ANSV ref. n. ANSV-24-0315

PRELIMINARY REPORT

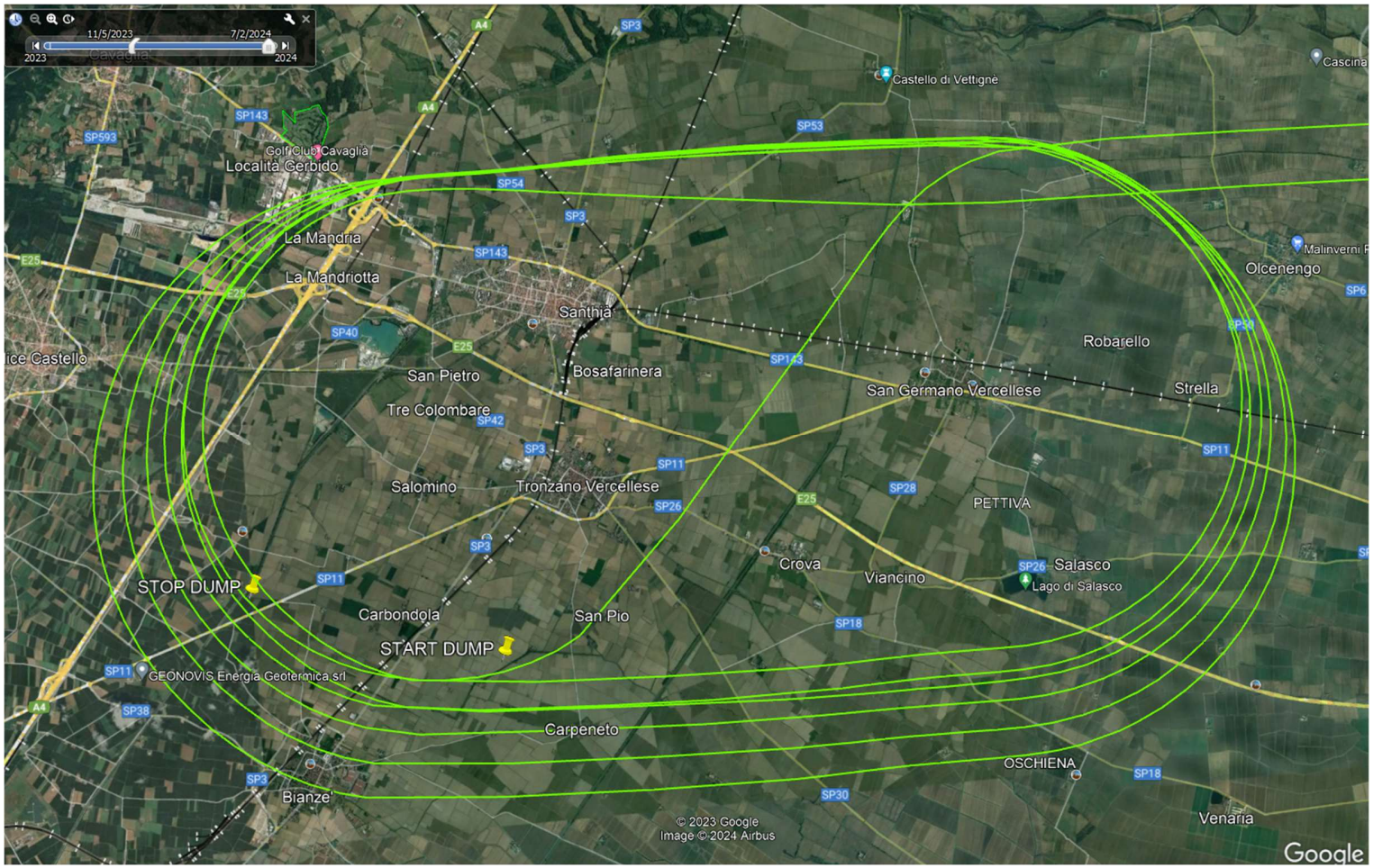
Serious incident - ARC: Abnormal runway contact - ANSV-24-0315, A/p Milano Malpensa, 09/07/2024, B 777-32WER, PT-MUG	
When	09-Jul-2024, 11:25:00 UTC
Where	Location: Milano Malpensa A/p 45° 37’ 48.0” N - 8° 43’ 23.0” E
Aircraft identification	Manufacturer/model: BOEING > 777 State of registry: Brazil Aircraft registration: PT-MUG S/N: 38888
Aircraft description	Aircraft category: Fixed Wing > Aeroplane Wake turb. category: Heavy Number of engines: 2
Aircraft operations	Operator: Brazil > Tam Linhas Aereas , Operator type: Corporate/executive Operation type: Commercial Air Transport
Aircraft recording devices	CVR: Solid state , Recovered , Part number: 032012 FDR: Digital FDR , Recovered , Part number: 112010
Qualification of the pilot in command	License type: ATPL , validity: Valid, no waivers Ratings: Held required ratings
Total number of persons on board	398
Injury level	None
Damages	Aircraft damage: Minor Third party damage: Minor , Object damaged: Structures > Aerodrome facilities
History of flight	Last point of departure: Italy > LIMC (MXP) : Milano/Malpensa Planned destination: Brazil > SBGR (GRU) : Sao Paulo/Intl Guarulhos Sp Flight phase: Take-off Duration of flight: 1.09
Flight plan	Filed flight rules: Instrument flight rules (IFR) Filed traffic type: GAT
Dangerous goods	Unknown
Weather conditions	Weather relevant: No , weather conditions: VMC Light conditions: Daylight , visibility: 9999 m
a) Description of the event	During the takeoff from RWY35L, the aircraft suffered a tail strike after the rotation. The crew requested to enter a hold near MXP to carry out the NNC procedures and returned to land in MXP. Damages to the tail skid and two other points of contact were identified. On the ground 720 meters of runway scraping were identified.

Preliminary.
The LATAM Airlines flight LA8073 of the 9th of July 2024 operated with Boeing B777-32WER registration marks PT-MUG was scheduled to fly from Malpensa (Italy; ICAO code: LIMC) to Sao Paulo (Brazil; ICAO code: SBGR) with EOBT [estimated off block time] 11.00 UTC.
Among the data on the FINAL LOAD SHEET were the following:
- ZFW [zero fuel weight] 219460 [kg]
- TOW [take off weight] 328425 [kg]
- FUEL IN TANKS 109625 [kg].

The delivery certificate of the refueling carried out at Malpensa reported a total of 122,702 liters of Jet-Fuel A-1 delivered.
The crew consisted of three pilots and 12 flight attendants.
There were 383 passengers on board for a total of 398 people.
The flight crew consisted of the instructor captain sitting in the right seat and PF (pilot flying) for the leg, the captain-in-training as PM (pilot monitoring) in the left seat and the relief captain sitting on the jump seat.
The FDR data shows the following parameters entered in the TAKEOFF REF page of the FMS (flight management system):
- Flaps 5°
- Thrust 56°
- V1 [decision speed]145 kt
- VR [rotation speed]149 kt
- V2 156 kt The METAR at Malpensa in the window of interest (1120Z) reported VRB01KT 9999 FEW040 30/19 Q1018 NOSIG.

Take-off took place for RWY35L using the entire available runway (TORA [take off runway available] 3914 m, TODA [take off distance available] 3974 m, ASDA [accelerate stop distance available] 3914 m).
Always referring to FDR data: GW [gross weight] 328.2 tons, 109100 kg fuel on board;
11.25'59" the aircraft began its take-off run;
11:26'37" pitch up command was recorded with the start of the rotation at 153 kt;
11:26'42" IAS=166 Kt, Pitch=8.2° Tail Strike Indicator 1 and 2 signals were activated.
At 11.26'49" the aircraft took off at an indicated speed of 180 kt.
At 11.26'52" the CVR recorded the audible tail strike warning.
At 11.27'10" the control tower warned the crew that a tail strike during the take-off run was observed.
On RWY35L, a footprint was found on the ground (furrow with varying depths of up to 6 cm) of 723 linear meters originating between the DM and DE intersections 2 meters left of the centerline and ending at a point just before the EM intersection 8.5 meters to the left of the centerline.
At 11.28'44" the crew, once airborne, requested to proceed to INLER point (IAF for RWY35 approach procedures) to perform a holding at 6000 ft.
At 11.32'32" the crew declared PAN, PAN, PAN.
At 11.40'05", the crew reported the need for fuel dumping.
Traffic control asked the crew if they could maintain an area further to the west th an the originally required one (i.e. the IAF INLER), in a holding with a track of 090°/270°.
At 11.44'29", the air traffic control advised the crew that parts detached from the aircraft had been found during the runway inspection.
The crew carried out the fuel dumping procedure which took place from 11.51'05" (valve opening) at position 45°19' N, 8°09' E with total indicated

	fuel of 103700 kg to 12.23'17" (valve closing) at position 45°20' N 8°07' E with indicated fuel of 31600 kg. The total Jet A-1 fuel dumped in approximately 32 minutes therefore amounted to 72,000 kg. The fuel dumping took place at an altitude of 6000 ft, at the indicated speed of 190 kt (corresponding to approximately 240 kt ground speed) and was carried out in seven holding pattern in the area between the following coordinates: - 45°23'N 08°06'E - 45°23'N 08°16'E - 45°20'N 08°18'E - 45°18'N 08°16'E - 45°18'N 08°07'E - 45°20'N 08°05'E After the fuel dumping, the aircraft performed an ILS 'Z' approach to land for RWY 35R at Malpensa, landing at 12.36' at a GW of 249.2 tons. As a result of the occurrence, the aircraft suffered damage to the tail skid, a drain mast and the tail strike sensor. The performance calculation carried out with OTP [on board performance tool] by the operator after the event, considering the TOW to be 328425 kg, RWY35L, 30° OAT [outside ambient temperature] returned the following parameters: - Flaps 5°. - Thrust 38°. - V1 173 kt. - VR 181 kt. - V2 186 kt.


11/5/2023
7/2/2024
2023
2024
Cavaglià
Castello di Vettigne
Cascina
SP143
SP593
Golf Club Cavaglia
Località Gerbido
A4
SP3
SP53
SP54
La Mandria
La Mandriotta
E25
E21
SP143
Santhià
Malinverni
Olcenengo
SP6
SP40
Robarello
San Pietro
Bosafarinera
San Germano Vercellese
Strella
Tre Colombare
SP42
SP11
Salomino
Tronzano Vercellese
SP26
SP28
PETTIVA
Crova
Viancino
Salasco
Lago di Salasco
STOP DUMP
Carbondola
San Pio
START DUMP
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