



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

# SAFO

Safety Alert for Operators

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[http://www.faa.gov/other\\_visit/aviation\\_industry/airline\\_operators/airline\\_safety/safo](http://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo)

*A SAFO contains important safety information and may include recommended action. SAFO content should be especially valuable to air carriers in meeting their statutory duty to provide service with the highest possible degree of safety in the public interest. Besides the specific action recommended in a SAFO, an alternative action may be as effective in addressing the safety issue named in the SAFO.*

**Subject:** Thrust Lever Position during Landing with One Deactivated Thrust Reverser on Airbus A318, A319, A320, A321 Series Airplanes.

**Purpose:** This SAFO emphasizes the operational procedure of selecting idle thrust on *both* engines during a landing conducted with one deactivated thrust reverser.

**Background:** At least three accidents/incidents have occurred on A320 aircraft dispatched with one thrust reverser deactivated (as allowed by the master minimum equipment list (MMEL)) because the flight crew failed to retard *both* thrust levers to the IDLE detent for the flare and landing.

The thrust lever corresponding to the engine with the deactivated thrust reverser was left in the CLIMB detent during the flare and touchdown. MAX REVERSE thrust lever position was selected on the engine with the operative thrust reverser.

In each instance, the autothrust system remained engaged in the speed mode. This resulted in the thrust increasing within the range of the CLIMB limit thrust setting in order to maintain the selected speed. With the selection of reverse thrust on one engine, the autothrust monitoring function detected an abnormal condition and disconnected the autothrust system. When the autothrust disconnected, the thrust remained at the last commanded thrust level per the lockout feature, and a "THR LCK" amber message appeared on the flight mode annunciator (FMA). Ground spoilers did not deploy and autobrakes, if selected, did not activate. The most recent accident resulted in 199 fatalities.

**Discussion:** The A320 autothrust system utilizes six detents to establish the maximum full authority digital engine control (FADEC) computed thrust for the ambient conditions:

- TOGA
- FLEX/MCT
- CLIMB
- IDLE
- REV IDLE
- MAX REVERSE

The thrust levers do not move automatically but are manually placed in one of the detents by the pilot. The A320 design requires that *both* thrust levers be retarded to the IDLE detent by the pilot on landing. This action disconnects the autothrust system, initiates the system logic for the

deployment of ground spoilers and the activation of autobrakes, and avoids an undesired increase in thrust during the landing roll.

In the case of dispatch with one thrust reverser deactivated, the European Aviation Safety Agency (EASA) MMEL and the recent Airbus Accident Information Telex (TAM JJ3054 AIT 4, August 2, 2007) each call for the pilot to set *both* thrust levers to IDLE for the flare and to set both thrust levers to MAX REVERSE at touchdown. The FAA approved MMEL does not contain procedural guidance regarding the positioning of the thrust levers on landing and during the rollout. In all cases, the system logic requires that *both* thrust levers be retarded to the IDLE detent for flare and landing. Pilots should follow operator specific procedures for the selection of reverse thrust.

**Recommended Action:** Directors of safety, directors of operations, chief pilots, check airmen, pilot instructors, and line pilots of certificate holders operating Airbus A318, A319, A320, and A321 series airplanes should become familiar with the content of this SAFO. U.S. operators should implement the following recommended actions:

- Pilots, dispatchers, and maintenance personnel should ensure compliance with the FAA approved MMEL prior to dispatch.
- Directors of operations should develop operator specific FCOM/POH procedures for landing with a thrust reverser deactivated that are consistent with Airbus recommended procedures.
- Directors of operations and chief pilots should emphasize to pilots, through an Operational Bulletin or other written communication means, the necessity to select idle thrust on *both* engine thrust levers for the flare and touchdown.
- Dispatchers should insert the following message on the flight crew dispatch release when the airplane is dispatched with one thrust reverser deactivated:

For a landing conducted with one deactivated thrust reverser, ensure that *both* engine thrust levers are retarded to the IDLE detent for the flare and the touchdown.

- Pilots should select an appropriate autobrake level for landing in accordance with operator-specific procedures.
- A330 operators should consider the information presented in this SAFO and apply it to their fleets as applicable.

Questions or comments on this SAFO should be addressed to Pete Neff, SEA-AEG, (425) 917-6628, email: [pete.neff@faa.gov](mailto:pete.neff@faa.gov) or Jim Sheppard, SEA-AEG, (425) 917-6623, email: [james.k.sheppard@faa.gov](mailto:james.k.sheppard@faa.gov).