

Safety Recommendation Number:	IRLD2018011
AAIU Event Reference:	IRL00916060
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Safety Recommendation Status:	Implemented, Closed

Safety Recommendation:

Avions de Transport Régional should consider consulting with operators of the ATR 42/72, as to the possibility of providing specific guidance to flight crew on re-instating electrical supply to unaffected equipment for essential services following use of the Electrical Smoke checklist, subsequent to a Static Inverter failure.

Response:

In an email dated 19 July 2019, ATR informed the AAIU that:

ATR acknowledges the safety recommendation regarding the possibility to provide specific guidance to flight crew on re-instating electrical supply to unaffected equipment for essential services following use of the Electrical Smoke checklist, subsequent to a Static Inverter failure.

Electrical smoke can be generated by failed equipment other than static inverter. A tradeoff on the designed procedure was made based on in service experience. Given the power of ACW current buses, smoke coming from its supplied equipment might propagate rapidly, supporting the action to switch off both AC Wild generators, particularly when the smoke source is not identified. During approach and landing phases, there is a high electrical demand on both ACW buses.

However, if the source of the smoke can be identified by the flight crew, there may be an opportunity to re-instate electrical supply to unaffected equipment.

The modification process of an emergency procedure in the AFM and the operational documentation, must go through simulator and flight test validations, where the respective application on smoke reported in service incidents is verified. Following the internal process, the revised procedure must undergo EASA's validation process, before its integration into operational documentation.

The target date to finish this internal analysis has been agreed for October 2019. We will subsequently provide you with the results.

AAIU Comment:

The AAIU considers the status of this Safety Recommendation to be 'Open'.

Response:

In further correspondence dated 14 January 2020, ATR informed the AAIU of:

ATR Work in Progress:

We are targeting to address 6 related smoke procedure safety recommendations and a project to work on the evolution of the procedure has been launched, with the following objectives:

- Enhance the guidance to flight crew on the choice of the most relevant smoke procedure, between ELEC SMOKE and AIR COND SMOKE
- In the Electrical Smoke procedure, improve the guidance for the crew in the identification phases of faulty equipment / re-instating electrical supply to unaffected equipment
- Evaluate the possibility of providing guidance to ensure efficient removal of persisting smoke

Changes on the smoke procedure have been agreed between design office and flight test and the next step is to go through simulator and flight test validations of each modification proposed, our target is to complete this activity in 2020.

In response to IRLD2018011 safety recommendation:

- We are evaluating the inclusion of a note to re-instate ACW GEN and/or DC BTC if neither ACW GEN and ACW BUS, nor DC/AC BUS 1 and 2 have been identified as the source of the smoke, respectively. The evaluation requires simulator and flight test activity.
- The trade-off is between the complexity to identify/isolate the source of the smoke and the application of the current procedure (which remains technically correct).
- Our flight test colleagues will also evaluate the human factors implications versus the 'golden rules' of flying the aircraft.

The removal of persisting smoke is a possibility on new A/C development, NAMS (New Air Management System) architecture will allow this possibility, however retrofit is not practical.

We will provide you an update regarding the modification of the procedures, once the validation process will be fulfilled, later this year.

AAIU Comment:

The AAIU considers the status of this Safety Recommendation to be 'In Process of Implementation'.

Response:

In a further email dated 17 September 2021, ATR informed the AAIU that:

Smoke procedures have been revised to integrate the following objectives:

- Enhance the guidance to flight crew on the choice of the most relevant smoke procedure, between ELEC SMOKE and AIR COND SMOKE
- In the Electrical Smoke procedure, improve the guidance for the crew in the identification phases of faulty equipment/re-instating electrical supply to unaffected equipment

In response to IRLD2018011 safety recommendation:

A note to re-instate ACW GEN, DC BTC and/or DC SVCE & UTLY BUS if the smoke source has been identified has been included in the procedure.

AAIU Comment:

The AAIU considers the status of this Safety Recommendation to be 'Implemented, Closed'.