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NASA TECH BRIEF

Lewis Research Center

A Computer Program for Calculating Design and Off-Design Performance for Turbojet and Turbofan Engines

A digital computer program, GENENG, has been developed which calculates steady-state design and off-design performance for turbofan and one- and two-spool turbojet engines. The program uses component performance maps to enable the user to do analytical engine cycle calculations. Through a scaling procedure, each of the component maps can be used to represent a family of maps (different design values of pressure ratios, efficiency, weight flow, etc.). Either convergent or convergent-divergent nozzles may be used.

Notes:

1. The program is written in FORTRAN IV for the IBM 7094 Mod 2 computer. With modifications, the program can be used on all machines that have a FORTRAN compiler.
2. A derivative program, GENENG II, calculates design and off-design performance of two- or three-spool front- or aft-fan turbofan engines with as many as three nozzles (or airstreams), Reference: LEW-12011.
3. Inquiries concerning these programs should be directed to:

   COSMIC
   Information Services
   112 Barrow Hall
   University of Georgia
   Athens, Georgia 30602
   Reference: LEW-12010

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