of the critical stress obtained by the minimization of the positive root only while there are two roots available.

2) The conclusion drawn by Eq. (17)[1] may not be universal. Since the insulation materials used on the cryogenic tanks usually are not linear, and the supporting arrangement may not be regular under thermal effect, then the spring stiffness can be either irregular and/or nonlinear. Thus the power law of $\frac{1}{2}$ may not always be valid. By the process of minimization described in Ref. 1, it can be expected that the particular β is a function of Z and K or $\beta_p = f(Z, K, \text{const})$. By the substitution of β_p in Eq. (15),[1] the critical stress is obtained as

$$(k_y)_{\text{crit}} = f(Z, K, \text{const})$$

where

$$Z = (L/r)^2(r/t)(1 - \mu^2)^{1/2}$$

$$K = [12(1 - \mu^2)/E\pi^4](L/r)^4(r/t)^3rk$$

For a given shell geometry, (L/r), (r/t), and r values are fixed. The material properties E and μ also may be assumed invariant by the selection of an arbitrary material for the cylindrical shell. Thus Z is held constant in this case, and the determination of k_y hinges on the form of k (the elastic spring constant generally approximated by the insulation properties and the supporting arrangement, as calculated by Fig. 2, Ref. 1). The importance of a wider class of k forms to confirm the power law thus derived may be of definite interest. However, the difficulties in obtaining more data are anticipated, since the job of winding the pre-tensioned filament on the insulation of extra light weight is quite a formidable task by itself.

3) The influence of a minimized β value has been recognized in both Refs. 1 and 2. They state that, at low values of Z, buckling is characterized by a large number of circumferential waves. As Z increases, the number of circumferential waves decreases. This of course agrees with the definition of $\beta \equiv (n/\pi)(L/r)$. For a fixed value of β, n is inversely proportional to (L/r). However, the critical value of n is not shown in the theory given in Ref. 1. It may prove to be of interest to minimize the roots of Eq. (14)[1] by performing $\partial^2 k_y/\partial n \partial(L/r) = 0$ in the hope of defining the critical n value for a (L/r) or vice versa, if this information is ever needed.

References

[1] Mikulas, M. M., Jr. and Stein, M., "Buckling of a cylindrical shell loaded by a pre-tensioned filament winding," AIAA J. **3**, 560–561 (1965).

[2] Batdorf, S. B., "A simplified method of elastic stability analysis for thin cylindrical shells," NACA Rept. 874 (1947).

Errata: "Plastic Buckling of Axially Compressed Cylindrical Shells"

Steven C. Batterman*
University of Pennsylvania, Philadelphia, Pa.

[AIAA J. **3**, 316–325(1965)]

In the above article 1) the right-hand side of Eq. (21) should be divided by $3^{1/2}$ and 2) the isolated $2 - \nu$ in front of the square brackets in the last of Eqs. (27) should be deleted.

Received June 4, 1965.

* Assistant Professor, Division of Engineering Mechanics. Member AIAA.