

Second, the effect of initial imperfections is enormous for circumferential mode buckling according to incremental theory (curve 1A compared to Eq. (4), Fig. 2). Circumferential buckling according to deformation theory, however, is not very sensitive to initial imperfection (curve 3A compared to curve 3, Fig. 1). These results are now in agreement with those of Onat and Drucker for the imperfection sensitive cruciform.⁶

On the basis of the preceding remarks and the fact that the axisymmetric mode is not greatly affected by initial imperfections,^{2,3} what was originally conjectured by Gerard³ can now be considered firmly established. Cylinders fail in the diamond-shaped circumferential mode pattern in the proportional limit region of the shell material, because the presence of small unavoidable imperfections in shape lowers the circumferential mode buckling stress below the corresponding axisymmetric mode value. However, above the proportional limit region, the axisymmetric mode will be observed, because the spread in predictions between circumferential mode and axisymmetric mode buckling will be too great to be overcome by initial imperfections acting in conjunction with a circumferential mode.

References

- ¹ Lee, L. H. N., "Inelastic buckling of initially imperfect cylindrical shells subject to axial compression," *J. Aerospace Sci.* **29**, 87-95 (1962).
- ² Batterman, S. C., "Plastic buckling of axially compressed cylindrical shells," *AIAA J.* **3**, 316-325 (1965).
- ³ Gerard, G., "Compressive stability of orthotropic cylinders," *J. Aerospace Sci.* **29**, 1171-1179 (1962).
- ⁴ Gerard, G., "Compressive and torsional buckling of thin-wall cylinders in yield region," *NACA TN3726* (August 1956).
- ⁵ Budiansky, B., "A reassessment of deformation theories of plasticity," *J. Appl. Mech.* **26**, 259-264 (June 1959).
- ⁶ Onat, E. T. and Drucker, D. C., "Inelastic instability and incremental theories of plasticity," *J. Aeronaut. Sci.* **20**, 181-186 (1953).
- ⁷ Batterman, S. C., "Tangent modulus theory for cylindrical shells: Buckling under increasing load," *Univ. of Pennsylvania, National Science Foundation GK-309/2* (1965).
- ⁸ Bijlaard, P. P., "On the plastic stability of thin plates and shells," *Proc. Koninkl. Ned. Akad. Wetenschap.* **50**, 765-775 (1947).
- ⁹ Gerard, G., "Plastic stability of geometrically orthotropic plates and cylindrical shells," *New York Univ., TR SM 61-11* (July 1961).

Errata: "Effect of Heterogeneity on the Stability of Composite Cylindrical Shells under Axial Compression"

JAMES TASI*

Martin Company, Denver, Colo.

[AIAA J. **4**, 1058-1062 (1966)]

THE left-hand side of the second and third equations in Eqs. (10) should be $[B]$ and $[D]$, respectively. In Table 2 the value of ν_{12} for S994 glass-epoxy composite should be 0.3.

Received August 10, 1966.

* Associate Research Scientist; now Post-Doctoral Fellow Mechanics Department, Johns Hopkins University.

Errata: "Observations of Turbulent Reattachment behind an Axisymmetric Downstream-Facing Step in Supersonic Flow"

ANATOL ROSHKO* AND GERALD J. THOMKE†

Douglas Aircraft Company Inc., Santa Monica, Calif.

[AIAA J. **4**, 975-980 (1966)]

IN Fig. 4c, only the data for $h = 0.25$ and 1.02 are for $M_s = 3.90$, as labeled; the data for $h = 1.68$ actually correspond to $M_s = 4.37$. This error is repeated in Fig. 8. The data corresponding to $M_s = 3.90$, $h = 1.68$ may be found in Fig. 9.

Received August 23, 1966.

* Consultant; also Professor of Aeronautics, Graduate Aeronautical Laboratories, California Institute of Technology. Associate Fellow AIAA.

† Engineer-Scientist, Aerophysics Laboratory. Associate Member AIAA.