and the 4 occupants of the Cessna jet were killed as a result of the accident.

4 more people that were working in the airport building lost their lives and 4 more suffered injuries and burns to various degrees.

The total loss of lives amounts so far to 118.

1.3 - Damages to aircraft.

Both aircraft have been totally destroyed in the accident.

1.4 - Other damage.

1.4.1 - Runway.

The runway pavement shoved deep circular gouges caused by the right main landing gear piston and surface scratching along the trail of the RH engine.

Additional damage to the tarmac surface was caused by the burning wing and forward section of the Cessna.

1.4.2 - Airport buildings.

The airport building hit by the MD 87 collapsed after the front reinforced concrete pillars were shattered and the roof beams fell down.

Further structural damage was caused by the intense heat of the burning fuel.

1.5 - Personnel information.

Still under investigation

1.6 - Aircraft information.

Scandinavian Airlines System (SAS) Boeing (formerly McDonnell Douglas) MD-87 Swedish Registration Number SE-DMA.

The MD-87 series airplane is a MD-80 with a shortened fuselage and corresponding reduced passenger capacity.

Per SAS, the accident MD-87's takeoff weight was 57,285 kilograms (kg) and the center of gravity was 13% mean aerodynamic chord (MAC). Fuel at takeoff was listed as 10,200 kg.
According to data provided by SAS, the accident airplane was delivered new to SAS on September 21, 1991 and had accumulated approximately 25,573 flight hours and 16,562 cycles, always on duty for SAS that performed all necessary maintenance.

The last periodic check (Check B6:1) was performed on September 3\textsuperscript{rd} 2001.

The load and balance sheet of SAS 686 of October 8\textsuperscript{th} reports a take off weight of 57,285 Kg, 10,200 of which as fuel contained in the wing tanks, with the centre of gravity at 13% of the mean aerodynamic chord.

\textit{Cessna 525A, German Registration Number D-IEVX:}

The subject aircraft is a Model 525A (S/N:525A-0036), also known as a Citation Jet 2 (CJ2), is a six to seven passenger corporate jet with a maximum certified take off weight of 5,616 Kg (12,375 pounds).

The aircraft had been built during the current year and was registered in Germany only on September 5\textsuperscript{th} 2001, little more than one month before the accident, by AIR EVEX GmbH of Dusseldorf that had requested to have it registered on its Air Operator Certificate.

The registration process had not been completed and the aircraft maintained the status of the private aircraft.

1.7 - Meteorological information.

The official weather report at the moment of the event reported wind calm, general visibility not above 100 metres with RVR around 200 metres, ceiling at 100 ft, ground temperature of 17\textdegree{} C and atmospheric pressure of 1013 Hectopascals.

Few seconds before the collision the Tower operator informed an aircraft taxiing along the main taxiway that RVR values were reported at 225, 200 and 175 metres on points A, B e C respectively.

1.8 - Navigation aids.

\textit{Not relevant}

1.9 - Communications.

Hereunder are transcribed significant extracts from radio communications on the Ground (121.8 MHz) and Tower (118.1 MHz) frequencies.

Integral transcriptions will be attached to the final report.

<table>
<thead>
<tr>
<th>UTC</th>
<th>SOURCE</th>
<th>TEXT</th>
</tr>
</thead>
<tbody>
<tr>
<td>05.41.39</td>
<td>SAS 686</td>
<td>Milano good morning, Scandinavian 686. Stand is 13, we are fully ready, we have information Alfa.</td>
</tr>
<tr>
<td>05.41.47</td>
<td>Ground</td>
<td>686 buongiorno. Slot at 06.16, start up in accordance and cleared to destination via ...etc.</td>
</tr>
<tr>
<td>05.54.23</td>
<td>SAS 686</td>
<td>Ground, Scandinavian 686 request taxi from 13.</td>
</tr>
<tr>
<td>05.54.28</td>
<td>Ground</td>
<td>Scandinavian 686, taxi to the holding position CAT 3, QNH 1013...etc.</td>
</tr>
<tr>
<td>05.58.23</td>
<td>D-IEVX</td>
<td>Linate buongiorno, D-IEVX, request start up with information Charlie.</td>
</tr>
<tr>
<td>05.58.28</td>
<td>Ground</td>
<td>D-IEVX, buongiorno, please speak a bit louder, thank you. You are clear to destination via Saronno 5A, Arles 8A transition, 6000 feet initial climb.</td>
</tr>
<tr>
<td>05.58.47</td>
<td>D-IEVX</td>
<td>D-IEVX is clear to destination, Saronno 5A, after Argon 8A departure, climb initially 6000 ..., D-VX.</td>
</tr>
<tr>
<td>Time</td>
<td>Entity</td>
<td>Message</td>
</tr>
<tr>
<td>---------</td>
<td>--------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>05.58.57</td>
<td>Ground</td>
<td>Arles 8A the transition. Start up is approved according to the slot 06.19.</td>
</tr>
<tr>
<td>05.59.04</td>
<td>D-IEVX</td>
<td>Start up is approved according to slot and confirm Arles 8A.</td>
</tr>
<tr>
<td>05.59.32</td>
<td>Ground</td>
<td>...break, Scandinavian 686, when airborne squawk 0 treble 4.</td>
</tr>
<tr>
<td>05.59.38</td>
<td>SAS 686</td>
<td>0 treble 4, Scandinavian 686.</td>
</tr>
<tr>
<td>05.59.41</td>
<td>Ground</td>
<td>That is correct. Passing the fire station call Tower 18.1. Bye.</td>
</tr>
<tr>
<td>06.01.24</td>
<td>SAS 686</td>
<td>Tower buongiorno, Scandinavian 686, sequence to 36R.</td>
</tr>
<tr>
<td>06.01.29</td>
<td>Tower</td>
<td>Ciao Scandinavian 686 number 4.</td>
</tr>
<tr>
<td>06.05.27</td>
<td>D-IEVX</td>
<td>Buongiorno, D-IEVX. General aviation for taxi.</td>
</tr>
<tr>
<td>06.05.32</td>
<td>Ground</td>
<td>Station calling unreadable.</td>
</tr>
<tr>
<td>06.05.34</td>
<td>D-IEVX</td>
<td>The D-IEVX.</td>
</tr>
<tr>
<td>06.05.38</td>
<td>Ground</td>
<td>D-IEVX, Ground, confirm you are ready to taxi.</td>
</tr>
<tr>
<td>06.05.42</td>
<td>D-IEVX</td>
<td>Affirmative.</td>
</tr>
<tr>
<td>06.05.44</td>
<td>Ground</td>
<td>D-VX taxi north via R5, QNH 1013. Call me back at the STOP BAR of the main runway extension.</td>
</tr>
<tr>
<td>06.05.56</td>
<td>D-IEVX</td>
<td>Roger, via R5 and 1013 and call you back before reaching main runway.</td>
</tr>
<tr>
<td>06.05.59</td>
<td>Tower</td>
<td>Scandinavian 686 you can continue taxi until CAT 1.</td>
</tr>
<tr>
<td>06.06.04</td>
<td>SAS 686</td>
<td>Continue taxi until CAT 1, Scandinavian 686.</td>
</tr>
<tr>
<td>06.07.40</td>
<td>Tower</td>
<td>Scandinavian 686, line up and wait 36R.</td>
</tr>
<tr>
<td>06.07.45</td>
<td>SAS 686</td>
<td>Line up and wait 36R, Scandinavian 686.</td>
</tr>
<tr>
<td>06.08.23</td>
<td>D-IEVX</td>
<td>D-IEVX, approaching Sierra 4.</td>
</tr>
<tr>
<td>06.08.28</td>
<td>Ground</td>
<td>D-VX, confirm your position?</td>
</tr>
<tr>
<td>06.08.32</td>
<td>D-IEVX</td>
<td>Approaching the runway, Sierra 4.</td>
</tr>
<tr>
<td>06.08.36</td>
<td>Ground</td>
<td>D-VX, roger. Maintain the STOP BAR, I’ll call you back.</td>
</tr>
<tr>
<td>06.08.40</td>
<td>D-IEVX</td>
<td>Roger, hold position.</td>
</tr>
<tr>
<td>06.09.19</td>
<td>Ground</td>
<td>D-VX, continue your taxi on the main apron. Follow the Alfa line.</td>
</tr>
<tr>
<td>06.09.28</td>
<td>D-IEVX</td>
<td>Roger, continue taxi main apron, Alfa line, the D-VX.</td>
</tr>
</tbody>
</table>
06.09.29 Tower …break, Scandinavian 686, Linate, cleared for take off 36, the wind is calm report rolling. When airborne squawk IDENT.

06.09.33 Ground That is correct and, please, call me back entering the main taxiway.

06.09.37 SAS 686 Cleared for take off 36R, when airborne squawk IDENT and we are rolling, Scandinavian 686.

06.09.38 D-IEVX We’ll call you on the main taxiway.

At 06.10.14 and at 06.10.16 on board of MD 87 there were two calls “VEE ONE” and “ROTATE”. At 06.10.21 transmission from an ELT was heard on the emergency frequency (121.5).

1.10 - Aerodrome information.
Still under investigation

1.11 - Flight Recorders.
BOEING MD 87 SE-DMA
Flight Data Recorder (FDR)
Honeywell PN: 980-4100-DXUN, tape type.
The FDR was recovered on 08 OCT 01 and readout was performed on 25-26 OCT 01 at the laboratories of BFU in Braunschweig, Germany.
Reliable parameter data was recorded up to the point of collision with the D-IEVX and thereafter the data acquisition was unreliable for many parameters.
Cockpit Voice Recorder (CVR)
Honeywell PN : 980-6020-001, solid state.
The CVR was recovered on 17 OCT 01, ten days after the accident as it had been inadvertently removed from the crash site together with the building debris during the first stages of rescue operation.
Readout was performed on 25-26 OCT 01 at BFU in Braunschweig, Germany and, for the communications in the Swedish language, translated by SAS personnel under the surveillance of ANSV and of SHK (the Swedish Accident Investigation Board).
Good voice recording was made to the point of collision with D-IEVX and the content confirms the communications intervened between ATS and all the other aircraft while SAS 686 was on the respective frequency.
The voice recording stopped at the collision.
Quick Access Recorder (QAR)
Penny & Gilles PN: D51434-1.
The QAR was recovered on 09 OCT 01 and readout was performed on 17 OCT 01 at CPHOS in Copenhagen, under the surveillance of ANSV and SHK.
Reliable parameter data was recorded to some second before the collision with the Cessna 525A.

CESSNA 525A    D-IEVX
According with the JAR rules there is not a specific requirement of FDR and CVR for this type of aircraft and they were not installed on board.
1.12 - Wreckage and impact information.
Still under investigation

1.13 - Medical and pathological information.
Still under investigation

1.14 - Fire.
Still under investigation

1.15 - Survival aspects.
Still under investigation

1.16 - Tests and research.
Still under investigation

1.17 - Organizational and management information.
Still under investigation

ACTIONS PERFORMED.

ANSV has so far issued three SAFETY WARNINGS, all addressed to the competent national Aviation Authority and hereunder briefly summarized:

SAFETY WARNING n. 1, dated 10/10/2001
"The first acts of the technical investigation ... have revealed that the markings on the taxiway R6 at MILANO Linate airport do not comply with the ICAO standards ... and it’s deemed convenient ... to adopt the pertaining actions, owing to the unavailability of the ground radar system, in order to guarantee the flight operations safety”.

SAFETY WARNING n. 2, dated 06/11/2001
"In the initial phase of the technical investigation ... it is evident that the local aerodrome emergency plan, in force since July 1989 and never reviewed, appears not very detailed in defining the duties of all personnel involved ... and was not complied with ... and it is deemed convenient to suggest ... to verify that the emergency plans in force on all the Italian airports open to commercial air traffic meet the requirements ... set by the international regulations and are commensurate to the operating conditions of the airport to which they refer ... and are tested through recurrent realistic exercises”.

SAFETY WARNING n. 3, dated 06/11/2001
“During the technical investigation progress ... it has been noted that on MILANO Linate airport not all the Runway Holding Positions are provided with STOP BARS in conformity with the Annex 14 standards ... and it is suggested to asses the adequacy of the ground movement procedures particularly for the case of low visibility operations in force to prevent possible inadvertent runway incursions”.

6
INVESTIGATION PROGRESS.

Although it was immediately apparent that the ultimate cause of the collision was an inadvertent runway incursion by the pilot of the Citation 525A, not detected by the ATC operator on duty on the Ground frequency, the investigating team is still at work.

The agenda will include completion of the technical examination of the wreckage and of the flight recorder data and analysis of all information related to the event, with particular attention to all the environmental and human factors and to survival aspects.

Safety warnings will be issued at any time, if and as required during the proceedings.