

## JOHN W. MILES

### Scientific Papers 1943–1990

#### 1943

1. "Applications and limitations of mechanical-electrical analogies, new and old," *J. Acoust. Soc. Amer.* **14**, 183–192 (Jan., 1943)

#### 1944

2. "The reflection of sound due to a change in cross section of a circular tube," *J. Acoust. Soc. Amer.* **16**, 14–19 (July, 1944)
3. "Junction analysis in vacuum-tube circuits," *Proc. I.R.E.* **32**, 617–620 (Oct., 1944)

#### 1945

4. (With S.S. MacKeown) "The plane wave resolution of guided waves," *Proc. I.R.E.* **33**, 805–808 (Nov., 1945)

#### 1946

5. "The analysis of plane discontinuities in cylindrical tubes, Part I," *J. Acoust. Soc. Amer.* **17**, 259–271 (Jan., 1946)
6. "The analysis of plane discontinuities in cylindrical tubes, Part II," *J. Acoust. Soc. Amer.* **17**, 272–284 (Jan., 1946)
7. "An analogy among torsional rigidity, rotating fluid inertia and self-inductance for an infinite cylinder," *J. Aero. Sci.* **13**, 377–380 (July, 1946)
8. "The equivalent circuit for a plane discontinuity in a cylindrical wave guide," *Proc. I.R.E.* **34**, 728–742 (Oct., 1946)

#### 1947

9. "Contributions to wave-guide theory," *Proc. I.R.E.* **35**, 378 (April, 1947)
10. "The aerodynamic forces on an oscillating airfoil at supersonic speeds," *J. Aero. Sci.* **14**, 351–358 (June, 1947)
11. "The diffraction of sound due to right-angled joints in rectangular tubes," *J. Acoust. Soc. Amer.* **19**, 572–579 (July, 1947)
12. "The equivalent circuit for a bifurcated cylindrical tube," *J. Acoust. Soc. Amer.* **19**, 579–584 (July, 1947)
13. "Equivalent circuits for plane discontinuities," *Proc. I.R.E.* **35**, 792 (August, 1947)
14. "Coordinates and the reciprocity theorem in electromechanical systems," *J. Acoust. Soc. Amer.* **19**, 910–913 (Sept., 1947)
15. "The equivalent circuit of a corner bend in a rectangular wave guide," *Proc. I.R.E.* **35**, 1313–1317 (Nov., 1947)
16. "Plane discontinuities in coaxial lines," *Proc. I.R.E.* **35**, 1498–1502 (Dec., 1947)

#### 1948

17. "Acoustical methods in supersonic aerodynamics," *J. Acoust. Soc. Amer.* **20**, 314–323 (May, 1948)

18. "Harmonic and transient motion of a swept wing in supersonic flow," *J. Aero. Sci.* **15**, 343–347 (June, 1948)
19. "The rolling moment due to sideslip for a swept wing," *J. Aero. Sci.* **15**, 418–424 (July, 1948)
20. "The diffraction of a sound wave by an infinite set of plates," *J. Acoust. Soc. Amer.* **20**, 370–374 (July, 1948)
21. "The coupling of a cylindrical tube to a half-infinite space," *J. Acoust. Soc. Amer.* **20**, 652–664 (Sept., 1948)
22. "The aerodynamic forces on an oscillating flap at supersonic speeds," *J. Aero. Sci.* **15**, 565–568 (Sept., 1948)
23. "Transient loading of airfoils at supersonic speeds," *J. Aero. Sci.* **15**, 592–598 (Oct., 1948)
24. "On vector transforms," *Phys. Rev.* **74**, 1531 (Nov., 1948)

### 1949

25. "Induction effects in aeroelasticity," *J. Aero. Sci.* **16**, 63–64 (Jan., 1949); also **16**, 126 (Feb., 1949)
26. "On chordwise divergence," *J. Aero. Sci.* **16**, 126–127 (Feb., 1949)
27. "On electromagnetic diffraction through a plane screen," *Phys. Rev.* **75**, 695–696 (Feb., 1949)
28. "On diffraction through a circular aperture," *J. Acoust. Soc. Amer.* **21**, 140–141 (March, 1949)
29. "Transform and variational methods in supersonic aerodynamics," *J. Aero. Sci.* **16**, 252 (April, 1949)
30. "The diffraction of a plane wave through a grating," *Quart. Appl. Math.* **7**, 45–64 (April, 1949)
31. "On harmonic motion at supersonic speeds," *J. Aero. Sci.* **16**, 378 (June, 1949)
32. "On the oscillating rectangular airfoil at supersonic speeds," *J. Aero. Sci.* **16**, 381 (June, 1949)
33. "Quasi-stationary thin airfoil theory," *J. Aero. Sci.* **16**, 440 (July, 1949)
34. "A note on a solution to Possio's integral equation for an oscillating airfoil in supersonic flow," *Quart. Appl. Math.* **7**, 213–216 (July, 1949)
35. "A formulation of the aeroelastic problem for a swept wing," *J. Aero. Sci.* **16**, 477–490 (August, 1949)
36. "Quasi-stationary airfoil theory in compressible flow," *J. Aero. Sci.* **16**, 509 (August, 1949)
37. "On the oscillating aileron at supersonic speeds," *J. Aero. Sci.* **16**, 511 (August, 1949)
38. "On the diffraction of an electromagnetic wave through a plane screen," *J. Appl. Phys.* **20**, 760–771 (August, 1949) [See errata, #51]
39. "On nonsteady motion of delta wings," *J. Aero. Sci.* **16**, 568 (Sept., 1949)
40. "On damping in pitch for delta wings," *J. Aero. Sci.* **16**, 674 (Sept., 1949)

### 1950

41. "Unsteady flow theory in dynamic stability," *J. Aero. Sci.* **17**, 62 (Jan., 1950)

42. "On the reduction of unsteady supersonic flow problems to steady flow problems," *J. Aero. Sci.* **17**, 64 (Jan., 1950)
43. "On the change of cross section and bifurcation of a cylindrical tube," *J. Acoust. Soc. Amer.* **22**, 59–60 (Jan., 1950)
44. "A note on supersonic flow in the Trefftz plane," *Quart. Appl. Math.* **7**, 470–471 (Jan., 1950)
45. "On certain integral equations in diffraction theory," *J. Math. and Phys.* **28**, 223–226 (Jan., 1950)
46. "On simple plan forms in supersonic flow," *J. Aero. Sci.* **17**, 127 (Feb., 1950)
47. "On the compressibility correction for subsonic unsteady flow," *J. Aero. Sci.* **17**, 181 (March, 1950)
48. "On downwash corrections in unsteady flow," *J. Aero. Sci.* **17**, 253 (April, 1950)
49. "A note on Riemann's method applied to the diffusion equation," *Quart. Appl. Math.* **8**, 95–101 (April, 1950)
50. "A note on subsonic aerofoil theory," *Aero. Quart.* **2**, 23–33 (May, 1950)
51. Errata: "On the diffraction of an electromagnetic wave through a plane screen," *J. Appl. Phys.* **21**, 468 (May, 1950)
52. "Transient loading of supersonic rectangular airfoils," *J. Aero. Sci.* **17**, 647–652 (Oct., 1950)
53. "On virtual mass and wave drag at subsonic speeds," *J. Aero. Sci.* **17**, 667 (Oct., 1950)
54. "Some relations between harmonic and transient loading of airfoils," *J. Aero. Sci.* **17**, 671 (Oct., 1950)
55. "On non-steady motion of slender bodies," *Aero. Quart.* **2**, 183–194 (Nov., 1950)
56. "On the equations of longitudinal stability," *J. Aero. Sci.* **17**, 815 (Dec., 1950)

### 1951

57. "Quasi-stationary airfoil theory in subsonic compressible flow," *Quart. Appl. Math.* **8**, 351–358 (Jan., 1951)
58. "On the equations of longitudinal stability — II," *J. Aero. Sci.* **18**, 212 (March, 1951)
59. "The oscillating rectangular airfoil at supersonic speeds," *Quart. Appl. Math.* **9**, 47–65 (April, 1951)
60. "Transient loading of wide delta airfoils at supersonic speeds," *J. Aero. Sci.* **18**, 543–554 (August, 1951)
61. "On slender wing theory," *J. Aero. Sci.* **18**, 770 (Nov., 1951)
62. "On virtual mass and transient motion in subsonic compressible flow," *Quart. J. Mech. Appl. Math.* **4**, 388–400 (Dec., 1951)

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64. "On slender wing-body theory," *J. Aero. Sci.* **19**, 140 (Feb., 1952)
65. "A note on supersonic wing integral equations in unsteady flow," *Aero. Quart.* **3**, 294–296 (Feb., 1952)

66. "On nonsteady supersonic flow about pointed bodies of revolution," *J. Aero. Sci.* **19**, 208 (March, 1952)
  67. "A note on conical flows in airfoil theory," *J. Aero. Sci.* **19**, 216 (March, 1952)
  68. "Reduction of three-dimensional electromagnetic problems," *J. Appl. Phys.* **23**, 372 (March, 1952)
  69. "Heat conduction along an exponential bar," *J. Appl. Phys.* **23**, 372 (March, 1952)
  70. "Slender body theory for supersonic unsteady flow," *J. Aero. Sci.* **19**, 280 (April, 1952)
  71. "On interference factors for finned bodies," *J. Aero. Sci.* **19**, 287 (April, 1952)
  72. "On the diffraction of an acoustic pulse by a wedge," *Proc. Roy. Soc. Lond. A* **212**, 543–547 (1952)
  73. "On the diffraction of an electromagnetic pulse by a wedge," *Proc. Roy. Soc. Lond. A* **212**, 547–551 (1952)
  74. "On acoustic diffraction cross sections for oblique incidence," *J. Acoust. Soc. Amer.* **24**, 324 (May, 1952)
  75. "On the general solution for unsteady motion of a rectangular wing in supersonic flow," *J. Aero. Sci.* **19**, 421 (June, 1952)
  76. "Aerodynamics of unsteady flow," *Handbook of Engineering Fundamentals* (O.W. Eshbach, editor), John Wiley and Sons, Inc., New York, pp. 7–112 — 7–115 (1952)
  77. "A note on the damping in roll of a cruciform winged body," *Quart. Appl. Math.* **10**, 276–277 (October, 1952)
  78. "On the Kirchhoff solution for an oscillating wing in subsonic compressible flow," *J. Aero. Sci.* **19**, 785 (Nov., 1952)
  79. "On solutions to the wave equation in hyperbolic space," *J. Appl. Phys.* **23**, 1400 (Dec., 1952)
  80. "On acoustic diffraction through an aperture in a plane screen," *Acustica* **2**, 287–291 (1952)
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81. "On linearized theory," *J. Aero. Sci.* **20**, 64 (Jan., 1953)
  82. "Transient loading of a baffled piston," *J. Acoust. Soc. Amer.* **25**, 200–203 (March, 1953)
  83. "Transient loading of a baffled strip," *J. Acoust. Soc. Amer.* **25**, 204–205 (March, 1953)
  84. "A general solution for the rectangular airfoil in supersonic flow," *Quart. Appl. Math.* **11**, 1–8 (April, 1953)
  85. "Impulsive motion of a flat plate," *Quart. J. Mech. Appl. Math.* **6**, 129–140 (June, 1953)
  86. "On the low aspect ratio oscillating rectangular wing in supersonic flow," *Aero. Quart.* **4**, 231–244 (August, 1953)
  87. "On the transonic drag of a cone cylinder," *J. Aero. Sci.* **20**, 651–652 (Sept., 1953)
  88. "Virtual momentum and slender body theory," *Quart. J. Mech. Appl. Math.* **6**, 286–289 (Sept., 1953)
  89. "A note on subsonic edges in unsteady supersonic flow," *Quart. Appl. Math.* **11**, 363–367 (Oct., 1953)

90. "On radiation and scattering from small cylinders," *J. Acoust. Soc. Amer.* **25**, 1087–1089 (Nov., 1953)

#### 1954

91. "On nonspecular reflection at a rough surface," *J. Acoust. Soc. Amer.* **26**, 191–199 (March, 1954)
92. "On the transformation of the linearized equation of unsteady supersonic flow," *Quart. Appl. Math.* **12**, 1–12 (April, 1954)
93. "On solving subsonic unsteady flow lifting surface problems by separating variables," *J. Aero. Sci.* **21**, 427 (June, 1954)
94. "Linearization of the equations of non-steady flow in a compressible fluid," *J. Math. and Phys.* **33**, 135–143 (July, 1954)
95. "On the transonic drag of accelerated bodies," *J. Aero. Sci.* **21**, 644–645 (Sept., 1954)
96. "On the nonlinear thickness effect for a supersonic oscillating airfoil," *J. Aero. Sci.* **21**, 714 (Oct., 1954)
97. "Dispersive reflection at the interface between ideal and viscous media," *J. Acoust. Soc. Amer.* **26**, 1015–1018 (Nov., 1954)
98. "On structural fatigue under random loading," *J. Aero. Sci.* **21**, 753–762 (Nov., 1954)

#### 1955

99. *Unsteady supersonic flow*, Air Research and Development Command, Baltimore, 569+xii (March, 1955)

#### 1956

100. "Vibrations of beams on many supports," *Proc. A.S.C.E., J. Eng'g. Mech. Div. 82 No. EM 1*, 1–9 (Jan., 1956)
101. "On the sonic drag of a slender body," *J. Aero. Sci.* **23**, 146–154 (Feb., 1956)
102. (With W.D. Hayes) "The free oscillations of a buckled panel," *Quart. Appl. Math.* **14**, 19–26 (April, 1956)
103. "A note on numerical differentiation," *Quart. Appl. Math.* **14**, 97–101 (April, 1956)
104. (With Lee Winograd) "Numerical results for the longitudinal stability derivatives and stability loci of a low aspect ratio rectangular wing in supersonic flow," *Aero. Quart.* **7**, 106–108 (May, 1956)
105. "A first-order formulation of the unsteady supersonic flow problem for finite wings," *J. Aero. Sci.* **23**, 578–582 (June, 1956)
106. "The compressible flow past an oscillating airfoil in a wind tunnel," *J. Aero. Sci.* **23**, 671–678 (July, 1956)
107. "On linearized transonic flow theory for slender bodies," *J. Aero. Sci.* **23**, 704–705 (July, 1956)
108. "On the aerodynamic instability of thin panels," *J. Aero. Sci.* **23**, 771–780 (August, 1956)
109. "The aerodynamic force on an airfoil in a moving gust," *J. Aero. Sci.* **23**, 1044–1050 (Nov., 1956)

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111. "On the reflection of sound at an interface of relative motion," *J. Acoust. Soc. Amer.* **29**, 226–228 (Feb., 1957)
112. "On the velocity profile for turbulent flow near a smooth wall," *J. Aero. Sci.* **24**, 704 (Sept., 1957)
113. "On the generation of surface waves by shear flows," *J. Fluid Mech.* **3**, 185–204 (Nov., 1957)
114. "On a reciprocity condition for supersonic flutter," *J. Aero. Sci.* **24**, 920 (Dec., 1957)

**1958**

115. "Supersonic flutter of a cylindrical shell — II," *J. Aero. Sci.* **25**, 312–316 (May, 1958)
116. "Ring damping of free surface oscillations in a circular tank," *J. Appl. Mech.* **25**, 274–276 (June, 1958)
117. "On the sloshing of liquid in a flexible tank," *J. Appl. Mech.* **25**, 277–283 (June, 1958)
118. "On the disturbed motion of a plane vortex sheet," *J. Fluid Mech.* **4**, 538–552 (Sept., 1958)

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120. "On panel flutter in the presence of a boundary layer," *J. Aero. Sci.* **26**, 81–94 (Feb., 1959)
121. (With W.P. Rodden) "On the supersonic flutter of two-dimensional infinite panels," *J. Aero. Sci.* **26**, 190–191 (March, 1959)
122. "Free surface oscillations in a rotating liquid," *Phys. Fluids* **2**, 297–305 (May–June, 1959)
123. "On the generation of surface waves by shear flows — Part 2," *J. Fluid Mech.* **6**, 568–582 (Nov., 1959)
124. "On the generation of surface waves by shear flows — Part 3. Kelvin-Helmholtz instability," *J. Fluid Mech.* **6**, 583–598 (Nov., 1959)
125. (With S.D. Conte) "On the numerical integration of the Orr-Sommerfeld equation," *J. Soc. Indust. Appl. Math.* **7**, 361–366 (Dec., 1959)

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127. "On the generation of surface waves by turbulent shear flows," *J. Fluid Mech.* **7**, 469–478 (March, 1960)
128. "Homogeneous solutions in elastic wave propagation," *Quart. Appl. Math.* **18**, 37–59 (April, 1960)
129. "On supersonic flutter of long panels," *J. Aero. Sci.* **27**, 426 (June, 1960)
130. (With G.F. Carrier) "On the annular damper for a freely precessing gyroscope," *J. Appl. Mech.* **27**, 237–240 (June, 1960)

131. "Scattering of elastic waves by small inhomogeneities," *Geophysics* **25**, 642–648 (June, 1960)
132. "The hydrodynamic stability of a thin film of liquid in uniform shearing motion," *J. Fluid Mech.* **8**, 593–610 (August, 1960)
133. "Low-frequency motion of bodies in an elastic wave field," *J. Acoust. Soc. Amer.* **32**, 1396–1401 (Nov., 1960)
134. "On the response of an elastic half-space to a moving blast wave," *J. Appl. Mech.* **27**, 710–716 (Dec., 1960)
135. "Motion of a rigid cylinder due to a plane elastic wave," *J. Acoust. Soc. Amer.* **32**, 1656–1659 (Dec., 1960)

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137. "The propagation of an impulse into a viscous-locking medium," *J. Appl. Mech.* **28**, 21–24 (March, 1961)
138. "Comments on 'Propagation of intense shock waves into the earth'," *J. Acoust. Soc. Amer.* **33**, 360 (March, 1961)
139. "On the stability of heterogeneous shear flows," *J. Fluid Mech.* **10**, 496–508 (June, 1961)
140. (With Walter Munk) "Harbor paradox," *J. Waterways and Harbors Division, Proc. ASCE* **87**, 111–130 (August, 1961); SIO Contrib. #1363 V.32 p.357 (1962)
141. (With W.T. Thomson) "Statistical concepts in vibration," *Shock and Vibration Handbook*, (McGraw-Hill Book Co., New York, 1961) Vol. 1, pp. 11–1 — 11–19
142. (With B.A. Troesch) "Surface oscillations of a rotating liquid," *J. Appl. Mech.* **28**, 491–496 (Dec., 1961)

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143. "Remarks on 'Supersonic panel flutter of a cylindrical shell of finite length'," *J. Aero. Sci.* **29**, 115 (Jan., 1962)
144. "Conical flow and Rayleigh scattering techniques in elastic wave propagation," Conference on Developments in Wave Propagation (May 15–17, 1961), California Institute of Technology, Pasadena, 1962, pp. 12–14; *J. Geophys. Res.* **68**, 1188–1189 (Feb., 1963)
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146. "Note on the damping of free-surface oscillations due to drainage," *J. Fluid Mech.* **12**, 438–440 (March, 1962)
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148. "Transient gravity wave response to an oscillating pressure," *J. Fluid Mech.* **13**, 145–150 (May, 1962)
149. "Generation of surface waves by shear flows," *Proc. of Sympos. Appl. Math.* (Amer. Math. Soc.) **13**, 79–89 (June, 1962)
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151. "On the generation of surface waves by shear flows, Part 4," *J. Fluid Mech.* **13**, 433–448 (July, 1962)

152. "The generation of surface waves by wind," *Appl. Mech. Rev.* **15**, 685–687 (Sept., 1962)

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154. "On the stability of heterogeneous shear flows, Part 2," *J. Fluid Mech.* **16**, 209–227 (June, 1963)

155. "Principles of Classical Mechanics and Field Theory" by C. Truesdell and R. Toupin (Review), *J. Fluid Mech.* **16**, 313–320 (June, 1963)

156. "On the annular damper for a freely precessing gyroscope II," *J. Appl. Mech.* **30**, 189–192 (June, 1963)

157. (With W.H. Munk) "Wave response of harbors to tsunamis" Union Geodesique et Geophysique Internationale, monographie No. 24, p. 52 (July, 1963)

158. "The Cauchy-Poisson problem for a rotating liquid," *J. Fluid Mech.* **17**, 75–88 (Sept., 1963)

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163. "A note on Charney's model of zonal-wind instability," *J. Atmos. Sci.* **21**, 451–452 (July, 1964)

164. "Baroclinic instability of the zonal wind: Part II," *J. Atmos. Sci.* **21**, 500–506 (Sept., 1964)

165. (With L.N. Howard) "Note on a heterogeneous shear flow," *J. Fluid Mech.* **20**, 331–336 (Oct., 1964)

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### 1965

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176. "Newtonian flow over a stationary body in unsteady flow," *AIAA J.* **4**, 38–40 (Jan., 1966)
177. *Bores, Breakers, Waves and Wakes* by R.A.R. Tricker (Review), *J. Fluid Mech.* **24**, 620–622 (March, 1966)
178. (With H. Mirels and H.E. Wang) "Time required for establishing detached bow shock," *AIAA J.* **4**, 1127–1128 (June, 1966)
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191. "Effects of surface films on air-sea interaction," (abstract) *Phys. Fluids* **10**, S314 (Sept., 1967)
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193. "Decay of spherical blast waves," *Phys. Fluids* **10**, 2707–2708 (Dec., 1967); SIO Contrib. #2280 V.37 p.1921 (1967)

## 1968

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195. "Lee waves in a stratified flow. Part 1. Thin barrier," *J. Fluid Mech.* **32**, 549–567 (May, 1968)
196. (With Appendix by H.E. Huppert) "Lee waves in a stratified flow. Part 2. Semi-circular obstacle," *J. Fluid Mech.* **33**, 803–814 (Sept., 1968)
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