



AEROSPACE INFORMATION REPORT

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Superseding AIR1296

Concurrent Design of Engines and Specifications of
Starting Systems for Helicopters

RATIONALE

During review within the S-12 committee it was apparent that the information contained within this publication is obsolete and no longer constitutes a valuable reference source for the subject matter that it was intended to be. It is recommended that a ballot to cancel this AIR be opened for the S-12 committee.

CANCELLATION NOTICE

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1. PURPOSE

This document recommends helicopter engine design decisions be made with full knowledge of their effect on the engine plus its starting system in a helicopter.

2. SCOPE

It is recommended that all helicopter engine development programs include an evaluation of engine starting requirements. The evaluation should include starting requirement effects on helicopter weight, cost, and mission effectiveness. The evaluation should be appropriate to the engine stage of development.

3. EVALUATION PROCEDURE

Helicopter engine development occurs in three stages. Starting system evaluation appropriate to each stage is recommended.

- 3.1 Technology Demonstrator Program: No specific application and no mission exists. Scalability is a prime consideration. Design analyses should be conducted to define best estimate plus error tolerance of starting requirements over a spectrum of mission requirements. Starting system technology work should accompany the Engine Layout Conceptual Design.
- 3.2 System Demonstrator Program: An application exists but the mission is not firm. Prior to design freeze, trade-off analyses should be conducted based on the anticipated application. The weight, cost and mission effectiveness penalties to the helicopter of various starting systems should be defined over a spectrum of mission requirements.
- 3.3 Development Engine Program: An application exists, a mission may be firm, and the engine will be fully qualified. Significant unanticipated helicopter penalties may be imposed by starting system requirements after the engine design freeze and during the helicopter development program. Trade-off options should be evaluated and engine design changes may be made.

PREPARED BY
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