

# *Extended Diversion Time Operations Workshop*



Alternate

Destination

ETP1

ETP2

Departure

## **Module 7** *Practical Exercise*



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## Background



You and your team are a part of the CAA Safety Oversight Department for EDTO Airways, an established WP-911 EDTO operator with 180 Minute EDTO approval for a fleet of 4 WP-911 aeroplanes.

EDTO Airways has reported a WP-911 IFSD event during the last month, this is the first IFSD event which has been reported by EDTO Airways since they began EDTO operations one year ago.

## **EDT** *Airways* **WP-911 IFSD Event Report**

On a flight from Honolulu, Hawaii (HNL) to Tokyo, Japan (NRT), WP-911 registry WP001 experienced an in-flight shutdown after encountering a flock of Albatrosses on initial climbout from HNL. Two birds were ingested into the # 1 engine, resulting in an EGT exceedance and a flight crew initiated manual shutdown (fuel cut). The crew then performed an air turn back to HNL for maintenance action.

The engine is currently undergoing a borescope to assess internal damage, after which it will be overhauled and returned to service. No further resolution or reporting actions are anticipated by EDTO airways as a result of this IFSD event.

## EDT Airways WP-911 Operational History

Month	Engine Hours	Cumulative Engine Hours	IFSDs	IFSD Rate/1000 Eng Hrs	World Fleet IFSD Rate
1	600	600	0	0.000	0.01094
2	900	1,500	0	0.000	0.00951
3	1,200	2,700	0	0.000	0.00933
4	1,500	4,200	0	0.000	0.00858
5	1,800	6,000	0	0.000	0.00732
6	2,100	8,100	0	0.000	0.00779
7	2,400	10,500	0	0.000	0.00821
8	2,400	12,900	0	0.000	0.00754
9	2,400	15,300	0	0.000	0.00795
10	2,400	17,700	0	0.000	0.00679
11	2,400	20,100	0	0.000	0.00516
12	2,100	22,200	1	0.045	0.00460

## Regulation References:

The following regulatory documentation and guidance material is provided in the student handout for use in this exercise:

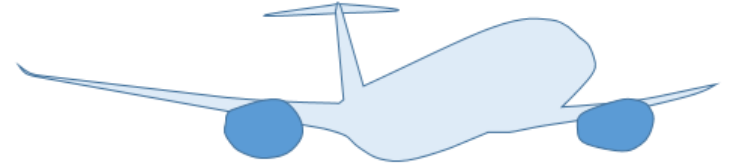
- **CAR 1.001:** Definitions, In-flight shutdown (IFSD)
- **CAR 121.020:** EDTO Propulsion System Monitoring
- **AC 120-EDTO:** EDTO IFSD Rate Guidance (Page 1)
- **AC 120-EDTO:** EDTO IFSD Rate Guidance (Page 2)

## Assignment – Team Breakouts

Review the IFSD information provided by EDTO Airways and related regulatory reference materials and discuss the following questions:

1. Does this event count as an IFSD for EDTO monitoring? If yes, why? If no, why not?
2. What additional information should the CAA expect EDTO Airways to provide?
3. What if any action should the CAA take with respect to EDTO Airways EDTO approval?
4. How would your answers change if this had been the 2<sup>nd</sup> reported IFSD?

**Each team should designate a scribe to take notes of their discussions, and a spokesperson to summarize their answers to each question.**



## **Team Breakouts (15 to 20 Minutes)**

## Conclusions, Solutions... and food for thought



1. Does this event count as an IFSD for EDTO monitoring?  
If yes, why? If no, why not?

Yes this is a valid IFSD event for the purpose of EDTO IFSD rate monitoring. Per the CAR 1.001 definition, IFSDs may be crew initiated and may be due to foreign object ingestion (e.g. bird strike).



## Conclusions, Solutions... and food for thought



### 2. What additional information should the CAA expect EDTO Airways to provide?

Since this IFSD event exceeds the 180 minute EDTO rate threshold, EDTO Airways should submit a report of investigation and any necessary corrective action to the CAA within 30 days of the event per CAR 121.020. This report should include the results of the borescope inspection and any other maintenance actions performed, as well as verification that the EGT spike which caused the crew to shut down the engine was in fact caused by the bird ingestion.

Common cause effects or systemic errors may not be relevant for a single IFSD, however EDTO Airways may wish to also discuss potential bird control mitigation measures with the HNL airport authority as part of its corrective actions.

## Conclusions, Solutions... and food for thought



### 3. What if any action should the CAA take with respect to EDTO Airways EDTO approval?

We would not anticipate any CAA action with regard to EDTO Airways EDTO approval as a result of this event, provided that the EDTO reporting requirements are satisfied.

While the IFSD caused the rate calculation to exceed the target maximum value for 180 minute EDTO specified in CAR 121.020, this was only a single IFSD event on a relatively small fleet with limited accumulated engine hours. The AC 120-EDTO guidance provides mitigation for these considerations and also states that the CAA will not revoke or reduce an existing EDTO operational approval solely because of a high IFSD rate.

## Conclusions, Solutions... and food for thought



### 4. How would your answers change if this had been the 2<sup>nd</sup> reported IFSD?

For those of you who did the math a 2<sup>nd</sup> IFSD would have increased the IFSD rate to 0.090, however the points made under question 3 remain applicable and we would not expect any difference in the CAAs response based solely on the rate calculation.

If EDTO Airways investigation reports for these two IFSDs reveal any common cause or systemic problems in their operations or maintenance programs, further action may be necessary to implement corrective actions and if not resolved then measures against the EDTO authorization may be appropriate.



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# End of Module 7 - Practical Exercise



**Thank You and Well Done!!**