

Aviation and the Judiciary – The Role of the Expert
EUROCONTROL Headquarters 29-31 October 2014

“The case law of the Italian Supreme Court of Cassation in the field of aviation accidents”

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Bruxelles, October 30 2014

1- Introduction.

I must thank EUROCONTROL and IFATCA, for giving me the opportunity to present this paper on the penal Italian jurisprudence concerning the aeronautic sector.

The penal events regarding this sector represent an interesting part of the cases dealt by the 4th penal Section of the Italian Supreme Court, that I have the honor to head. In addition, this meeting and presentation are of particular interest to me since I still fly airplanes, despite my white hair.

The 4th Penal Section of the Italian Supreme Court deals with all cases of “negligence”; and while the body of jurisprudence on, for example, car crashes or the negligence of physicians is ample, that which concerns the aeronautic sector is luckily small. This demonstrates that airplanes are a secure means of transportation, and that air crashes are few when compared to the volume of air traffic and to the number of passengers carried.

A few months ago, I wrote a report concerning all the air crashes that happened in Italy, and which have been examined by the Italian Supreme Court.

Today, however, I will only look at three of them: 1) the disaster of Capoterra that occurred on September 14, 1979; 2) the disaster of Linate, which happened on October 8, 2001; 3) and the disaster of the mountain called “Sette Fratelli” (Seven Brothers), which took place on February 24, 2004.

The reason I chose the above three crashes is that in this series of accidents, criminal charges were filed: aviation disaster (articles 428 and 449 of the Italian penal code), along with multiple non-intentional homicide charges (article 589 of the same code). And some air traffic controllers, among others, were found guilty, and this created a misunderstanding and a mistrust between this category of professionals and the Judiciary.

To be frank, this misunderstanding/mistrust really originated with the decisions made concerning the two disasters of Capoterra and Mount Sette Fratelli, and this for reasons I will try to explain in this paper, and which constitute the “core” of my report?.

2. A Just culture in aviation.

Before speaking about those disasters, I would like to say a few words about Just culture in aviation.

Obviously, investigating the causes of aviation accidents is of fundamental importance to improve flight safety and save lives.

Yet ever since investigations into aircraft accidents were carried out systematically, and with the specific aim of using their results to improve flight safety, their use for any other purposes have been a point of concern: and this especially because the documents produced by such investigations can be used by Judges to determine any question of criminal and/or civil liability on the part of anyone involved in an accident.

But if such documents can be used to ascertain the criminal liability of people involved in an accident, they will not easily cooperate, and will not easily admit to having made errors that could lead to a conviction. This lack of cooperation would not, understandably, lead to a rapid and correct verification of the causes of aviation disasters.

Thus in many countries, including Italy, there are somewhat antagonistic interests between the Administration of Justice and safety investigations, whose sole aim is to improve flight safety.

Therefore, a balanced solution between these two rather opposite interests, to which I can relate as a judge and a pilot, needs to be found. This is important in order to achieve the following definition of a just culture: “a culture where front line operators are not punished for actions, omissions or decision taken by them that are commensurate with their experience and training, but where gross negligence, willful violations and destructive acts are not tolerated”.

Unfortunately, reaching such a just culture in Italy will be long and arduous.

3. The disaster of Capoterra.

I shall now describe the disaster of Capoterra in some details.

This disaster happened on the night of September 14, 1979, when a DC9 of the ATI Company, approaching the airport of Cagliari Elmas, crashed into mount Nieddu, killing everyone on board.

This was not the first time a plane disaster was caused not by some mechanical failure, but by a human error (here the pilot's failure to determine the plane's vertical position during navigation). There had been the disaster of Superga (May 4, 1949), a hill close to the airport of Turin, in which the entire football team of the "Grande Torino" died, and the disaster of Montagnalonga (May 5, 1972) a mountain close to the airport of Palermo.

These disasters did not go to the Italian Supreme Court because the Tribunals and the Courts of Appeal found only the pilots guilty (though they had died in the accidents) and absolved everyone else who had been charged with "negligence". In the Montagnalonga case, the air traffic controllers too were acquitted.

Following these acquittals, however, perhaps under the pressure of public opinion, there was a significant change in jurisprudence, a shift that began with the disaster of Capoterra.

This disaster was indeed a game changer, for in addition to the obvious culpability of the pilots, (established by the Cagliari Courts), the Public Prosecutor of Cagliari started investigating the role played by the Air traffic control that was then supervised by the Italian Air Force. As a result an air traffic controller and officer of the Italian Air Force was impeached and found guilty by the Judges of first and second instance. And their sentences were later confirmed by the Italian Supreme Court.

During the trials two opposite theories clashed:

1) the theory of the judicial authorities:

The Judicial authorities assumed that the air traffic controller bore responsibility for the disaster for:

- a) breaking section 2 of article 40 of the Italian penal code, which establishes that: "Not preventing an event that you have the legal obligation to prevent, is equivalent to cause it"; and
- b) for being in a "position of guarantee" towards the passengers of the airplane.

(Let me here open a parenthesis to explain, briefly, what "position of guarantee" means in Italian penal law.

As already mentioned, article 40, paragraph 2, of the Italian Criminal Code states that "Not preventing an event that you have the legal obligation to prevent, is equivalent to cause it". What determines the "obligation to prevent the event" is called "position of guarantee", and this is of two types:

the position of control (involving the control of potentially harmful sources of danger, such as a dangerous machinery), and the position of protection (involving the protection of people or goods against injuries and damage, as in the case of a physician who is entrusted with the care of a patient).

Obviously, in some cases, and among them that of the air traffic controllers, the problem resides in identifying the source and the content of the legal obligation pertaining to those persons).

(Anyway, in particular the Courts ruled that by giving visual approach to the pilot of the DC9, the air controller failed to implement the safety rules for such a procedure. The court also blamed the air controller for omitting to,

- brief the pilots on the right procedure concerning the significant deviation of the aircraft from the flight path;

- rapidly inform the pilots that the aircraft was flying lower than allowed;
- inform the pilots that the aircraft was heading towards an obstacle).

2) The theory of the air traffic controllers:

The air traffic controllers observed that the judicial authorities enlarged and misrepresented their duties as provided in national and international guidelines and policy documents, and arguing that keeping a separation between an aircraft and obstacles fell under the exclusive competence of pilots.

Although I am unable to detail, due to time constraints, the complex set of problems examined by the Cagliari Tribunal and Court of Appeal, I can say that the Court's decision to convict the air traffic controller contained a technical error; it confused visual flight with visual approach. This error induced the "insiders" to believe that the air traffic controller was made a "scapegoat" for the disaster. I must add that those judges failed to seize the opportunity to intervene on the ICAO confusing safety regulations, which were at the root of the misunderstanding that led to the disaster.

But these problems did not escape the attention of the Italian Supreme Court, and in its ruling n. 5564 (April 12, 1985), the Supreme Court set out a series of fundamental principles of air traffic control.

The first of these principles that I would like to mention here concerns the air controller's "position of guarantee". The Court ruled that although Annex 11 of the ICAO does not list "preventing collisions with obstacles on the ground" among the duties of the air traffic controller", this does not exclude that an air controller be held responsible for an accident, together with the pilot, if his or her failure to comply with the regulations have contributed to the disaster.

The second principle concerns the duty of air traffic controllers to intervene, regardless of the rules of the ICAO. The Court established that an air controller "is never relieved from his duty to provide all possible assistance to an aircraft in danger or distress".

Another principle established by the Supreme Court regards the air controllers' duty to inform pilots of any appreciable deviation from the given trajectory of their flight.

Finally, the last principle I would like to mention here, has to do with the relationship between pilots and air traffic controllers. For the Supreme Court ruled that their interaction is characterized by an ancillary and conditioned cooperation, whereby the latter is subordinate to the former; with the consequence that the air traffic controllers could be accused of "negligent complicity" in the disaster, having failed to correct the mistake(s) of a pilot, although being able to.

4. The disaster of Linate.

A far more serious disaster, and this from whatever angle we look at it, is that which happened at the Linate Airport on October 8, 2001. At 8.10am, a Boeing MD 87 of the Scandinavian Airlines, taking off, crashed into a private Cessna 525 aircraft with German registration, which had strayed onto the runway in dense fog.

The collision, which occurred at a speed of about 270 kilometers per hour, split the Cessna in two, and this airplane caught fire. The MD 87, having lost its right engine upon impact, continued his run and crashed into a luggage building located near the runway's end, at a speed of approximately 251 kilometers per hour. All 114 occupants of the two aircrafts, together with 4 airport workers died, while other workers reported injuries. This disaster is the deadliest accident in Italian aviation history.

The expert to whom the Judicial Authorities entrusted with the investigation of the accident, established that the primary causes of the disaster were:

- a) an error from the pilot of the Cessna aircraft who had taxied across the runway, "to this induced by a lacking training, by a non-standard phraseology, by misleading signage and by a cartography that did not meet the reality of the airport ";
- b) an error from the part of the air traffic controller operating on the ground frequency, who, because of his unfamiliarity with the existing airport signage, didn't take notice of the incorrect location of the German aircraft, and authorized the pilot to continue taxiing, (and this regardless of the fact that the pilot had communicated its location, and that the Cessna was taxiing on the wrong runway, and should not have been there);
- c) the lack of a radar A-SMGCS (Advanced Surface Movement Guidance & Control System) and of an alarm system at the stop bar of the R6 connection. These would have allowed the air controller to detect the presence of the Cessna on the taxiway R6, which intersects the main runway;
- d) the absence of "implementation" of the procedures contained in ICAO standards, concerning the limitations on ground handling procedures in low visibility conditions, and in the absence of a suitable stop bar and/or of a system to prevent unauthorized entry onto the runway.

The inquiry report describes the situation of Linate airport at the time of that air crash as alarming. It states that "the Milan Linate airport did not meet the security standards specified in ICAO Annex 14; this is of particular importance, given the fact that Linate is considered an important international airport".

At the end of the investigation, crimes of "aviation disaster" (articles 428 and 449 of the Italian penal code) and multiple unintentional homicides (article 589 of the same code) were hypothesized.

In particular, different levels and forms of negligence were attributed:

- to subjects who were then at the top or had leadership roles within ENAV,
- to other occupants specific roles within ENAC, who had some competence in relation to the management of air traffic in that airport,
- to other subjects with different roles within the SEA s.p.a. (the management company of airport services),
- and finally to the air traffic controller, who had held the last radio contact with the Cessna aircraft.

The defense (with the obvious exception of the air traffic controller's lawyer) argued that no blame could be attached to the organizational structure of the airport, given that the disaster was not foreseeable, having been caused solely by errors from the Cessna pilots and the air traffic controller.

Yet the Tribunal and the Appeal Court of Milan did not - rightly so – adhere to this view, and attributed the accident to the conspicuous deficiencies in the "airport system" and to the "impressive series of gaps" of the same airport, all duly mentioned in the inquiry report (and also in the report of the ANSV-National Agency for the Safety of Flight).

So many of the accused involved in this tragedy were convicted; and this occurred despite the decisions reached by the Tribunal as well as the Appeal Court of Milan were in contrast with each other, since the manager of the airport and the head of the ENAC's territorial district, convicted at first instance, were acquitted by the Appeal Court, and the Head of the Organizational Development Maintenance and Resources of SEA spa, acquitted by the Tribunal, was convicted in the second degree.

The Italian Supreme Court, in its sentence 19th February 2008, confirmed the decision of the Appeal Court of Milan, thus adhering to the view of the serious defects of the "airport system", but excluding that the Director of the airport had of a "position of guarantee" concerning regulation and supervision on the safety of aircraft movements inside the airport: and this in the absence, for the period after the entry into force of d.lgl. n. 250 of 1997, of a provision conferring to the same Director specific powers in the matter.

While dealing with this case, I need to discuss an issue that is related to the concept of Just culture.

During the first-degree trial, the victims' relatives, who had brought a civil action against the accused, exhibited the report of the ANSV (National Agency for the Safety of Flight) on the causes of aviation accidents. The defense protested against this display, because it underlined the conspicuous deficiencies and gaps in the "airport's organizational structure". The defense lawyers addressed certain objections to the Italian Supreme Court. They challenged the court over a series of technical flaws, one of which consisting in "acquiring a disc produced during the last phase of the trial of first instance, from the defense of the plaintiff, and lacking any label of attribution – being simply named report ANSV", and considering that "literally 40% of the text from the first-instance judgment is made by this anonymous script".

But the Italian Supreme Court did not accept such objections, observing that:

- the report was indeed from ANSV and could be attributed to the head of the agency, although other persons may have physically contributed to the report;
- it was acquired as a "document", according to article 234 of the Criminal Procedure Code, and it has certainly the nature and the content of such documents, in the part in which exhibits the factual circumstances, even if it put them in their own order";
- the judges from the Tribunal and the Appeal Court had confirmed that the possible causes of the disaster, which the report presents, were not used as incriminating evidence against the accused"; and the same judges reiterated that "the report's findings could not be taken as evidence to determine the guilt of the accused", since "this document is but a convenient summary of the results already acquired, otherwise unquestionable and then, for truth, never questioned, such as:
- the sequence of conversations between P. Zucchetti and the pilots of the CESSNA, also reported in the judiciary report of M. Pica,
- the modalities of impact between the two aircraft,
- the consequences of the fall of the Boeing of the Scandinavian Airlines to the ground and then against the luggage hangar,
- the consequent deaths of all the persons transported in the Boeing and in the Cessna and of the four SEA employees working in the luggage hangar,
- as well as the obvious condition of things of airport facilities (also reported in the judiciary report of M. Pica)".

As you can understand, it is very difficult to keep the results of an investigation made to improve safety procedures apart from their possible use in determining criminal liability.

5. The disaster of Mount Sette Fratelli.

After the Linate disaster, another plane crash - which occurred in Sardinia – posed again the problem of liability of air traffic controllers. In the night of February 24th, 2004, a Cessna 550, inbound to Cagliari, was approved for "visual approach", and crashed against a rocky spur called Baccu Malu (Bad Gorge), on the Sette Fratelli mountain. All six occupants died (three crew members and three members of a medical team transporting human organs).

Technical reports ordered by the Judicial Authorities ascertained, first of all, that the main cause of the disaster was the Cessna pilot's decision "to make a visual approach in a context in which there were no conditions for the maintenance of appropriate obstacle separation for peculiarity of the orography of the area and the absence of bright visual landmarks, that at night and in the observed conditions, prevented the perception of obstacles and the consequent possibility of separating the aircraft from them".

But if the pilot's error was deemed the primary cause of that air crash, the judicial authorities wondered why the air traffic controller let the aircraft descend to a dangerous, low altitude, without intervening.

The general feeling was that this was a repeat of the Capoterra disaster, and that it had happened despite the clear message sent by the Italian Supreme Court when it placed air traffic controllers in the position of guarantee towards passengers of the flights they direct. Therefore, although the conclusions of the Experts of the judges, who in relation to the conduct of air traffic controllers had literally written that "did not emerge disparities with what is arranged and ordered: a) in the Annex 11 and in the document ICAO 4444 (concerning the application procedures of the control service, the information service and the alerting service), b) in the technical norm and c) in the rules in force of air traffic", the two air traffic controllers who managed that fact were first incriminated and later convicted.

The Judges of the Tribunal and of the Appeal Court of Cagliari believed, indeed, that the behavior of those air traffic controllers was "negligent" and "contributing cause" of the disaster; and these Judges did not think to conform with the solutions of the technical report, noting that the experts limited to considering the specific requirements of visual approach, published in AIP-Italian, part RAC 1-47, that gave reason to the thesis of air traffic controllers, (which said that those persons were required only to separate aircraft between them and not from natural obstacles), without considering two rules (41/8879 / AM.O and 41/8880 / AM.O), introduced in 1991 on the disposal of the Italian General Direction for Civil Aviation, that provided for strict limitations on the visual approach at night.

But, the air traffic controllers contested (and still contest) that such legislation was applicable to them, affirming that the two rules mentioned above had not been sent to them, but only to the management teams of airports and airlines.

It is not necessary to enter into the details of the dispute, which the Supreme Court resolved in a manner incongruent with the thesis of the air traffic controllers.

The Italian Supreme Court, in its ruling n. 6828 dated December 10, 2010, defined the role of air traffic controllers in a much broader way, going beyond the rather narrow view given by the Italian Navigation Code, and attributing them the role of "navigation police" that the reform of that Code had denied. The Supreme Court also dealt with the problem concerning the supposed duty of air traffic controllers to issue clearances on matters of safety, but also, at the requests of pilots, on the fluidity of air traffic, fuel savings, and such other matters; and it concluded that the ATC clearance "is not a due act, so that the act can be adopted only in the presence of the fundamental objective of the flight safety."

In that ruling, the Supreme Court also reiterated the distinction it had made in its previous ruling of 1985, concerning the disaster of Capoterra, between the service tasks and the institutional duties of an air traffic controller, further extending his position of guarantee to include the crew. It also made clear that the air traffic controller must respect the ICAO standards, and complement them, meaning that he or she must operate according to "criteria of prudence, care and diligence" and in respect of all the technical data pointed out to them.

In practice, the Judges of the Italian Supreme Court assigned a new role for the air traffic controller, whose new position of guarantee towards all occupants of an aircraft places him above pilots, as a great many flight procedures now require his authorization.

If the figure of the air traffic controller grew in importance; so did his responsibilities.

I must also add that this later Supreme Court decision dealt a death blow to the procedure of night visual approach in Italy. In effect, with this court's decision, it was considered negligent, the conduct of the air traffic controllers who didn't "understand the anomaly and

the danger originating from the pilot's behavior" and, consequently, gave clearance without respecting the minimum distance requirements between the aircraft and the runway. Following this ruling, the ENAV and the Italian Air Force decided to suspend the use of this procedure at all Italian airports, even if in certain cases the night visual approach could still be considered safe and useful.

6. A personal experience.

At this point, I would like to share a personal judicial experience with you, concerning the issue of night visual approach, and which can be of interest from the point of view of Just culture.

On December 23, 1978, a disaster occurred near the airport of Punta Raisi, where a DC9 of Alitalia flying from Rome to Palermo, attempted a night visual approach and crashed into the sea short of the runway. 103 passengers and five crew members perished, while some people were rescued by nearby fishing boats.

The legal proceedings relating to this disaster did not go to the Supreme Court, but I know the sequence of events very well, for I was the "giudice istruttore" (the investigating judge) for that case.

The investigation was initiated by the Public Prosecutor of Palermo, who suggested that the pilots' gross negligence, the inadequacy of the warning lights on the runway, the absence of proper radar and other electronic instrumentations, the insufficient technical assistance from the control tower, as well as the serious delay in the rescue operation had all contributed to the disaster.

This accident is really well documented, for we have the plane's flight recorders and the testimony of survivors and fishermen who rescued them.

About a year after the disaster, an extensive and well-documented technical expertise was submitted. It exonerated the airport operators from all responsibility, for lack of negligence" or lack of causal link between an agent's fault and the event (the last regarding the delay in the rescue operation, for the safety means would have never arrived at the place of the air crash in time for saving lives).

The decision of this case made people think that not only the pilots, but all aircraft operators could be held responsible for air accidents, and eventually be punished.

I do not agree with this people's opinion, as I believe that only actions that are reprehensible, albeit not criminal, can be found in the events that led to the crash.

To illustrate this point, I would like to share an element of the story with you, of which I have first-hand knowledge. One day, the director of the airport who had been blamed for the late response by the Airport emergency services, told me that the accident probably occurred due to the "black hole" phenomenon. The latter, he explained, consists in the fact that if a runway is located in a dark area (in a desert or in a place surrounded by the sea), the absence of markings could cause the pilot to perceive an illusory horizon and then to approach the runway with a descent angle that is too steep, which can end with a landing short of the runway.

Then I asked him why the night visual approach had been allowed, if pilots could be affected by this optical phenomenon (the airport of Punta Raisi is surrounded on its three sides by the sea). The director answered that the existing rules permitted a night visual approach when requested by pilots who have the runway in sight.

Yet a few days later, the director came back to see me and showed me the letter he had written to the Ministry of Transport, and in which he had mentioned my own observation. He then showed me the letter that the Ministry had sent to him in response, which said that it would have been opportune to follow the advice of the Judge and to prohibit that procedure in Punta Raisi airport.

Well, this sounded strange to me: a technical decision taken because a then young judge – without any particular flight experience - had made a comment using good common sense!

Later, however, when the night visual approach was prohibited in Italy, I looked back at that episode as a sign of things to come; and I wondered if a bit more reliance on logic from those who write rules could have saved some lives.

7. Conclusions.

I have examined three air crashes involving the responsibility of air traffic controllers. It remains for me to sum up the evolution of Italian case law on this matter, which this paper outlines.

As already mentioned, until the end of the 1970s, the responsibility for air disasters was attributed almost exclusively to pilots, while other operators (air traffic controllers, airport managers, mechanics, and so on), were almost never liable.

With the 1979 disaster of Capoterra, however, this began to change, as responsibility was extended to those individuals. In the disasters we have examined, for example, the air traffic controllers were prosecuted.

The air controllers denied any criminal responsibility in two of the disasters (Capoterra and Mount Sette Fratelli). While they argued that it was not their duty to separate aircrafts from fixed obstacles, the judiciary authorities decided otherwise. In the case of the Capoterra crash, the court ruled that it was their duty because they are in the position of guarantee towards passengers. In the case of the Mount Sette Fratelli case, the court also stated that it was the duty of the air controllers to separate aircrafts from fixed obstacles because they are in the position of guarantee towards both passengers and crew.

I understand the reaction of the air traffic controllers and I realize, as a pilot, that if they had to warn all the pilots that their aircrafts are heading towards a fixed obstacle, it would most certainly slow the air traffic flow.

(I wish to clarify this statement to the lawyers here present, who do not have any piloting experience, with a clear example: landing at Palermo Punta Raisi airport on runway 25. All aircrafts coming from the north necessarily heads to Mount Gallo, and a couple of miles before reaching that mount, they turn right and initiate a “long final”. Now every time an aircraft approaches the airport from the north, the radar operator notices that the aircraft heads toward that mountain, but it would be useless and senseless to warn the pilot that pursuing his route would lead to an impact with the ground).

However, in particular situations, such as the night visual approach, and at particular airports where a difficult topography surrounds them, (e.g., Palermo Punta Raisi, Cagliari Elmas, Reggio Calabria, Florence and others), I believe that the obligation to inform pilots of the risk taken by making a night visual approach should be enforced; and I also believe that the jurisprudence of the Supreme Court we have examined is correct.

Let me add that - in any case - this jurisprudence should be applied with wisdom, keeping in mind the different circumstances that characterize each accident (however, if I were an air traffic controller, I would not give clearance for a night visual approach in any of the airports I mentioned, unless it were absolutely necessary to avoid storm cells).

The European Commission too, seems to have adhered to the view adopted by the Italian judicial authorities. In effect, Annex Vb Reg. 1108/2009, Article 2, letter c), paragraph 4, states that “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 volumes of airspace”.

I want now to conclude my report with the same statement and wish that I made in Rome.

-The statement:

Airplanes - I repeat – are the safest means of transport; and this is so because pilots and more generally those who are part of the world of aviation are true enthusiasts, who are studying and doing their Job with a pleasure and a passion rarely seen in other professions. Our pilots and air traffic controllers, be they military or civilian, to whom we entrust our lives, are all highly skilled and capable people; and I think that we owe the small number of aviation accidents to their professionalism.

- The wish:

I hope that this love of flying and all things related to it, together with the help of modern avionics and advanced airport technologies, make flying ever safer, so that the Judges who will replace me as President of the 4th penal section of the Italian Supreme Court will no longer have to work on aviation disasters.

With this wish, I have concluded my presentation. Thank you all for your patience and your attention.

Bruxelles, 30th October 2014

Pietro Antonio Sirena