

## **Birds at Milan Linate**



Monday the 28th of October, about 08:00 AM, holding point on taxiway T1 of Milan Linate airport. The photo speaks for itself: a small jet plane is on short final while a murmuration of starling is taking off and crosses the runway extension. Other flocks (or maybe the same) had been observed since the previous hour climbing and settling inside the airport and even crossing the runway just in the point where the big liners rotate for take-off. Behind the little airplane there is a sequence of commercial aircraft approaching, while behind the aircraft at the holding point other airplanes are waiting for their turn to take-off: it's a peak hour.

For at least one hour a remarkable number of starlings used Linate airport as a gathering point for the daily excursions into the country in search of food, that's a well known behaviour. During this

period they made the usual movements, flying up and down from the ground. The photo below, taken moments before the first one, provides documentary evidence of this behaviour.



While these photos were taken no bird control patrols have been seen in the area. Air traffic was not suspended waiting for the bird dispersal, and everything was running as usual.

Of course we don't know what happened after the aircraft from where the photos were taken took off, and probably the general public will never know if and how many collisions with birds occurred on the 28<sup>th</sup> of October at Linate, if not in the shape of rough data published, when things go well, one year later. The ANSV (Aviation Investigation Branch) did not start any investigation on incidents and the press did not release any news regarding accidents. That's good!

But not always things go so well with starlings.

It's worth remembering the number of accidents and casualties caused by this species : at least three

serious accidents, with 96 victims ( Boston, 04/10/60 : 62 dead; Eindhoven, 07/15/96 : 34 dead ) . The last, fortunately without casualties, occurred in Rome Ciampino on 10.11.2008, with the major part of the aircraft ended up in landfill.

All the three accidents have similar traits : the birds settling on the ground suddenly rose simultaneously crossing the aircraft landing or take off path at low altitude. When a plane is forced to fly through a flock a number of birds is ingested in one or more engines causing a sudden loss of power or even the shut down, as well as other consequences such as the pilot temporary loss of visual contact with the ground.

Are these accidents known and discussed among pilots, air traffic controllers, airport ground staff? Does everybody know the danger posed by this species ? The question is rhetorical, the answer is no.

Let's now analyze the countermeasures in place at Linate airport. Meanwhile, it must be said that this is one of the few Italian airports to have fully implemented the ENAC requirements in terms of information. The AIP (Aeronautical Information Publication) actually shows the following table:

AIP - Italia

AD 2 LIML 1-17

|                                       |  |                      |         |         |  |   |
|---------------------------------------|--|----------------------|---------|---------|--|---|
| Storno                                | Tutto l'anno, maggior presenza MAR-MAY e OCT-DEC                             | 0800-1100, 1400-1600 | 0 - 150 | 1 - 300 | Manto erboso e recinzioni                        | Area erbosa N-W e area erbosa e recinzioni S-E  |
| Starling                              | Whole year, major presence MAR-MAY and OCT-DEC                               |                      |         |         | Greensward and enclosure                         | Greensward N-W and greensward and enclosure S-E   |
| Piccione                              | Tutto l'anno, maggior presenza AUG-NOV                                       | 0700-1600            | 0-300   | 1-100   | Manto erboso                                     | Area erbosa testata 36 e area W.  |
| Pigeon                                | Whole year, major presence AUG-NOV   |                      |         |         | Greensward                                       | Attraversamenti in direzione E-W e W-E<br>Greensward head 36 and W area.<br>RWY crossing towards E-W and W-E                                    |
| Cornacchia                            | Tutto l'anno, maggior presenza AUG-OCT                                       | 0700-1900            | 0-100   | 1-100   | Manto erboso e manufatti                         | Area erbosa testata 36, area W e shoulder della pista e delle aree di rullaggio   |
| Crow                                  | Whole year, major presence AUG-OCT   |                      |         |         | Greensward and buildings                         | Greensward head 36, W area and RWY and taxiing area shoulder  |
| Gabbiano comune/<br>Black-headed gull | Tutto l'anno, maggior presenza OCT-MAR<br>Whole year, major presence OCT-MAR | 0700-1100, 1500-1700 | 0-300   | 1-150   | TWY  | TWY, APN, RWY 17/35   |
| Airone cenerino<br>Grey heron         | Tutto l'anno<br>Whole year   | 0600-2000            | 0-150   | 1-20    | Manto erboso<br>Greensward                       | Manto erboso di tutto il sedime<br>Aerodrome area greensward.   |
| Gheppio<br>Kestrel                    | Tutto l'anno, maggior presenza JUL-AUG<br>Whole year, major presence JUL-AUG | 0800-1900            | 0-100   | 1-6     | Recinzioni e in volo<br>Enclosure and flying     | STRIP, RWY 18/36  |
| Rondone<br>Chimney swift              | Tutto l'anno, maggior presenza MAY-JUN<br>Whole year, major presence MAY-JUN | 0700-1900, 1800-2000 | 0-300   | 1-150   | In volo<br>Flying                                | Tutto il sedime aeroportuale con prevalenza su testata 36<br>All aerodrome area especially on head 36   |
| Rondine<br>Swallow                    | Tutto l'anno, maggior presenza MAY-AUG<br>Whole year, major presence MAY-AUG | 0800-1700            | 0-150   | 1-60    | In volo/<br>Flying, RWY, TWY                     | Tutto il sedime aeroportuale con prevalenza su testata 36<br>All aerodrome area especially on head 36   |
| Polana<br>Buzzard                     | Tutto l'anno, maggior presenza AUG-DEC<br>Whole year, major presence AUG-DEC | 0700-1600            | 0-500   | 1-15    | Manto erboso ed in volo<br>Greensward and flying | Attraversamenti della pista durante le fasi di caccia e termiche<br>RWY crossing during hunting and heat stream                                 |
| Germano reale<br>Wild duck            | Tutto l'anno, maggior presenza JAN-JUN<br>Whole year, major presence JAN-JUN | 0600-2000            | 0-300   | 1-40    | In volo<br>Flying                                | In volo prevalentemente su testata pista 36 e settore N-E della testata pista 18<br>Flying especially on head RWY 36 and head RWY 18 N-E sector |

4 ANOMALIA NEL CAMPO MAGNETICO TERRESTRE AL SUOLO

LOCAL ANOMALY IN THE EARTH MAGNETIC FIELD ON THE GROUND

1) Una anomalia nel campo magnetico terrestre al suolo è stata riportata e misurata in prossimità del TDZ RWY 36. In questa area l'indicazione del nord magnetico può variare in modo considerevole ed influenzare gli equipaggiamenti di bordo. Alcuni problemi sono stati riportati da aeromobili MD80 equipaggiati con AHRS (Attitude Heading Reference System).

1) A local anomaly in the earth magnetic field on the ground has been reported and measured in the area close to the TDZ RWY 36. In this area local magnetic North indication may vary considerably and affect onboard setting. Some problems have been reported by MD80 aircraft equipped with AHRS (Attitude Heading Reference System).

that already shows how the bird issue is not exactly idyllic but at least it is clearly explained to the airport users.

We also quote below in full the ENAC observations on Linate taken from the Bird Strike Committee latest report, which unfortunately dates back to 2011.

*"Based on the average abundances of species present at the airport, the number of impacts per species, the effects of these impacts on the flights and air traffic, the BRI<sub>2</sub> index allows to determine the risk faced by the" Milan Linate Airport for the year 2011, which is equal to 0.12. Comparing this value with the BRI<sub>2</sub> of the previous years, it results a negative trend."*

NOTE: the BRI<sub>2</sub> is the airport risk index adopted by ENAC: the threshold of acceptable risk is situated between 0 and 0.5.

The report goes on saying :

#### IDENTIFYING POSSIBLE CAUSES

*Data collected by the method of risk assessment BRI<sub>2</sub> have to be interpreted taking into account not only the actual impacts, which dropped sharply with regard to the past, but also the number of birds surveyed during 2011 and therefore their presence and "dangerousness" .*

*To mitigate the risk, since August 1, 2010, SEA (Airport operator) has revised the monitoring and removal techniques of birds and other wildlife, by appointing the bird control service to "Bird Control Italy Ltd". and then updated the anti-bird procedure called PROCOP 180. This innovation in bird control has led to a considerable reduction of the events of bird strike, with a reduction of 49 % compared to 2010. But the strong intensification of monitoring has also led to a remarkable increase of the animals surveyed, that caused an increase of BRI<sub>2</sub> for 2011. In any case monitoring has allowed to identify the species to be kept under control in 2012, i.e. gray heron , kestrel and swift .*

*( Not the starling , Ed.)*

As for the active harassment devices on 2011 Linate could count on:

*Mobile and vehicular Distress Call, SpaceMaster system, Blank cartridges, LRAD-BCI*

It's a medium-high standard equipment, not inferior to other Italian or foreign airports.

The first consideration to be done is the following: have these devices been used, and correctly used, that morning? Eye witnesses report they didn't see any bird control car on the runway, taxiways and strips, also because the air traffic was never interrupted.

Some pilots report they heard in the air several warnings from the TWR regarding the generic presence of birds and were even required themselves to report about that; but how useful such general information can be for a pilot, or even those printed in the AIP and regarding just the possible "presence" of birds? Where are they, how many, what species they are, what are they doing "now", and first of all what are those on the ground doing to remove them: these are the useful information.

But the fundamental question, in our view, is that birds and airplanes, as seen in the first photo, can not be together in the same airspace: simply they can not (and must not), so there are two possible cases: either the observation and removal system is immediately effective, or aircraft have to go elsewhere or stay on the ground until the danger has passed.

Some pilots told us that the pressure of the slots, the weather conditions, the need to avoid delays, the air traffic itself do not leave you with so many choices: you land and take off in rapid succession, and it's not a matter of surprise that neither the pilot of the landing small jet, nor the crew at the holding point felt the need to ask (or better claim) the bird dispersal team for at least a runway inspection. So unfortunately things are going.

Linate "boasts" some sad records including being the first (and hopefully the only) Italian airport that suffered casualties due to a bird strike (2.6.2003, Lear45, two pilots dead). That time they were pigeons and we are still waiting for the final report and the recommendations to be released by the Investigation Agency.

Much has been done since then to improve the safety, but there is still much to do; we take the liberty to suggest to the airport operator to achieve another record, being the first Italian airport to install an avian radar, i.e. a radar that can detect for tactical purposes flocks of birds up to 5 km.