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NASA TECH BRIEF

Lewis Research Center

A Computer Program for Calculating Design and Off-Design Performance of Two- and Three-Spool Turbofans with as Many as Three Nozzles

A computer program, GENENG II, has been developed which calculates the performance of two- or three-spool turbofan engines with as many as three nozzles (or airstreams). The program uses component performance maps to enable the user to do analytical engine cycle calculations. Through a sealing 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. An antecedent program, GENENG, calculates steady-state design and off-design performance for turbofan and one- and two-spool turbojet engines, Reference: LEW-12010.
3. Inquiries concerning these programs should be directed to:

   COSMIC
   Information Services
   112 Barrow Hall
   University of Georgia
   Athens, Georgia 30602
   Reference: LEW-12011

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