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Langley Research Center



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Computer Program for Stresses and Buckling of Heated Composite-Stiffened Panels and Other Structures (BUCLASP 3)

The problem:

A method was needed for the analysis of thermal and thermal buckling stresses in stiffened flat and curved panels.

The solution:

A general-purpose computer program has been designed which is intended for the thermal stress and instability analyses of structures such as axially-stiffened curved panels.

How it's done:

The structure is idealized as an assemblage of beam elements and laminated flat and curved plate strip elements, each element extending the entire length of the structure. The two parallel ends of the panel must be simply supported, but arbitrary elastic boundary conditions may be imposed along one or both of the sides. Any variation in the temperature rise through the cross section of a panel is considered in the analyses, but it must be assumed that the temperature field is constant in the longitudinal direction. Two types of

instability analyses can be effected by this program: (1) thermal buckling with temperature variation as specified and (2) buckling due to an in-plane biaxial loading.

Notes:

1. This program is written in FORTRAN IV and COMPASS for the CDC 6000-series computers.
2. Inquiries concerning this program should be directed to:

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Reference: LAR-11533

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