

Interim Statement

No. 2

Accident File No. 19-23

Ground Accident During Pushback

Date	July 17th, 2023
Aircraft	B747-400F & B757-200F
Registration	OE-LRG & N918FD
Location of event	Ben Gurion Int. Airport, N Apron

For Safety Purposes Only

The law regarding the safety investigation and its results

(Aviation Law, 2011 and ICAO Annex 13)

Safety investigation - An investigation of a safety incident to this chapter is a procedure that includes gathering information and analyzing it, drawing conclusions, including determining the causes of the safety incident or the factors that contributed to its occurrence, and providing recommendations related to the matter for the purpose of improving aviation safety, as far as the Aircraft safety Investigation Authority Israel (AIAI) deems it necessary. (section 104 of the law).

Purpose of a safety investigation - The sole purpose of a safety investigation is the prevention of safety incidents, and its purpose is not to attribute civil, criminal or disciplinary liability to such incidents. (section 105 of the law).

Duties of the AIAI - The IIC will be in charge of conducting safety investigations according to the provisions of this chapter. In fulfilling his duties, the IIC will act in accordance with the provisions of ICAO Annex 13, insofar as they are applicable in Israel, with the exception of such provisions for which the CAAI informed ICAO, according to the provisions of Section 4(b) of the Civil Aviation Authority Law, that Israel operates in a different manner. (section 108 of the law).

Independence - in carrying out a safety investigation according to this chapter, there is no prejudice against the AIAI manager and his deputy, other than the justice; The provisions of this section shall also apply to an investigator authorized under section 115, subject to the provisions of subsection (c) of said section. (section 109 of the law).

Inadmissibility of the final report - The final report will not be accepted as evidence in a trial, except in an appeal according to section 39, in an administrative petition or in an administrative appeal against decisions according to this law, according to the Law of Courts for Administrative Matters, 2000, and will not be used in a procedure taken by an employer against his employee, and regarding a procedure against a pilot employee according to section 38 - will not be used unless the circumstances stated in section 138(b) are met (section 124 of the law).

Confidentiality and inadmissibility of safety investigation material - Safety investigation material will not be given and will not be accepted as evidence in a trial and will not be used in a disciplinary procedure, in an administrative procedure or in a procedure taken by an employer against his employee. (section 123 of the law).

This document has been translated from Hebrew. Although efforts have been made to provide a translation as accurate as possible, discrepancies between the versions might occur. In such eventuality, the Hebrew version shall prevail.

General

On July 17, 2023, at 01:15 a.m. local time, a ground accident during pushback and engine start occurred at Ben Gurion International Airport (LLBG), N (November) apron.

Accident summary

A Boeing 747-400 cargo plane, operated by Challenge Airlines (BE), received clearance from the tower to be pushed back from parking stand 21 to engine start-up point 71 on Apron N.

The pushback was carried out using an IAI tug and a tow bar.

The flight crew started the aircraft's engines during the pushback.

Due to the aircraft's position at the end of the pushback, before transitioning to towing, the driver had to move to the second driver's cabin on the other side of the tug.

During the pushback/tow, the wireless voice connection between the ground personnel and the pilots was lost, without the pilot's noticed.

When moving between the two driver's cabins, only the tug's parking brake was engaged, without the aircraft's brakes being applied, while its engines were in the process of starting.

At that time, the tug's driver noticed that the aircraft was pushing the tug.

The driver's braking attempts from the cabin failed.

The head of the pushback team made some attempts to stop the tug from the open driving position, without success.

Due to the loss of voice communication with the flight crew, he exited the driver's cabin and signaled to the pilots to stop the aircraft's movement by flashing a white pocket flashlight

The pilots did not understand the meaning of the blinking light

The pilots identified unusual aircraft movement but did not stop it, out of a desire not to damage the tug beneath them, with which they had no line of sight. They relied on voice communication intended to alert them to any problem, unaware that the connection had been lost.

The tug was pushed by the aircraft in a rotary motion, the towbar shear pins broke, and the tug hit the aircraft's main undercarriage underneath the fuselage before it came to a complete stop.

The Boeing 747-400 aircraft moved in an uncontrolled, rightward rotating motion, during which its left winglet struck the rudder of a parked FedEx Boeing 757-200 cargo plane.

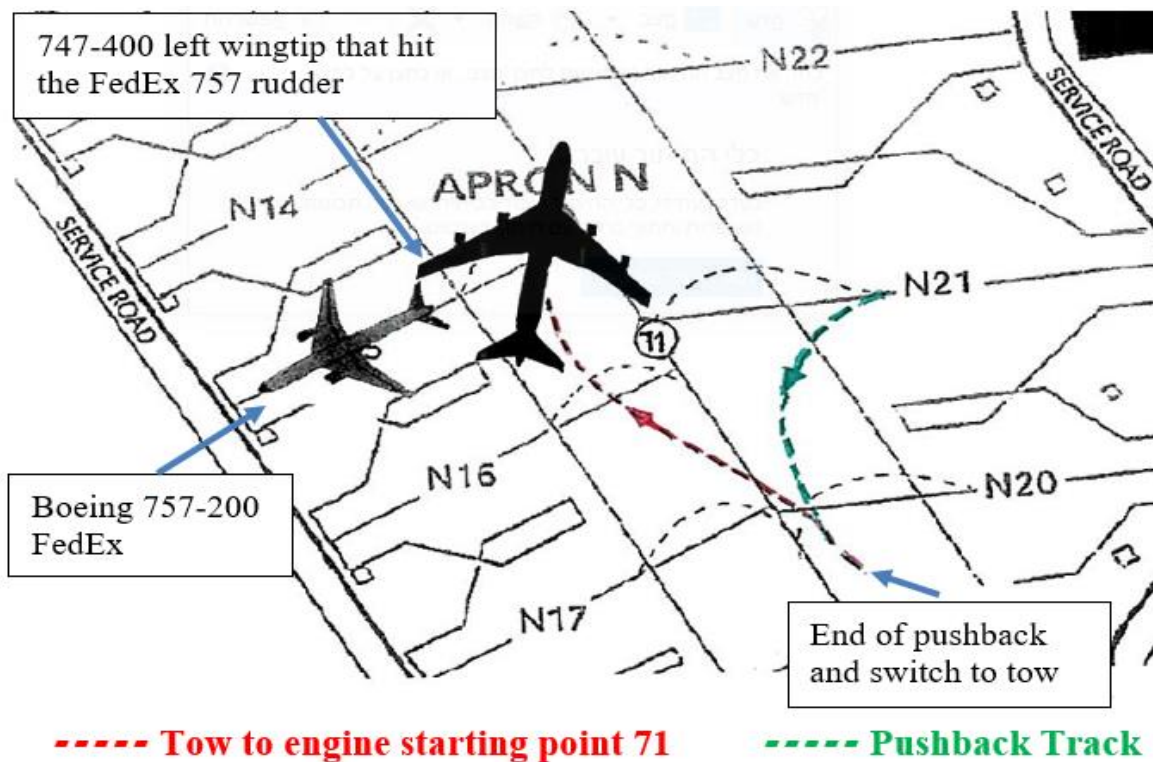
The Director of the Aircraft safety Investigation Authority (AIAI) of Israel decided to open an investigation in accordance with ICAO Annex 13.



Tug underneath the pushed-back aircraft



Rudder damage of the parked FedEx aircraft



Weather

CAVOK.

Injury to persons

No injuries to the persons involved.

Damage

The 747-400 aircraft sustained damage to its landing gear, landing gear doors, aircraft belly, tires and left winglet. The parked FedEx cargo aircraft sustained damage to its rudder. The tug damage was beyond repair and was removed from service.

Investigation progress

The investigation is nearing completion.

1. Operational Aspect:

All involved equipment and parties were investigated and examined And notified the investigation team clear picture of the accident scene and scenario. The activities of all the persons involved who contributed to this occurrence were checked: the ground crew, cockpit crew, as well as the involved equipment (the towing tractor and wireless communication equipment), the aircraft, parking aprons, and the actions taken by each involved party.

2. Regulatory and Procedural Aspect:

From a regulatory and procedures aspects, the laws and the regulations were reviewed. Additionally, the operational procedures of those directly involved in the accident were examined as well, particularly regarding the provision of ground services at Ben Gurion Airport (TLV), with an emphasis on aircraft pushback/towing while engines are being started.

The investigation so far reveals the following safety issues:

- ❖ **The direct cause of the accident** was the aircraft engines being started during pushback/towing while using a towbar tractor.
- ❖ **Other contributing operational factors** to the accident:
 - A. The aircraft having a relatively light weight.
 - B. The towing vehicle stopping and being parked. with the tug's parking brake only, without instructing the captain to set the aircraft's parking brakes, while the aircraft's engines were being started.

- C. The two-way communication, between the ground crew and the cockpit crew was lost, at some time during the pushback process.
- D. Failure to immediately stop the pushback upon loss of communication between the ground crew and the cockpit crew.
- E. Attempts to stop the tug at the expense of immediate signaling to pilots to stop the aircraft.
- F. Use of non-standard hand signals without illuminated marshalling wands.
- G. Lack of ground crew skill.
- H. The lack of risk analysis and management for aircraft pushback.

❖ **Indirect factors that contributed to the incident:**

- A. Lack of clear regulations in the area of ground operations on aircraft parking aprons, and consequently, lack of regulatory oversight on ground operations.
- B. Lack of clear definition regarding the responsibility of each entity in ground operations – CAAI (Civil Aviation Authority of Israel), IAA (Israel Airports Authority), IAI (Israel Aerospace Industries), and the airline involved

The continuation of the investigation, will focus mainly on the following issues:

- ❖ The hierarchy of the used procedures and lack of uniformity among them (the service provider, Ben Gurion Airport (TLV), the airline), and regulations - especially when compared to recognized and binding international procedures.
- ❖ The level of oversight over these activities – both by the airport personnel and by the regulator.

Main Parties Involved in the Investigation

Ministry of Transportation.

CAAI (Civil Aviation Authority of Israel).

IAA (Israel Airports Authority).

Ben Gurion Airport.

Challenge Airlines (BE).

Corrective actions which already taken by stakeholders

Following the investigation process till now and in accordance with conversations and meetings held with the parties involved in the accident, the following actions have been taken so far:

- ✓ The May 2025 AIP update, regarding Ben Gurion Airport, prohibits engines starting of wide-body aircraft, in Apron N, prior to reaching their final release point while they are being pushed/towed with a tow bar.
- ✓ "IAI has ceased pushing/towing of commercials aircrafts for take-off at Ben Gurion Airport.
- ✓ Several operators have temporarily banned the use of wireless headsets in this type of activity.
- ✓ CAAI has defined ground services as a national risk and has begun the study for future regulation activity

Sincerely,



Gad Regev

Director of Aircraft Safety Investigation Authority Israel

Date: 13.7.2025

Ref.: 4000-0098-2025-0000142

Returning objects seized during a safety investigation

In accordance with Section 114(b)(5) - (7) of the Aviation Law, 2011, the director of the Aviation Safety Investigation Authority will return seized objects, with the exception of aircraft debris, within 45 days from the date of publication of the final investigation report. The objects will be returned to the person from whom the objects were seized, or to their owners. Fragments of an aircraft will not be returned except at the request of the owner of the aircraft and at his expense. A request for their reinstatement must be submitted to the Aviation Safety Investigation Authority, no later than 45 days from the date of publication of the report. A person interested in having seized objects not returned to their owners may submit an appropriate request to the Magistrate's Court, in whose jurisdiction the object was seized.