Dr. Herbert Becker

Selected Publications:

G. Gerard and H. Becker, "Column Behavior under Conditions of Impact, " J. Aero. Sci. 19, 58-60 (1952)

Gerard, G. and Becker, H., “Handbook of Structural Stability”, NACA TN 3781 to 3785, 1957

Gerard, G., Becker, H., 1957. Handbook of structural stability: part I, buckling of flat plates, NACA Tech. Note No. 3781.

George Gerard and Herbert Becker, “Handbook of structural stability, Part 3, Buckling of curved plates and shells, NACA TN-3783, August 1957, Accession Number : ADA302018,
proxy Url : http://handle.dtic.mil/100.2/ADA302018
ABSTRACT: Available theories and test data on buckling of curved plates and shells are reviewed. The test data for torsion and external-pressure loadings are correlated in terms of linear buckling theories for both the elastic and inelastic ranges. The cases which exhibit a marked disagreement between linear theory and test data have been analyzed by a unified semi-empirical approach which is satisfactory for analysis and design purposes.

Becker, Herbert: Handbook of Structural Stability: Part VI— Strength of Stiffened Curved Plates and Shells. NACA TN-3786, 1958.

Becker, H. and Gerard, G., "Elastic Stability of Orthotropic Shells", Journal of the Aerospace Sciences, Vol. 29, No. 5, pp. 505-512, May 1962.

Becker, H., Gerard, G. and Winter, R., “Experiments on axial compressive general instability of monolithic ring-stiffened cylinders”, AIAA J., Vol. 1, No. 7, July 1963

Milligan R., Gerard, G., Lakshmikantham, C., and Becker, H., "General Instability of Orthotropic Stiffened Cylinders under Axial Compression", AIAA Journal, Vol. 4, No. 11, pp. 1906-1913, November 1966, Also Report AFFDL-TR-65-161, Air Force Flight Dynamics Laboratory, USAF, Wright Patterson Air Force Base, Ohio, July 1965.

C. Lakshmikantham and H. Becker. Minimum weight aspects of stiffened cylinders under compression. Technical Report TR-CR-81693, NASA, 1967.

J.E.M. Jubb (1), I.G. Phillips (1) and H. Becker (2)
(1) Division of Aircraft Design, Cranfield Institute of Technology, Bedford, England
(2) Sanders Associates Inc., New Hampshire, U.S.A.
“Interrelation of structural stability, stiffness, residual stress and natural frequency”, Journal of Sound and Vibration, Vol. 39, No. 1, March 1975, pp. 121-134, doi:10.1016/S0022-460X(75)80212-4
ABSTRACT: Results have been collected on studies relating the stability load of a structure to stiffness and natural frequency. Additional experimentation has been done to include effects of residual stresses and the major portion of this paper is devoted to a discussion of these studies. Finally, further examinations have been made of recent theories to relate stability load, stiffness, frequency and residual stress. The results have been

reported here in order to reveal the range of relationships that can be found among these four structural features, and to demonstrate a reasonably sound basis for non-destructive testing procedures to determine residual stresses and structural stability. Hopefully, it also will stimulate further research in this hitherto neglected area.