

### Background

Following the loss of a de Havilland Comet in 1954, Grounding coverage was introduced to provide liability cover to aviation manufacturers. Grounding coverage is provided for claims arising out of the loss of use of aircraft following an accident that necessitates grounding all other aircraft of that type pending investigation, repair or modification.



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The next fifty years were benign from a grounding perspective and flight safety improved dramatically during this period, but the risks associated with flying are by no means static. The technology of powerplants, airframes and systems continues to be pushed ever further, with both foreseeable and unforeseeable consequences for insurers.

### History of Grounding Events

1954	De Havilland Comet	No Grounding Coverage
1979	McDonnell Douglas DC10	No Grounding Claim
2000	Concorde	No Grounding Claim
2002	900 G.A. aircraft (Lycoming)	Claim paid
2007	Bombardier Q400	Claim paid
2012	EC225 / AS332	Claim paid
2013	Boeing B787 Dreamliner	Claim paid
2016	EC225	Claim paid
2018	Rolls-Royce Trent 1000 P & W GTF PW1000G	Claim paid Claim paid
2019	Boeing 737MAX	Claim paid

### Increasing Frequency and Costs

The frequency of grounding events currently exhibits an inverse trend to decreasing aircraft accidents. Six significant groundings since 2009 have generated claims in excess of USD1.25 billion for aviation insurers and we expect that the commercial, technological and regulatory dynamics will lead to more grounding events in the future.

Some of the factors that we believe have contributed to an increased frequency of groundings are as follows:

#### Technical Issues:

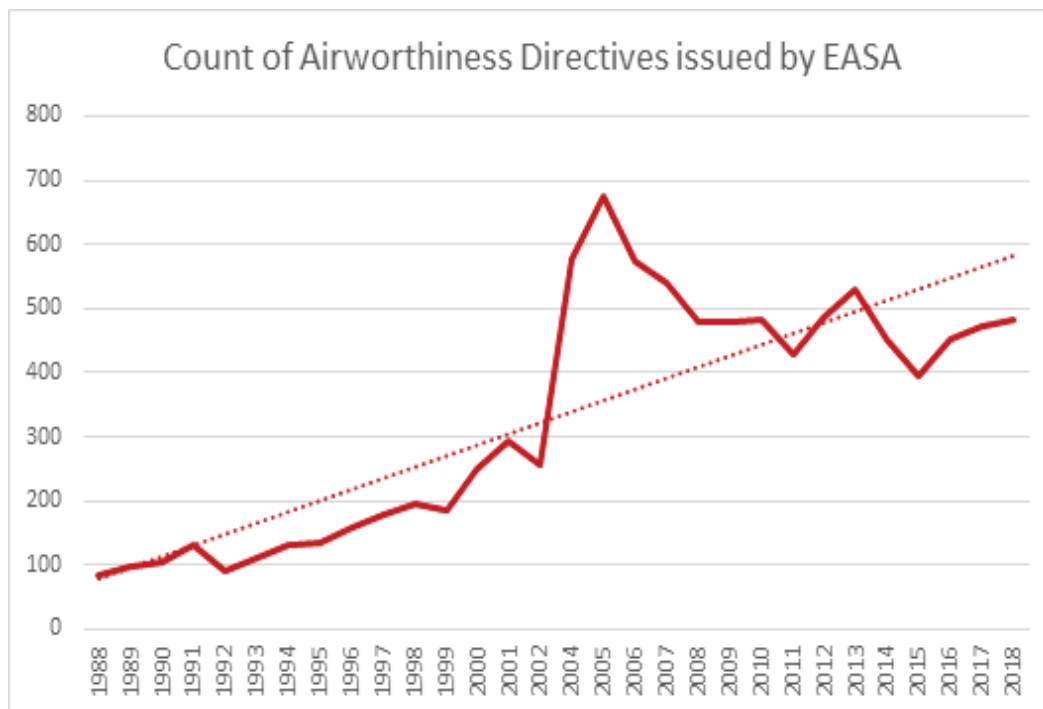
- Manufacturers are under pressure to achieve demanding performance targets within current technology constraints
- New materials and production techniques being tested within contemporary design architecture to achieve weight saving and increased fuel efficiency
- Gains are driven by a larger volume of small enhancements
- In service upgrades used to develop products following entry to service
- Drawing board to certification period reducing
- Regulators' position possibly more robust in considering post certification issues, in particular with engines

#### Commercial Issues:

- Competitive environment increases commercial imperatives such as entry to service timeframe / performance guarantees
- Aircraft operating life-cycle is less – requirement for new aircraft increasing – pressure on production rates
- Engine to airframe integration homogenous – B787 / A320 NEO – operators can change option late in programme
- Oil price effect – trending towards higher costs – will drive further demand for new aircraft
- Emerging markets driving increased demand for aircraft – increasing exposure

### Regulatory Dynamics:

We are seeing an increasing trend for Airworthiness Directives to be issued by regulators and we expect to see a tightening of regulatory scrutiny over certification and post-certification issues.



### Global Aerospace's Experience

Global Aerospace has first-hand experience underwriting Grounding cover and handling resultant claims. Current Grounding cover did not envisage the technological and regulatory landscape that exists today and it is therefore necessary to update the coverage language to be relevant for today's exposures.

### Our Approach

In 2018 we carried out an in-depth review of Grounding coverage currently provided to Global Aerospace Insured's worldwide and all common policy forms providing Grounding coverage in the aviation insurance market.

We reviewed the background and methodology for issuance of Airworthiness Directives by EASA and the FAA and reviewed samples of Airworthiness Directives.

We obtained input from our claims adjusters and internal and external legal advisors on the issues that have been encountered with existing policy language

### New Policy Language

A combination of commercial, technological and regulatory dynamics fuelling an increase in grounding events combined with policy language that does not provide clarity during the claims adjustment process is not a healthy position.

Our response to these challenges has been to develop new policy language which provides greater certainty to insureds, brokers and underwriters on the scope of coverage being provided. We believe this is a constructive approach and provides a modern, sustainable Grounding insurance product relevant for today's exposures.

1. Recognising that not all airworthiness directives or mandatory orders require action "before further flight" we have redefined Grounding to accommodate mandatory orders that permit flight operations for 48 consecutive hours or 5 flight cycles or 10 flight hours before withdrawal from flight operations is imposed.
2. Coverage responds to Groundings imposed by an order from either the FAA or EASA or the authority that originally issued the type certificate for the airframe or engines of the specified aircraft. This triple trigger provides comfort that coverage will be provided once any of these specified authorities determines an unsafe condition exists and prohibits flight operations.
3. Coverage may still be afforded if the Grounding order is preceded by an earlier order issued by another civil aviation authority or a service bulletin which meets the same immediacy criteria.
4. Coverage ceases when affected aircraft are no longer withdrawn from flight operations by any order from the FAA, EASA and the authority that originally issued the type certificate for the airframe or engines, or the orders are withdrawn or become ineffective. This provision provides comfort that cover is available until there is agreement from all of the specified authorities.
5. Coverage is provided for any Certified Aircraft – those with a type certificate or supplemental type certificate issued by a civil aviation authority.
6. During a Grounding, non-commercial, non-revenue flights will not interrupt the period of coverage.

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