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THE CAGLIARI ACCIDENT

Legal scenarios after Italian Supreme Court judgement

Safety Team 05
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THE ACCIDENT

- On the night of 24 February 2004, a Cessna 550 from Rome Ciampino to Cagliari, with on board 3 crew members and 3 medical team members who needed to transport an organ for its transplantation, during the final phase of a visual approach procedure, struck a side of the mountain “Sette Fratelli”, causing the death of all occupants of the aircraft.
- The first phase of the flight was managed by the radar centre “Roma ACC” and then, when the flight had been authorized to descend to 9000 ft., has been transferred to “Cagliari APP”, that didn’t provide radar service because of the limitation due to the complicated orography of that area.
- The Cagliari APP authorized the Visual Approach once received the communication from the crew about its ability to keep autonomously the separation from the obstacles. After the authorization the aircraft turned of about 240 degrees and all that happened before the start of the IAF (Initial Approach Fix) of the Instrument approach procedure.
- Subsequently, the Cagliari APP Decimomannu transferred the competence to control the flight to the relevant Elmas ATC Tower (CTR) that had no radar, when the aircraft was still at 26 NM far from the runway of the Cagliari airport.
- Cagliari APP, when transferred the control to Elmas Tower, gave this instruction: “CIT continue not below 2500 feet, further descend with Elmas Tower...”
- After this communication, the flight impacted against the mountain at a speed of 400 km/h.

LIEE
ELMAS

JEPPESEN

11-1

CAGLIARI, ITALY
ILS PAPA Rwy 32

ICAO - INSTRUMENT APPROACH CHART

CAGLIARI/ELMAS

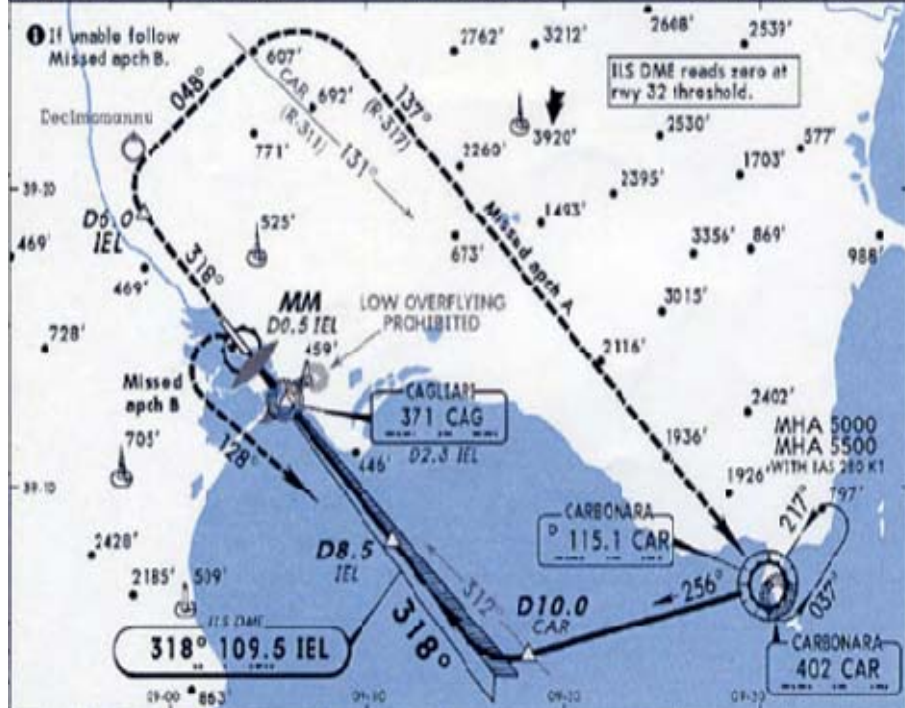
ILS-P RWY 32

CAGLIARI Approach (B)		ELMAS Tower		Ground
118.75		120.6	122.1	121.6

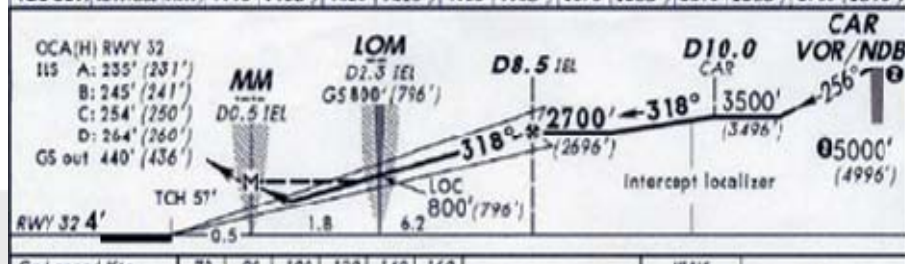
LOC IEL	Final Appch Crs	GS IOM	ILS DA(H) Refer to Minimums	Apt Elev 13' Rwy 4'
109.5	318°	800' (796')		

MISSED APCH A: Climb on 318° to 5000'. At D6.0 IEL turn RIGHT onto 048° At R-311 CAR turn RIGHT onto 137° to CAR VOR/NDB and join holding.
Turns MAX IAS 220 KT, MIN climb gradient 2.0% till 4100'.
MISSED APCH B: Climb to 500', then turn LEFT (MAX IAS 185 KT) onto 128° climbing to 5000'. Turn LEFT to CAR VOR/NDB Do not turn before passing MM.

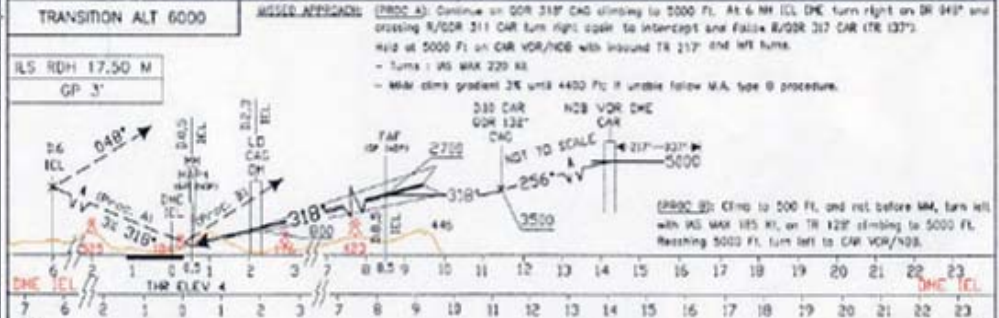
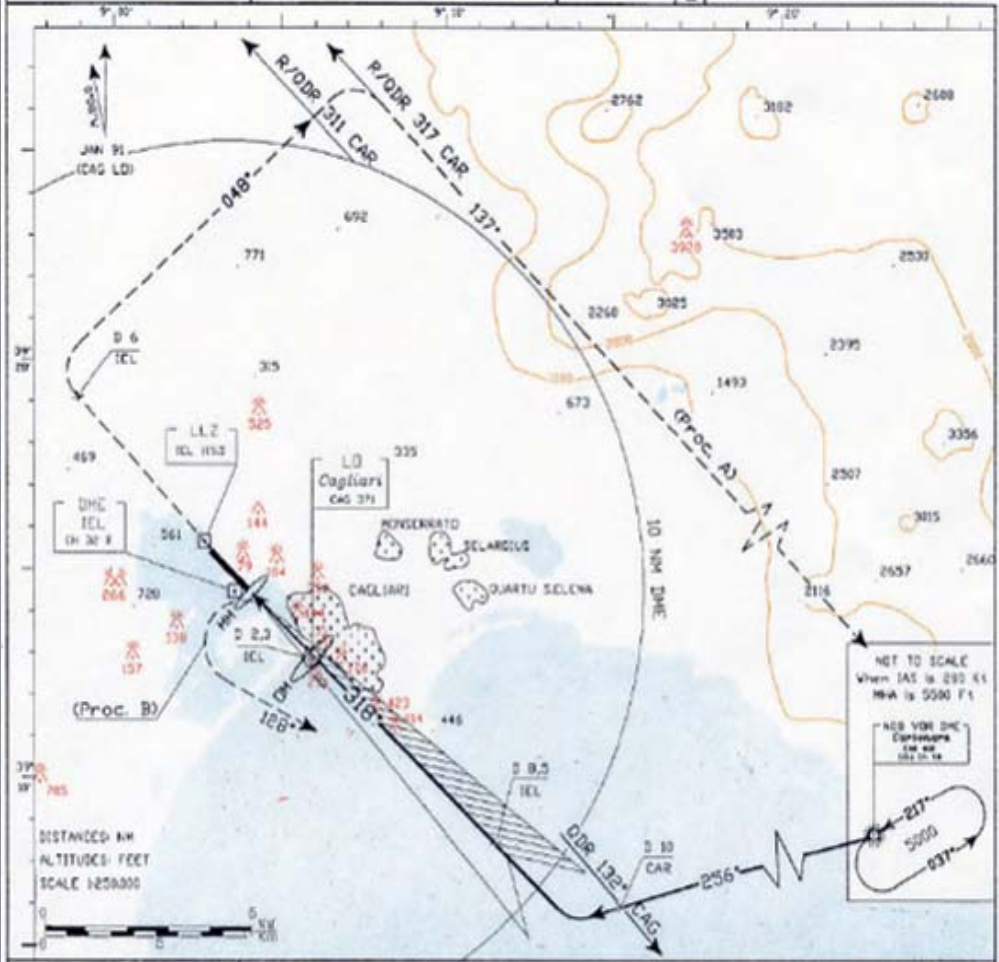
Alt Set: hPa Rwy Elev: 0 hPa Trans level: By ATC Trans alt: 6000' (5996')



LOC	IEL DME	3.5	4.5	5.5	6.5	7.5	8.5
(GS out)	ALTITUDE (HAT)	1110' (1106')	1438' (1425')	1750' (1746')	2070' (2066')	2390' (2386')	2760' (2695')

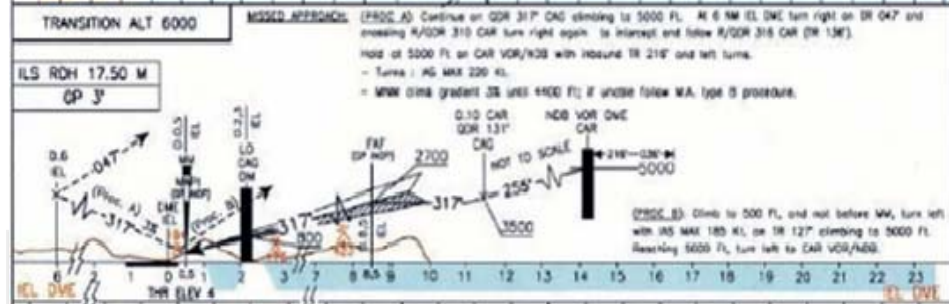
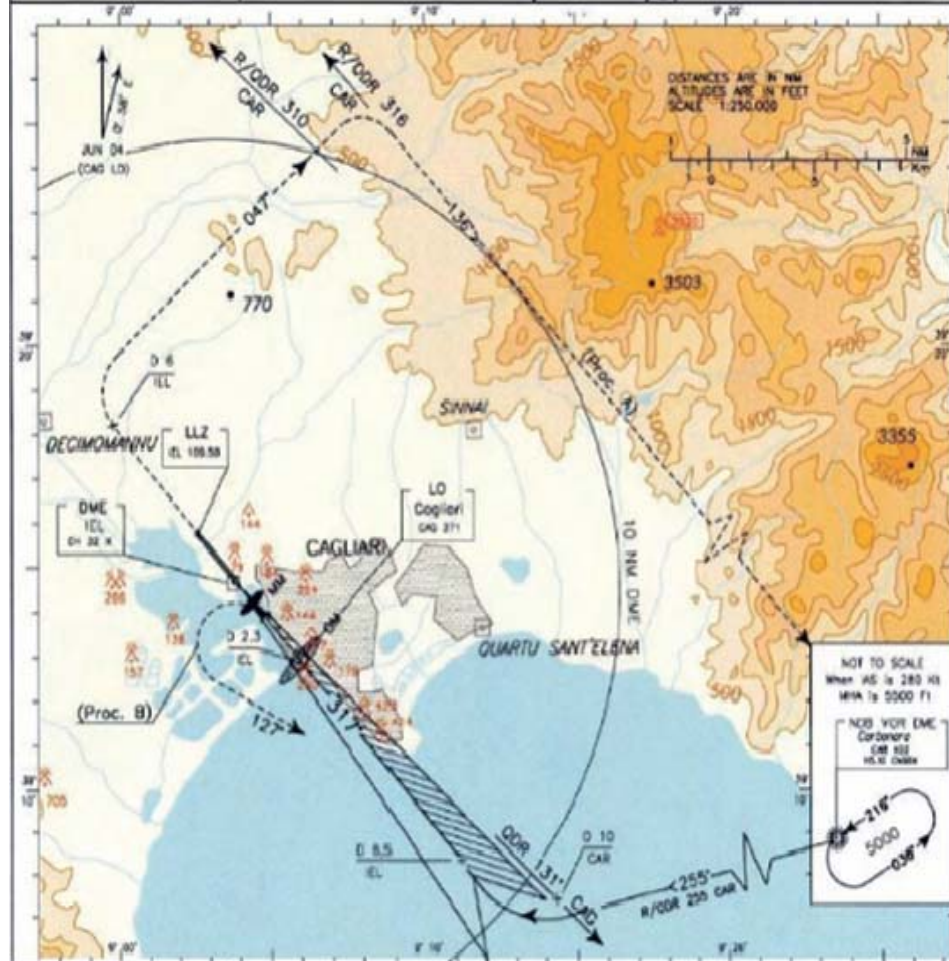


APP Cagliari Approach	TWR Elmas Tower	AD ELEV	LIEE
118.75	120.60	13	
118.40	GND 121.60		



ICAO - INSTRUMENT APPROACH CHART

APP Cagliari Approach 118.75 118.40	TWR Elmas Tower 120.60 GND 121.60	AD ELEV 13	L CAGLIARI/ELMAS ILS-P RWY 32
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CAUSES OF THE ACCIDENT (ANSV report)

- 1) No technical failure of the aircraft;
- 2) The crew had not particular confidence with the destination airport;
- 3) The final phase of the flight before the crash took place without any moonlight and in condition of total darkness;
- 4) A flight simulation attested that from the position where the aircraft was when the crew declared to have visual reference to the terrain, about 41 NM from Cagliari APP, it was possible to see only some light points along the Sardinia East Coast, and only far a slender light corresponding to Cagliari city. The lack of any light reference in the 7 Fratelli mountain Area precluded any chance of a visual separation from vertical obstacles; the visual effect on that position and with those conditions was the so-called “Black Hole”.
- 5) The approaching radar was not able to maintain continuously the contact with the aircraft;
- 6) An error of the pilot. He had requested the clearance for a visual approach in a context where has been verified the absence of the conditions to see the airport and to perceive the obstacles from which subsequently to separate.



CAUSES OF THE ACCIDENT (ANSV report) CONT'D

- 7) It has been proved that the APP radar didn't run properly in the East Sector of Cagliari CTR below Flight Level 110.
- 8) Misunderstanding of the crew of the instruction given by Cagliari APP when transferred the control to Elmas Tower: "CIT continue not below 2500 feet, further descend with Elmas Tower..." that could have created the conviction that the descent to that level was free from obstacles.
- 9) The anticipation of the deviation of the route probably decided in order to accelerate the arrival at destination has determined the over flight of more elevated areas.
- 10) In the consulted maps there was not colored representation of the terrain and all that was source of reading errors of the relief altitude.
- 11) The lack of rest of the crew, caused by a prolonged period of wakefulness, could have reduced their performance.



THE CRIMINAL JUDGEMENT (Cagliari First Instance Court - 05.02.2009)

- Defendants (2 Italian Air Force ATCs) are charged with 2 different negligent crimes: manslaughter and air disaster for the death of the CESSNA 6 occupants
- Concurrent negligence of the pilot and of the controllers
Verdict: two years imprisonment and joint payment of the Court costs
- General and specific culpability profiles:
 1. Visual Approach Clearance, not complying with the relevant specific domestic legislation set by the Directives n. 41/8879 and 41/8880;
 2. Lack of due information to the pilot related to the orography of the area;
 3. Provision to the pilots of a misleading instruction concerning the minimum altitude to keep (2.500 feet);
 4. The results of the Prosecutors appointed Experts and the conclusions of the Judge;
 5. Main controversial issues: appliance of the Directive 41/8880 and *fidefaciente* nature of the pilot's statement.



THE CRIMINAL JUDGEMENT (Cagliari Court of Appeal - 18.03.2010)

- The verdict of the Court: Integral confirmation of the First Instance Judgment ;
- Additional negligence profiles according to the Court:
 1. Controllers awareness of the dangerous position of the CESSNA and their omission to provide due information on the orography of the terrain;
 2. The clearance to the visual approach had not to be issued because of the night darkness;
 3. Violation of the ATC technical rules;
 4. Violation of the ICAO Annex 11 lett.d;
 5. Controllers superficial, negligent and imprudent conduct: the same situation dealt with in two totally different manners.



THE CRIMINAL JUDGEMENT

(Supreme Court of Cassation - 22.02.2011)

- Rejects the appeal of the District Legal Attorney Office, upholding the 2 previous conviction judgments. No mention of the AIP Directive No. 41/8880
- 3 main topics at the basis of the Judgement:
 1. The controllers flight safety police function
 2. The controllers guarantee position
 3. The controllers conduct's generic ad specific culpability profiles:
 - General culpability : violation of ICAO Annex 11, Doc. 4444, negligent and unskillful conduct
 - Specific Negligence: violation of the ICAO Doc. 4444, paragraph 4.2
- Risk of a misrepresentation of the Visual Approach
- Visual Approach procedure suspension.



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MAIN DEBATED ISSUES

- Nature of the Clearance;
- Separation from the obstacles on the ground
The guarantee position of the controller;
- Role of ATCOs: police function in flight safety;
- The ATC Liability.



Nature of the Clearance

- Clearance = Italian Authorization (administrative act) ?
- The administrative act needs always a verification
Once released can produce effects regardless of the willing of the individual receiver
- The clearance doesn't have any coercive power
The defendants argue that the Visual Approach Clearance cannot be considered as an administrative act but an instruction in a wide sense



Separation from the obstacles

- In the first 2 judgments main issue is the appliance of the AIP-Italy n. 41/8880
- In the Court of Cassation judgment the duty of separation from the obstacles lies on the **GUARANTEE POSITION** of the controller:
 - Which is the source of the controller obligation to prevent the event?
 - Enhanced protection for certain goods;
 - Italian doctrine about people obliged to preventative behaviors (4 categories);
 - Art. 40, par. 2, Italian Criminal Code: “Not to prevent an event that is a legal obligation to prevent is equivalent to causing it”.



ATC - Aviation police

- Aviation Police in terms of **Police of flight safety:**
 - ICAO Annex 11, lett. d), among the tasks of the ATC includes also *“to provide alerts and information useful for the safe and efficient conduct of the flight”*.

The ATC has to carry out its tasks on the basis of prudence, competence and diligence, issuing the necessary clearance in situations where there is no danger (or, it would be better saying, where there is safety), as far as the controller is aware;
 - The Court deals with the matter concerning the presumed duty of the ATC to issue a clearance not only for exigencies of safety, but also for reasons connected with the expeditious traffic and consumption savings.



ATC Liability

- The controller knew the aircraft position and its dangerousness
Parallelism with the shooter range;
- Misleading ATC instructions to the pilot;
- Violation of the functional duties of prudence, diligence and skillfulness.
Lack of any attempts to repair to the danger created by the instruction previously given.



ROLE OF PRAXIS

Issue mostly valid for the I & II instance

- Appliance of Italian AIP Directive n. 41/8880;
- ATCs behavior as a Praxis;
- Who should be considered responsible for the appliance of a praxis?
Role of the CAA and ANSP;
- The ATC as final ring of a bigger chain.



DEVIANT RULE

- ATCOs concerns in the aftermath of the judgement. Extension of the ATC duties;
- The case has been decided on the basis of national and general criminal law principles;
- The lack of inclusion into the ICAO Annex 11 of the duty of the ATC to separate aircraft and ground obstacles represents a so-called **Deviant Rule**

What is a Deviant Rule?

- ICAO Annex 11 / Jurisprudence and guarantee position;
- Road traffic jurisprudence / ATC belief;
- Lack into the ICAO rules of an introductive and general provision of law that, even before the compliance with the technical rules, the ATC should always and anyway operate in order to ensure the safety of the passengers.



EXTENSIVE APPROACH

- 1979, Capoterra accident (Sardinia), Italian Supreme Court (1985);
- 1968, U.S. Court (Hartz v. United States of America): *“We disapprove the view that the duty of an FAA controller is circumscribed within the narrow limits of an operations manual and nothing more”*, adding later that the controller has the duty to direct and guide the aircrafts according to the safety criteria;
- EC Reg. n. 1108/2009, Annex Vb - *“Essential Requirements for ATM and Air traffic Controllers”*, art. 2, lett. C), par. 4, states: *“Air Traffic Control Services and related processes shall provide for adequate separation between aircraft and, where appropriate, assist in protection from obstacles and other airborne hazards and shall ensure prompt and timely coordination with all relevant users and adjacent volume of airspace”*;
- CONCLUSION.



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Thanks for your kind attention!

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