

Technical Comment

Comment on "Buckling of Orthotropic Plates with One Free Edge"

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HOLSTON¹ was correct in pointing out a misprint in the nomenclature of Ref. 2 for the term γ . The governing transcendental equation for the determination of the critical buckling load for $m = 1$ is shown in Ref. 2 to be:

$$\bar{\beta}[\bar{\beta}^2 + (\pi b/a)^2 \gamma][\bar{\alpha}^2 - (\pi b/a)^2 \nu_{xy}] \tanh \bar{\alpha} = \bar{\alpha}[\bar{\alpha}^2 - (\pi b/a)^2 \gamma][\bar{\beta}^2 + (\pi b/a)^2 \nu_{xy}] \tan \bar{\beta} \quad (1)$$

where b is the plate width, a is its length, and the other terms are defined in Ref. 2 with the exception, as pointed out in Ref. 1, that γ be defined as:

$$\gamma = [4G_{xy}(1 - \nu_{xy}\nu_{yz})/E_y] + \nu_{zy} \quad (2)$$

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However, the misprint for the definition of γ in Ref. 2 had no influence on the buckling values presented in Refs. 2 and 3, as an inspection of the computer programs by the author established that γ as defined by Eq. (2) was used in determining these values. The computer program used to generate the data presented in Ref. 3 is listed in its appendix. The relationships developed in Ref. 2 were also presented in Ref. 4 with the misprint corrected, i.e., γ was defined by Eq. (2).

Thus, the nomenclature misprint for γ did not invalidate the buckling coefficient values presented in Refs. 2 and 3 and has been corrected in an earlier publication, Ref. 4.

References

- ¹ Holston, A., "Buckling of Orthotropic Plates with One Edge Free," *AIAA Journal*, Vol. 8, No. 7, July 1970, pp. 1352-1354.
- ² Lackman, L. M. and Ault, R. M., "Minimum-Weight Analysis of Filamentary Composite Wide Columns," *Journal of Aircraft*, Vol. 5, No. 2, March-April 1968, pp. 184-190.
- ³ "Advanced Composite Wing Structures, Preliminary Analysis and Optimization Methods," AC-SM-7843, Aug. 1968, Grumman Aircraft Engineering Corp., Bethpage, N.Y.
- ⁴ *Structural Design Guide for Advanced Composite Applications*, 1st ed., Advanced Composites Division, AFML, Wright-Patterson Air Force Base, Ohio, Aug. 1969, p. 4.3.9.