



AC NO: 91-41

DATE: MARCH 12, 1974

ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

SUBJECT: GROUND OPERATIONAL PROCEDURES FOR AIRCRAFT ENGINE EMISSION
REDUCTION AND FUEL CONSERVATION

1. PURPOSE. This Advisory Circular recommends ground operational procedures that will minimize air pollution from aircraft ground operations and conserve fuel.
2. BACKGROUND. The Clean Air Amendments of 1970 directed the Administrator of the Environmental Protection Agency, after consultation with the Secretary of Transportation, to set aircraft emission standards. The Amendments also require EPA to study aircraft emissions with regard to their effect on health and welfare. As one result of this study, EPA issued an Advance Notice of Proposed Rule Making proposing to limit the number of engines used for taxi to and from the runway. Concurrently, the existing and projected shortfall of aviation fuel required the analysis of fuel conservation measures by FAA. This study also included the possibility of reducing the number of engines required for taxi. Study estimates indicated substantial reductions in carbon monoxide and hydrocarbon emissions are possible as well as a significant fuel savings.

The FAA, EPA, ATA and ALPA investigated the possibility of reducing the number of operating engines on turbojet aircraft for the taxi and ground idle modes. As a consequence of this investigation, an operational evaluation was conducted at Atlanta International Airport. Test results led to the conclusion that operating fewer engines on three- and four-engine turbojet aircraft is in many cases feasible when taxiing from the runway to the terminal after landings or during protracted holds, but should not be a mandatory requirement at any time.

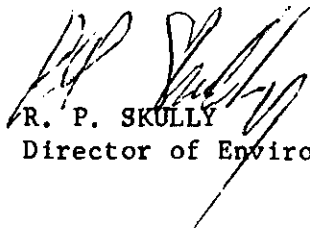
3. RECOMMENDED PROCEDURES. Operators of three- and four-engine turbojet aircraft should develop procedures for reducing emissions and fuel usage and submit them to FAA. The following taxi and ground idle procedures under the conditions and limitations judged appropriate by the aircraft operator and the pilot-in-command are recommended.
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TAXIING. When clear of the runway after landing, or in a delay absorbing area, four-engine turbojet aircraft should shut down one or two engines. Three-engine turbojet aircraft should shut down one engine.

The taxi procedure is not recommended under the following conditions:

- a. When auxiliary power units are inoperative on aircraft so equipped, or when power requirements otherwise preclude shutdown
- b. During adverse weather conditions such as ice, sleet or snow
- c. Under any conditions that the pilot-in-command considers to be hazardous, operationally unsuitable or creating undue passenger discomfort.



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