

Il sistema eE-MOR per la segnalazione degli eventi aeronautici



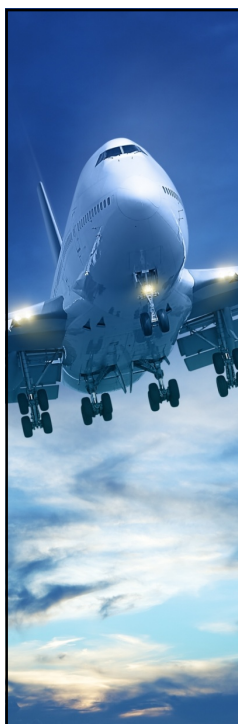
Roma, 24-25.03.2015



La classificazione delle occorrenze

Carlo Del Villano
FUNZIONE SAFETY

eE-MOR



Gli incidenti aerei

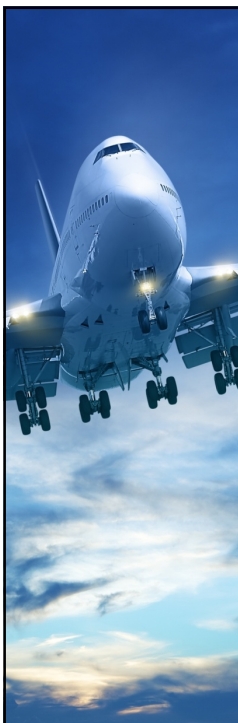


Un incidente aereo è definito tale quando nell'incidente viene coinvolto un **aeromobile**

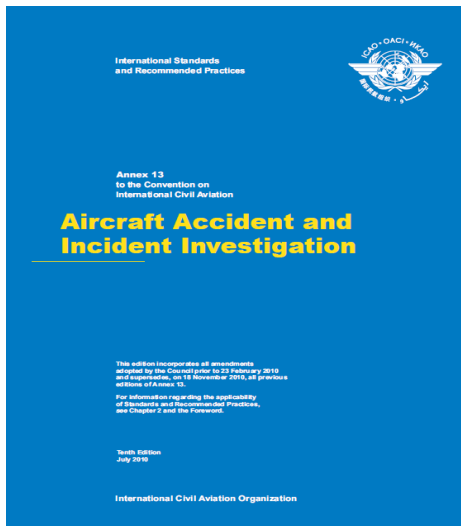


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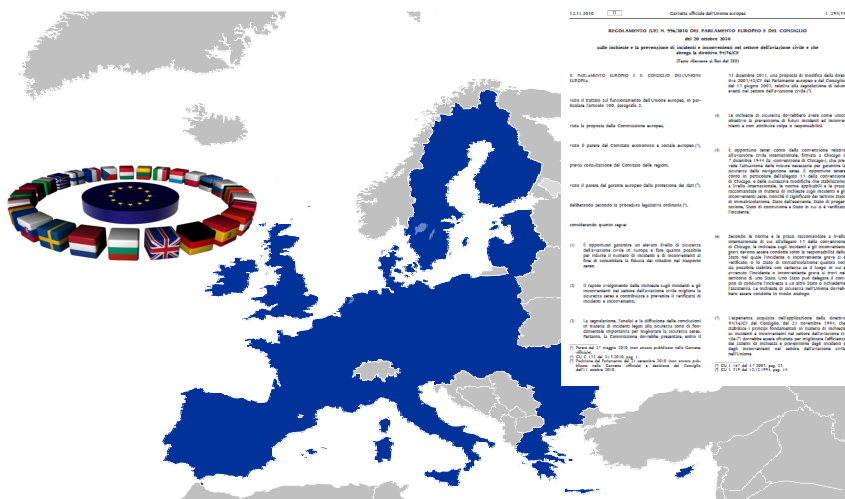
L'Annesso 13



Il sistema eE-MOR per la segnalazione degli eventi aeronautici



Il Regolamento (EU) 996/2010



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Definizione di “Accident” (Incidente)



INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

CHAPTER 1. DEFINITIONS

When the following terms are used in the Standards and Recommended Practices for Aircraft Accident and Incident Investigation, they have the following meanings:

Accident: An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

- a) a person is fatally or seriously injured as a result of:
 - being in the aircraft, or
 - direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
 - direct exposure to jet blast,
 except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or
- b) the aircraft sustains damage or structural failure which:
 - adversely affects the structural strength, performance or flight characteristics of the aircraft, and
 - would normally require major repair or replacement of the affected component,
 except for engine failure or damage, when the damage is limited to a single engine (including its cowling or accessories), to propellers, wing tips, antennas, probes, vanes, cowlings, wheels, fairings, panels, landing gear doors, windcreens, the aircraft skin (such as small dents or puncture holes), or the minor damage to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome); or
- c) the aircraft is missing or is completely inaccessible.

Note 1.— For statistical uniformity only, an injury resulting in death within thirty days of the date of the accident is classified, by ICAO, as a fatal injury.

Note 2.— An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.

Note 3.— The type of unmanned aircraft system to be investigated is addressed in 5.1.

Note 4.— Guidance for the determination of aircraft damage can be found in Attachment C.

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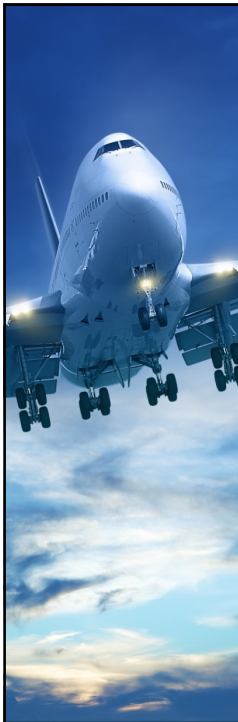
ACCIDENT



An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked in which:

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ACCIDENT

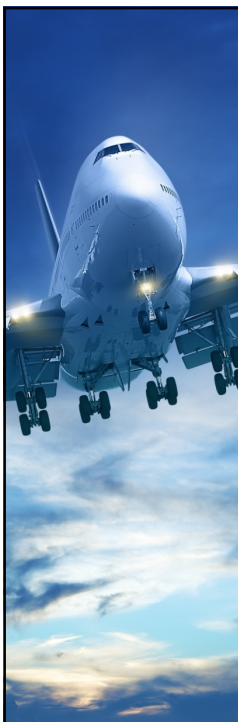


a **person** is fatally or seriously injured as a result of:

- being in the aircraft, or
- direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
- direct exposure to jet blast

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Serious injury

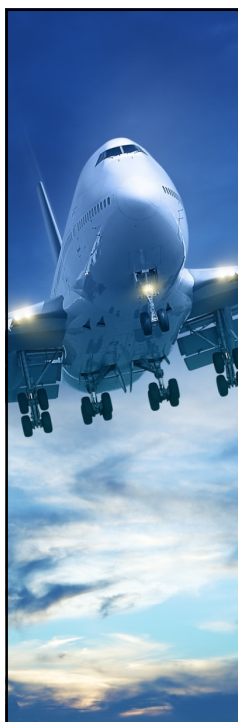


An injury which is sustained by a person in an accident and which:

- requires hospitalization for **more than 48 hours**, commencing within seven days from the date the injury was received, or
- results in a fracture of any bone (except simple fractures of fingers, toes or nose), or
- involves injury to any internal organ, or
- involves second or third degree burns, or any burns affecting more than 5 per cent of the body surface, or
- involves verified exposure to infectious substances or injurious radiation.

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ACCIDENT



the **aircraft** sustains damage or structural failure which:

- adversely affects the structural strength, performance or flight characteristics of the aircraft, and would normally require major repair or replacement of the affected component;

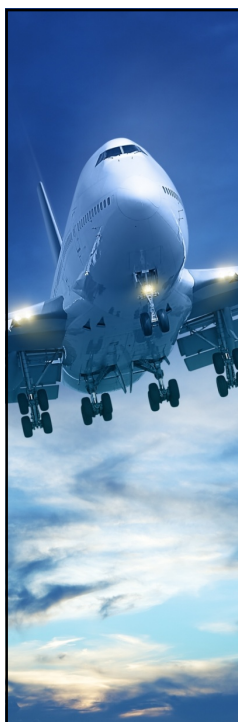
except:

for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome);

- the aircraft is missing or is completely inaccessible

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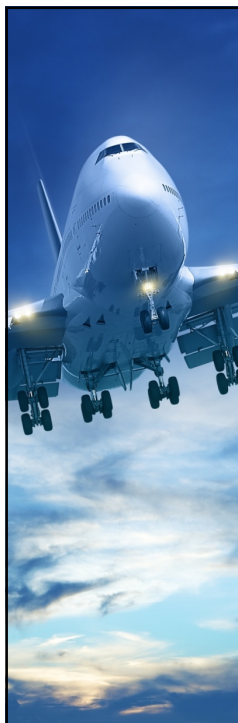
SERIOUS INCIDENT



An incident involving circumstances indicating that was a high probability of an accident and associated with the operation of an aircraft which takes places between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked

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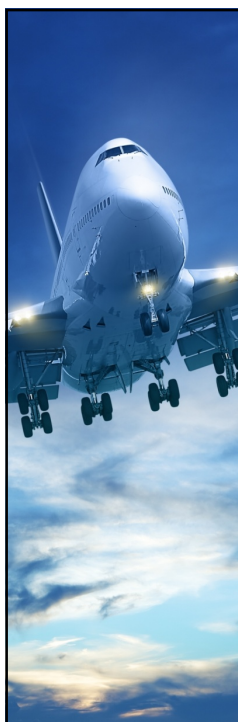
Definizione di “Serious Incident” (Inconveniente grave)



È un inconveniente associato all’impiego di un aeromobile le cui circostanze rivelino che esisteva un’alta probabilità che si verificasse un incidente tra il momento in cui, nel caso di un aeromobile con equipaggio, una persona si imbarca con l’intento di compiere un volo e il momento in cui tutte le persone che si sono imbarcate con la stessa intenzione sbarcano o tra il momento in cui, nel caso di un aeromobile a pilotaggio remoto, l’aeromobile è pronto a muoversi per compiere un volo e il momento in cui si arresta alla conclusione del volo e il sistema di propulsione principale viene spento.

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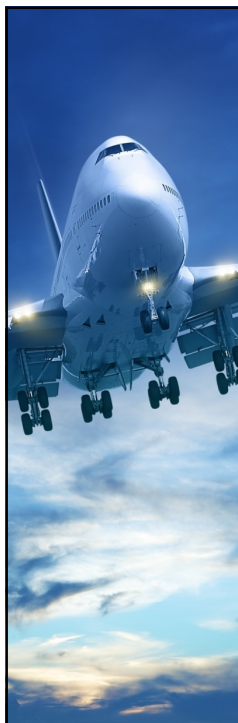
SERIOUS INCIDENT: alcuni esempi



- Manovra di scampo effettuata per evitare una collisione o una situazione di pericolo;
- Volo controllato fin quasi all’urto contro il terreno, evitato di misura;
- Decollo interrotto su pista chiusa o occupata , ovvero decollo da tale pista con separazione marginale dagli ostacoli;
- Atterraggio o tentativo di atterraggio su pista chiusa o occupata;
- Grave insufficienza nel raggiungimento delle prestazioni previste durante il decollo o la salita iniziale;
- Tutti i casi di incendio e presenza di fumo nella cabina pax o nel vano bagagli o d’incendio al motore, anche se spenti mediante agenti estinguenti;
- Qualsiasi occorrenza che abbia richiesto l’uso di ossigeno di emergenza da parte dell’equipaggio

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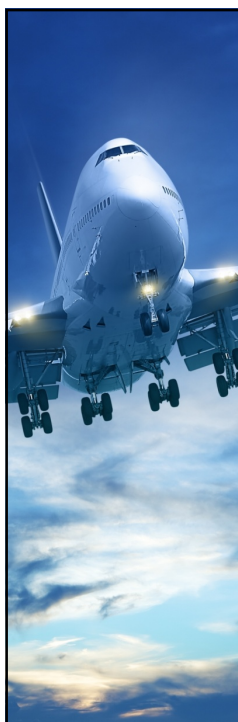
SERIOUS INCIDENT: alcuni esempi



- Avaria strutturale dell'a/m o disintegrazione del motore non classificata come "Accident" ;
- Malfunzionamento multiplo di uno o più sistemi di bordo che ne comprometta l'operatività;
- Qualsiasi circostanza relativa al carburante che richieda la dichiarazione di emergenza da parte del pilota;
- Atterraggio prima della soglia pista o sconfinamento laterale;
- Avaria ai sistemi, fenomeni meteorologici, eventi che possono aver causato difficoltà nel controllo dell'aeromobile;
- Avaria di più di un impianto a ridondanza obbligatoria per la condotta del volo e la navigazione;
- Inabilità fisica dell'equipaggio durante il volo.

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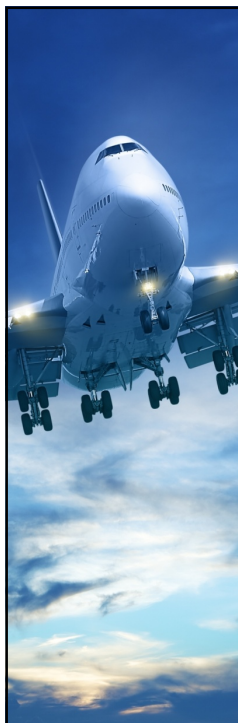
Incident



An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation

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Occurrence without safety effect

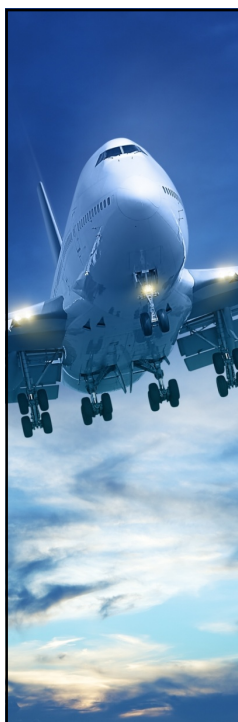


- an incident which has no safety significance
[Eurocontrol]

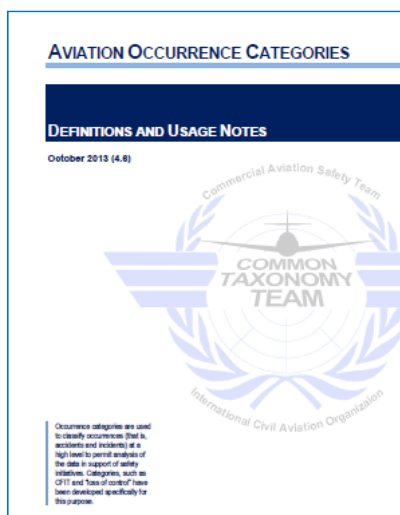
This appears to be a contradiction with the ICAO definition of an incident.

A possibly safety related occurrence not meeting the reporting requirements.

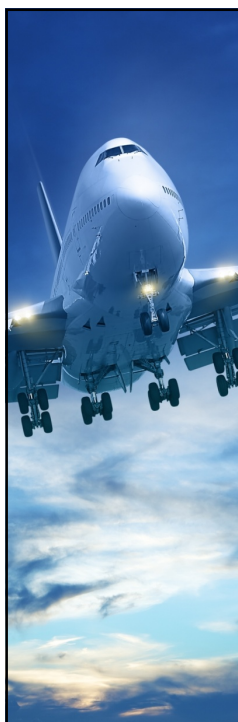
This could be e.g. the result of downgrading the incident after review.



Occurrence Category Taxonomy



CICTT = CAST/ICAO Common Taxonomy Team



What is the main target of standardized coding approach?



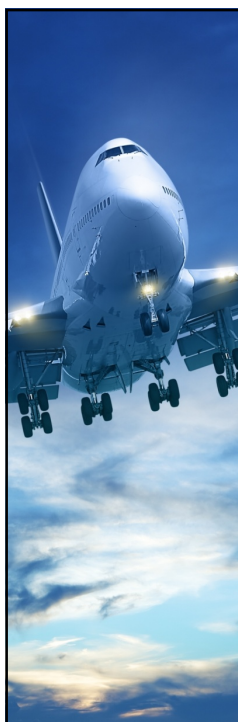
Data coding is the conversion of the narrative of the report into the ECCAIRS data format

we convert reports of occurrences into standardised, classified and categorized records by using a specific taxonomy

- **Use of common definitions**
 - Same term – same meaning
- **Use of common collection standards**
 - Same occurrence category – same fields of attributes filled in

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Standardized Approach



Data quality starts at the point when an occurrence is being entered into the system.

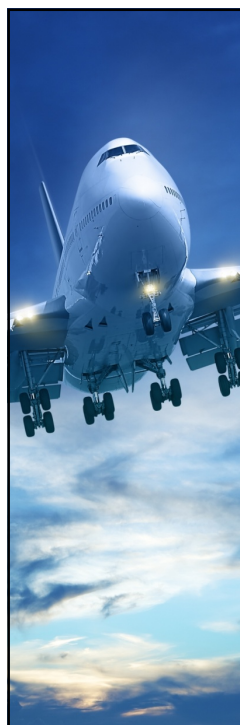
The occurrence information has its value only, if it is used

Golden rules

- principi generali che dovrebbero essere seguiti durante l'intero processo di classificazione
- Come dovrebbero essere codificati i dati per risultare utili in fase di analisi?

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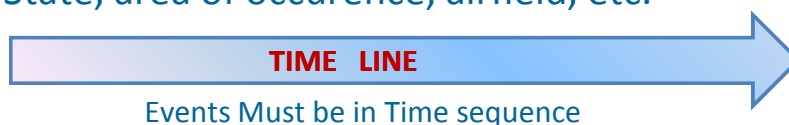


W W W



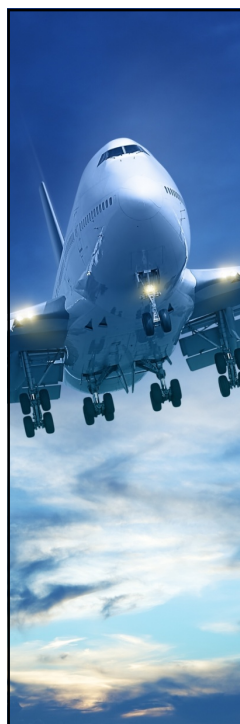
Tre domande da cui partire :

- **WHO**
a/c registration, a/c category, mass group etc.
- **WHEN**
Local Data, Local Time, UTC data, UTC Time, etc.
- **WHERE**
State, area of occurrence, airfield, etc.



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Read the definitions



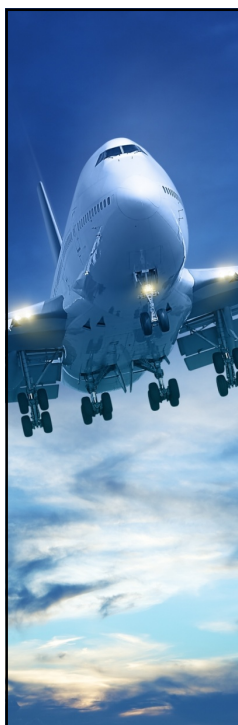
- Se le definizioni non sono applicate correttamente, i dati sono presenti, ma i valori sono inesatti o fuorvianti - il che porta a conclusioni errate
- Leggere le definizioni dimostra esperienza non mancanza di conoscenza

EQUIVOCI COMUNI

- Occurrence Category Ground Collision "GCOL" : *"Collision while taxiing to or from a runway in use."*
- **NON** può essere usata per *"collisions with ground while in flight"* (CFIT or LOC-I)

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Do not invent

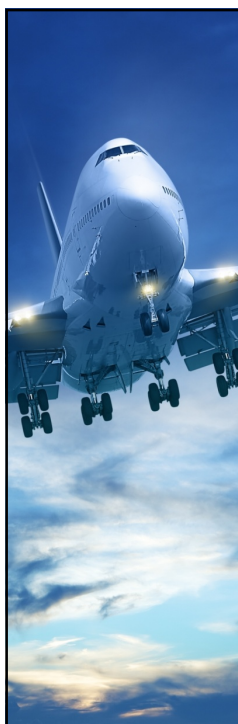


- Codificate solo le informazioni che avete a disposizione
- Codificate solo i fatti che sono stabiliti o riportati in documenti

differenti background, differenti esperienze, differenti prospettive

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Be specific – Enter all information



- Siate il più specifici possibile (*attenzione però alle speculazioni sui dettagli*)
- Non tralasciate alcuna informazione che possa essere codificata

Tutte le informazioni sono importanti dal punto di vista dell'analisi anche se potrebbero non sembrare pertinenti al momento dell'inserimento dei dati

Esempio: *The nose landing gear did not extend*

“Landing gear related event (ATA Code:3200)”

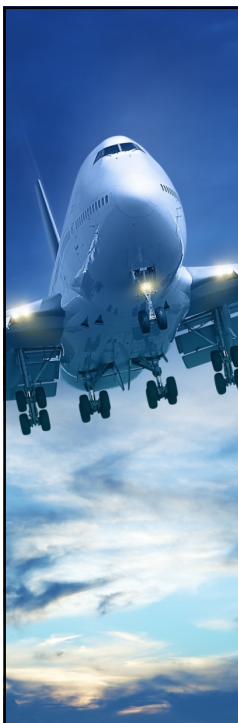
Non fermatevi

“Nose/tail landing gear related event (ATA Code:3220)”

Search engines

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Enter causal factors not consequences



Cause e fattori causali sono indispensabili per l'analisi, al fine di scoprire carenze che hanno portato ad un evento e quindi poter determinare le azioni necessarie per la prevenzione

Watch out for cause and effect

Example: The aircraft was found beside the runway with a broken landing gear

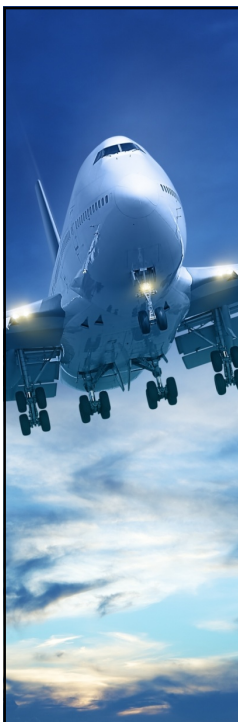
Did the a/c leave the runway because the landing gear broke (cause)

or

Was it broken because the a/c left the runway (effect).

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Complete the sequence of Events

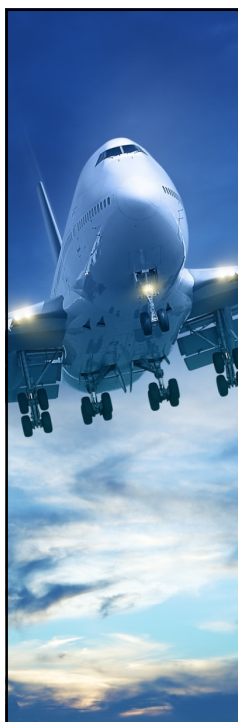


The screenshot shows a web-based interface for reporting aviation events. On the left, there is a tree view with categories like 'France, BEA Fsc000725', 'Narrative (French)', 'Narrative (English)', 'Weather', 'AEROSPATIALE - CONCORDE, F-BT', 'Events', 'History of flight', 'Injuries', 'Aircraft recordings', 'Aircraft meteo', 'CFIT', 'Fire', 'Survival', 'Ditch', 'Air traffic services', 'Wreckage/Impact', 'Flight Crew', 'Plot-in-command', 'Co-pilot', 'Flight engineer', 'MCDONNELL-DOUGLAS - DC-10, N1', 'Events', 'History of flight', 'CFIT', 'Fire', 'Ditch', 'Aerodrome (France - LFPG (CDG): P', 'Runway (26R)', 'Airspace (LFPG Loc Sud)', 'Recommendations', and 'Management'. The main area displays a list of events with details such as 'Material falling off the aircraft, during Take-off run. (Aircraft - N13067)', 'Aircraft minor repair: Non-standard', 'Maintenance/repair shop personnel, Human interface-maintenance procedures: Not followed', 'Aircraft collision with object/obstacle on ground, during Take-off run. (Aircraft - F-BTSC)', 'Aerodrome/heliport foreign object removal: Not done', 'Aerodrome management, Company, management, manning or regulatory issues', 'Tyres related event (ATA Code:3244), during Take-off run. (Aircraft - F-BTSC)', 'Main landing gear tyre: Burst/Weak', 'C44 airworthiness staff, The interface between humans in relation to manning organizations', 'Aircraft wing related event (ATA Code:5700), during Take-off run. (Aircraft - F-BTSC)', 'Wing plates/skins (ATA Code:5730): Weak', 'Aircraft manufacturing design staff, The interface between humans in relation to design standards', 'Fuel tank: Ruptured', 'Fuel tank: Leak/leaked', 'Aircraft fire, during Take-off run. (Aircraft - F-BTSC)', 'Turbine engine - non mechanical failure, during Take-off run. (Aircraft - F-BTSC)', 'Turbine/turboprop engine (ATA Code:7200): Stall/surge', 'Aircraft handling related event, during Take-off run. (Aircraft - F-BTSC)', 'Flight crew's decision to take-off: Too early', 'Pilot, Physical environment: Not expected', 'Pilot, Human sensory limitations', 'Government - Civil Aviation Authority/Administration, Human interface-simulator training: Insufficient', 'Aeroplane - deviation from intended flight path - heading, during Take-off run. (Aircraft - F-BTSC)', 'Landing gear related event (ATA Code:3200), during Initial climb. (Aircraft - F-BTSC)', 'Main landing gear doors: Damaged', 'Degraded performance (ATA Code:0101), during Initial climb. (Aircraft - F-BTSC)', 'Landing gear system (ATA Code:3200): Not retracted', 'Wing structure (ATA Code:5700): Burned; Damaged', 'Turbine/turboprop engine (ATA Code:7200): Shut down', 'Aeroplane - deviation from intended flight path/altitude (fixed wing aircraft), during Uncontrolled descent during take-off. (Aircraft - F-BTSC)', and 'An aircraft collision with the terrain, during Uncontrolled descent during take-off. (Aircraft - F-BTSC)'. At the top right of the interface, there is a message: 'Errore certificato'.

l'occorrenza può essere descritta attraverso la codifica

Events – stessa immagine della narrativa

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Align Events and Occurrence categories

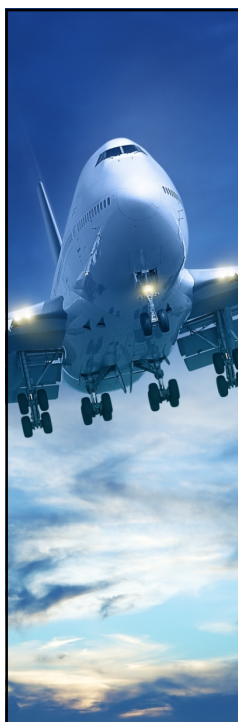


Le categorie delle occorrenze devono essere in linea con gli Eventi e viceversa

example: If SCF-NP, then there must be an event of failure of a non-powerplant component/system.

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Free Text Fields

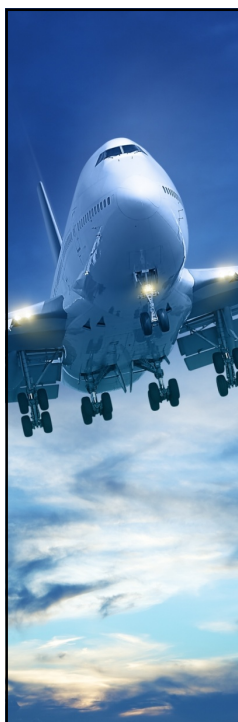


All'interno dei campi di testo libero (narrativa, titolo, note, ecc), non inserite informazioni sensibili,

- *es. i nomi (persone fisiche o operatori), dichiarazioni, ecc.*

Questo contribuirà alla de-identificazione delle informazioni per la condivisione dei dati

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“UNKNOWN” - Value Blank - “OTHER”



“UNKNOWN”

- L'informazione è stata richiesta ma è stato stabilito che non può essere ottenuta per il momento
(fornisce un'indicazione su ciò che è stato considerato).

“Value Blank”

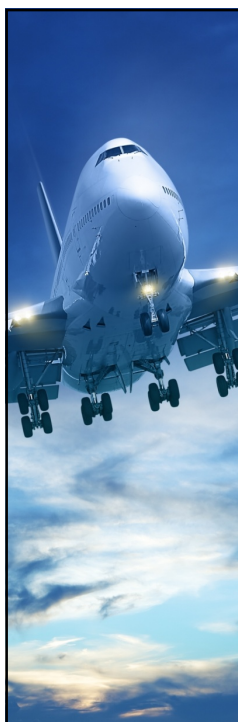
- Indica che il lavoro deve essere ancora fatto o che l'informazione non è disponibile del tutto

“OTHER”

- L'informazione non trova corrispondenza in alcuna delle codifiche ADREP

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Grazie per l'attenzione!



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