not a very strong function of airfoil thickness. It is also evident that ΔC_m rises very rapidly as $\bar{C}_l$ increases.

Conclusion

The effects of airfoil thickness and aerodynamic coupling in the form of induced camber and additional pitching moment were discussed and demonstrated for closely coupled airfoils. Through two different numerical solutions, it was established that 1) coupling can profoundly effect the aerodynamic characteristics of airfoils; 2) thin airfoil formulations are not capable of fully predicting these coupling effects; 3) there exists an additional pitching moment associated with closely coupled airfoils; and 4) the additional pitching moment enhances the stability of a dual wing aircraft with positive stagger. It is the opinion of the authors, that to design aerodynamically efficient systems, one must fully account for these coupling phenomena.

References

[1]Kuethe, A.M. and Chow, C.Y., *Foundations of Aerodynamics: Bases of Aerodynamic Design,* 3rd ed., John Wiley & Sons, New York, 1976.

[2]Hedman, S.G., "Vortex Lattice Method for Calculation of Quasi-Steady State Loadings on Thin Elastic Wings in Subsonic Flow," FFA Report 105, Flygtekniska Foroksanstalten, Stockholm, 1966.

[3]Tulinius, J., "Unified Subsonic, Transonic, and Supersonic NAR Vortex Lattice," North American Rockwell, Los Angeles Division, Rept. TFD-72-523, April 1972.

[4]Lange, R.H., Cahill, J.F., Bradley, E.S., Eudaily, R.R., Jenness, C.M., and MacWilkinson, D.G., "Feasibility Study of the Transonic Biplane Concept for Transport Aircraft Application," NASA CR-132462, 1974.

[5]Grzedzinski, J., "Aerodynamic Interference in a System of Two Harmonically Oscillating Airfoils in an Incompressible Flow," *Archives of Mechanics,* Vol. 26, No. 3, 1974, pp. 383-389.

[6]Rokhsaz, K., "Aerodynamic Study of Dual Lifting Surfaces," M.S. Thesis, University of Missouri-Rolla, Rolla, Mo., 1980.

[7]Stevens, W.A., Gordia, S.H., and Braden, J.A., "Mathematical Model for Two-Dimensional Multi-Component Airfoils in Viscous Flow," NASA CR-1843, July 1971.

Errata

Design Allowables for T300/5208 Graphite/Epoxy Composite Materials

J. C. Ekvall and C. F. Griffin
Lockheed-California Company, Burbank, California
[J. Aircraft, **19**, 661-667 (1982)]

AN error has been found in Table 6 of this paper. The correct table is printed below in its entirety.

Table 6 Graphite/epoxy tape and fabric properties for room temperature, dry unnotched predictions

		Material			
		Tape		Fabric	
Load direction	Property	0 deg	90 deg	0 deg	90 deg
Tension	Strength—10^3 psi	200.9	8.35	83.2	70.0
	Modulus—10^6 psi	20.5	1.67	9.8	9.4
	Strain—10^{-6} in./in.	9800	5000	8490	7440
Compression	Strength—10^3 psi	186.2	28.3	82.4	75.0
	Modulus—10^6 psi	18.5	1.64	8.74	8.4
	Strain—10^{-6} in./in.	11200	18400	10100	9350
In-plane shear	Strength—10^3 psi	13.4		13.9	
	Modulus—10^6 psi	0.87		0.73	
	Strain—10^{-6} in./in.	27500		32820	
Poison's ratio		0.30		0.053	

Received Feb. 14, 1982.