

SUBJECT INDEX

AIRCRAFT TECHNOLOGY, CONVENTIONAL

Aircraft Aerodynamics (including Component Aerodynamics)

- Model support effects on aerodynamic and wake characteristics of large angle cones. Melvin M. Carmel and Clarence A. Brown Jr. (JA, SYN) 99
- Three-dimensional flow separations on aircraft and missiles. David J. Peake, William J. Rainbird, and Edward G. Atraghji (AIAA J, SA) 567
- Distortion and turbulence interaction—A method for evaluating engine inlet compatibility. E. A. Van Deusen and V. R. Mardoc (JA), 16
- Application of airfoil theory for nonuniform streams to wing propeller interaction. G. Kleinstein and C. H. Liu (JA) 137
- Leading-edge slat design by a semi-inverse technique. John E. O'Pray and Peter B. S. Lissaman (JA) 143
- Reduction of wave drag by antisymmetric arrangement of wings and bodies. R. T. Jones (AIAA J) 171
- Flow around wing sections with high-lift devices. D. N. Foster (JA) 205
- Ground effects in STOL operation. L. B. Gratzner and A. S. Mahal (JA) 236
- Airfoil in a contracting or diverging stream. B. Lakshminarayana and M. T. White (JA) 354
- Drift of buoyant wing-tip vortices. Robert C. Costen (JA) 406
- Unsteady subsonic collocation method for wings with and without control surfaces. Atlee M. Cunningham Jr. (JA) 413
- A general class of exact airfoil solutions. Richard M. James (JA) 574
- Analytical method for combining the interaction of inlet distortion and turbulence. Ronald L. Panton (JA) 636
- Subsonic steady and oscillatory aerodynamics for multiple interfering wings and bodies. J. P. Giesing, T. P. Kálmán, and W. P. Rodden (JA) 693
- Performance estimates for a supersonic axisymmetric inlet system. Norman E. Sorensen and Donald B. Smeltzer (JA) 703
- Slowly oscillating lifting surfaces at subsonic and supersonic speeds. Gunter W. Brune and Arthur R. Dusto (JA) 777
- A theoretical method for the analysis and design of multielement airfoils. J. G. Callaghan and T. D. Beatty (JA) 844
- Computation of transonic flows past lifting airfoils and slender bodies. J. A. Krupp and E. M. Murrman (AIAA J) 880
- Interference of wing and multipropellers. L. Ting, C. H. Liu, and G. Kleinstein (AIAA J) 906
- Calculation of compressible turbulent boundary layers with roughness and heat transfer. F. A. Dvorak (AIAA J) 1447
- Lee-side vortices on Delta wings at hypersonic speeds. Dhanvada M. Rao and A. H. Whitehead Jr. (AIAA J) 1458
- Multiple element airfoils optimized for maximum lift coefficient. Allen I. Ormsbee and Allen W. Chen (AIAA J) 1620
- Incipient stall detection through unsteady-pressure monitoring on aircraft wings. Hanno H. Heller, Donald B. Bliss, and Sheila E. Widnall (JA, EN) 186
- Influence of helical serrations on the aerodynamic properties of a spinning body. Maurice A. Sylvester (AIAA J, TN) 223
- Vortex-elliptic wing interaction. W. P. Jones (AIAA J, TN) 225
- Drag of a flat plate with transition in the absence of pressure gradient. Chang-yu Liu (JA, EN) 509
- V-wings and diamond ring-wings of minimum induced drag. John S. Letcher Jr. (JA, EN) 605
- Lift on airfoils with separated boundary layers. Nathan Ness (JA, EN) 607
- The effect of several wing tip modifications on a trailing vortex. James F. Marchman III and Joseph N. Uzel (JA, EN) 684
- Simplification of the wing-body interference problem. Ralph E. Graham and Jerry L. McDowell (JA, EN) 752
- Equations of motion for flexible cables. Thomas R. Rogge (JA, EN) 799
- Leading-edge force features of the aerodynamic finite element method. Chuan-Tau Lan and Jan Roskam (JA, EN) 864
- Vortex induced wing loads. L. T. Filotas (AIAA, J, TN) 971
- Lift of wing-body combination. H. T. Yang (AIAA J, TN) 1535
- A correction to "Lifting-line theory as a singular perturbation problem." Keith P. Kerney (AIAA J, TN) 1683
- Comment on "Transonic airfoil design." J. Smolderen (JA, TC) 191
- Reply by authors to J. Smolderen. M. S. Cahn and J. R. Garcia (JA, TC) 192
- Comment on "A direct matrix method for the divergence problem." William P. Rodden (JA, TC) 318
- Reply by author to William P. Rodden. V. T. Nagaraj (JA, TC) 318
- Comment on "Vortex velocity distributions at large downstream distances." J. F. Marchman III (JA, TC) 382
- Reply by author to J. F. Marchman. Andrew H. Logan (JA, TC) 383
- Comments on "Convergence proof of discrete-panel wing loading theories." R. M. James (JA, TC) 383
- Reply by author to R. M. James. J. DeYoung (JA, TC) 384

- Comments on "Attenuation of inlet flow distortion upstream of axial flow compressors." R. M. Greitzer (JA, TC) 511
- Comment on "Convergence proof of discrete-panel wing loading theories." William P. Rodden (JA, TC) 686
- Reply by author to W. P. Rodden. J. DeYoung (JA, TC) 688

Aircraft Cabin Environment and Life Support Systems

- Structural considerations of the human vertebral column under +G_z impact acceleration. Channing L. Ewing, Albert I. King, and Priyaranjan Prasad (JA) 84

Aircraft Configuration Design

- Leading-edge slat design by a semi-inverse technique. John E. O'Pray and Peter B. S. Lissaman (JA) 143
- Reduction of wave drag by antisymmetric arrangement of wings and bodies. R. T. Jones (AIAA J) 171
- Ground effects in STOL operation. L. B. Gratzner and A. S. Mahal (JA) 236
- Methodology for structural optimization of STOL aircraft vertical stabilizers. Bertram C. Wollner (JA) 360
- Air superiority with control configured fighters. R. B. Jenny, F. M. Krachmalnick, and S. A. LaFavor (JA) 370
- Total in-flight simulator (TIFS)—A new aircraft design tool. Philip A. Reynolds and James R. Pruner (JA) 392
- Nonlinear vortex interactions on wing-canard configurations. David Finkleman (JA) 399
- Prospects for low wing-loading STOL transports with ride smoothing. R. B. Holloway, G. O. Thompson, and W. J. Rohling (JA) 525
- Proprotor short-haul aircraft—STOL and VTOL. Kenneth W. Sambell (JA) 744
- Three-dimensional structure and equivalence rule of transonic flows. H. K. Cheng and Mohammed Hafez (AIAA J, TN) 1115

Aircraft Crew Training

Aircraft Deceleration Systems

- A general theory of parachute opening. Edward W. Ross Jr. (JA, SYN) 257
- Theoretical investigation of the aerodynamic characteristics of all-flexible parawings. S. B. Spangler and J. N. Nielsen (A/A, April*) 60
- *See Note on page 3
- A theory of vibrations in parachutes. Geoffrey W. H. Stevens (JA) 74
- Structural analysis of a parawing during deployment. Paul M. Kenner (JA) 168
- Supersonic and transonic deployment of ribbon parachutes at low altitudes. Randall C. Maydew and Donald W. Johnson (JA) 497
- An analytical investigation of the impingement of jets on curved deflectors. N. M. Schnurr, J. W. Williamson, and J. W. Tatom (AIAA J) 1430
- Errata: "Parachute critical opening velocity." Kenneth E. French (JA, ERR) 320

Aircraft Economics (including System Economics)

Aircraft Fabrication

Aircraft Flight Operations

- Aircraft wake turbulence avoidance. William A. McGowan (JA, SYN) 197
- Synchronized time and frequency for aeronautical collision avoidance, communication, navigation, and surveillance. James E. Blouin (JA, SYN) 323
- Statistical analysis of several terminal area traffic collision hazard factors. J. Ray Ruetenik (JA) 79
- Principles of performance monitoring with application to automatic landing. J. M. Smith, P. B. Schoonmaker E. E. Pyron, and R. L. Benbow (JA) 339
- Application of the head-up display (HUD) to a commercial jet transport. J. Michael Naish (JA) 530
- Closed form solution for the sonic boom in a polytropic atmosphere. R. Stuff (JA) 556
- A simplified model for aircraft steering dynamics. Carl Grubin (JA, EN) 93

Aircraft Fuels and Fuel Systems

Aircraft Gust Loading and Wind Shear

- Small-scale wind shear definition for aerospace vehicle design. George H. Fichtl (JSR) 79

- Flight investigation of the influence of turbulence on longitudinal flying qualities. James A. Franklin (JA) 273
- Prospects for low wing-loading STOL transports with ride smoothing. R. B. Holloway, G. O. Thompson, and W. J. Rohling (JA) 525
- Effect of spanwise variation of gust velocity on airplane response to turbulence. Gabriel Coupry (JA) 569
- Entry probe descent probe descent to the base of the Jovian clouds. Howard B. Winkler, Donald P. Fields, and Russell G. Gamache (JSR) 660
- Wind shear near the ground and aircraft operations. George H. Fichtl (JA) 765
- Airplane yaw perturbations due to vertical and side gusts. Robert R. Rankine Jr. and Cornelius T. Leondes (JA, EN) 316
- Some results of suboptimal gust alleviation. Ronald A. Hess (JA, EN) 380
- Nonstationary response exceedance statistics of a simple mechanical system. Joseph M. Verdon (AIAA J, TN) 834
- Application of Rice's exceedance statistics to atmospheric turbulence. Wen-Yuan Chen (AIAA J, TN) 1103
- Erratum: "Flight investigation of the influence of turbulence on lateral-directional flying qualities." James A. Franklin (JA, ERR) 256

Aircraft Handling, Stability, and Control

- Sight line autopilot: A new concept in air weapons. Bradford W. Parkinson, M. W. Wynne, and L. R. Kruczynski (JA, SYN) 321
- Minimum order state reconstruction filters for constant plants. Lee Gregor Hofmann (AIAA J, SYN) 373
- Synthesis of helicopter stabilization systems using modal control theory. T. R. Crossley and B. Porter (JA) 3
- An analytical investigation of short-period flying qualities. Richard F. Giles (JA) 103
- Lateral-directional dynamics and roll control power for the landing approach. G. Warren Hall and Edward M. Boothe (JA) 129
- Active flutter suppression—An emerging technology. Glenn O. Thompson and Gerald J. Kass (JA) 230
- Lateral dynamics of flight on a great circle. Alastair M. Drummond (AIAA J) 247
- Towed vehicle system in a coordinated turn. Thomas C. Cannon and Joseph Genin (AIAA J) 252
- Flight investigation of the influence of turbulence on longitudinal flying qualities. James A. Franklin (JA) 273
- Modeling the effects of pilot performance on weapon delivery accuracy. Cornelius T. Leondes and Robert R. Rankine Jr. (JA) 286
- Direct lift control for improved automatic landing and performance of transport aircraft. Lowell O. Lykken and Naren M. Shah (JA) 325
- Theory and flight verification of the TIFS model-following system. Paul R. Motyka, Edmund G. Rynaski, and Philip A. Reynolds (JA) 347
- Design of desirable airplane handling qualities via optimal control. Gerhard K. L. Kriechbaum and Russell W. Stineman (JA) 365
- Total in-flight simulator (TIFS)—A new aircraft design tool. Philip A. Reynolds and James R. Pruner (JA) 392
- A feasibility study of active wing/store flutter control. William E. Triplett (JA) 438
- Analytic design of digital flight controllers to realize aircraft flying quality specifications. Raymond C. Montgomery (JA) 456
- Prospects for low wing-loading STOL transports with ride smoothing. R. B. Holloway, G. O. Thompson, and W. J. Rohling (JA) 525
- Investigation of nonlinear motion experience on a slender-wing research aircraft. A. Jean Ross (JA) 625
- A stability analysis for tethered aerodynamically shaped balloons. James D. DeLaurier (JA) 646
- Supersonic dynamic stability experiments on the space shuttle. K. J. Orlik-Rückemann, J. G. LaBerge, and E. S. Hanff (JSR) 655
- Adaptive model following systems for flight control and simulation. I. D. Landau and B. Courtiol (JA) 668
- An analysis of navy approach power compensator problems. Samuel J. Craig, Robert F. Ringland, and I. L. Ashkenas (JA) 737
- Handling characteristics in roll of two light airplanes for steep approach landings. Howard Chevalier and James A. Burke (JA) 759
- Application of geometric decoupling theory to synthesis of aircraft lateral control systems. Eugene M. Cliff and Frederick H. Lutze (JA) 770
- Slowly oscillating lifting surfaces of subsonic and supersonic speeds. Gunter W. Brune and Arthur R. Dusto (JA) 777
- A simplified model for aircraft steering dynamics. Carl Grubin (JA, EN) 93
- The effects of pitching-moments on phugoid and height mode in supersonic flight. Gottfried Sachs (JA, EN) 252
- Airplane yaw perturbations due to vertical and side gusts. Robert R. Rankine Jr. and Cornelius T. Leondes (JA, EN) 316
- Some results of suboptimal gust alleviation. Ronald A. Hess (JA, EN) 380
- Effect of air injection on the torque produced by a trailing vortex. Richard S. Snedeker (JA, EN) 682
- Noise effects on the critical tracking performance of the human operator. G. M. Swisher, M. L. Ritchie, and F. Maher (JSR, EN) 778
- Allowable regions for stability multiplier characteristics. M. K. Sundareshan and M. A. L. Thathachar (AIAA J, TN) 1246

- Placement of observer eigenvalues. Gregory J. Nazarov, Larry D. Levens, and Gary A. Hower (AIAA J, TN) 1686
- Erratum: "Flight investigation of the influence of turbulence on lateral-directional flying qualities." James A. Franklin (JA, ERR) 256

Aircraft Landing Dynamics

- Lateral-directional dynamics and roll control power for the landing approach. G. Warren Hall and Edward M. Boothe (JA) 129
- Structural modeling of aircraft tires. S. K. Clark, R. N. Dodge, J. I. Lackey, and G. H. Nybakken (JA) 162
- Performance limits of an aircraft inertial-based stochastic lateral guidance system. Duncan MacKinnon and Paul Madden (JA) 217
- Flight investigation of the influence of turbulence on longitudinal flying qualities. James A. Franklin (JA) 273
- Direct lift control for improved automatic landing and performance of transport aircraft. Lowell O. Lykken and Naren M. Shah (JA) 325
- Frequency response of tires using the point contact theory. R. L. Collins (JA) 427
- Performance limits of a radio-inertial lateral control system for automatic landing. Duncan MacKinnon and Paul Madden (JA) 513
- Theoretical tire equations for shimmy and other dynamic studies. Lynn C. Rogers (JA) 585

Aircraft Navigation, Communication, and Traffic Control

- Synchronized time and frequency for aeronautical collision avoidance, communication, navigation, and surveillance. James E. Blouin (JA, SYN) 323
- Optimal and suboptimal velocity-eiding for VOR/DME-systems. Norbert B. Hemesath (AIAA J) 24
- A redundant strapdown inertial reference unit (SIRU). Jerold P. Gilmore and Richard A. McKern (JSR) 39
- Statistical analysis of several terminal area traffic collision hazard factors. J. Ray Ruetenik (JA) 79
- Active damping of ESG rotors with mass-unbalance readout. Benjamin Lange (JSR) 96
- Performance limits of an aircraft inertial-based stochastic lateral guidance system. Duncan MacKinnon and Paul Madden (JA) 217
- Filter comparison for tracking aircraft in straight and level flight. Larry J. Bonin (JA) 282
- Improved navigation by combining VOR/DME information and air data. A. E. Bryson Jr. and J. C. Bobick (JA) 420
- Guidance and control techniques for automated air traffic control. Homer Q. Lee, John D. McLean, and Heinz Erzberger (JA) 490
- Performance limits of a radio-inertial lateral control system for automatic landing. Duncan MacKinnon and Paul Madden (JA) 513
- Automated aircraft scheduling methods in the near terminal area. Leonard Tobias (JA) 520
- Pressure measurements of wake vortices near the ground. J. N. Hallock (JA, EN) 311

Aircraft Noise, Aerodynamics (including Sonic Boom)

- Alleviation of the sonic boom by thermal means. S. B. Batdorf (JA) 150
- Characteristics of multibute multishroud supersonic jet noise suppressor. H. T. Nagamatsu, R. E. Sheer Jr., and M. S. Gill (AIAA J) 307
- Design of acoustic linings for ducts with flow. Walter Eversman, M. Dean Nelsen, Denis Armstrong, and Orville J. Hall Jr. (JA) 548
- Closed form solution for the sonic boom in a polytropic atmosphere. R. Stuff (JA) 556
- Effect of SST operational maneuvers on sonic boom. George T. Haglund and Edward J. Kane (JA) 563
- Developments of a generalized theory of jet noise. S. Paul Pao (AIAA J) 596
- Prediction of the spectral content of combination tone noise. Gordon F. Pickett (JA) 658
- Sonic-boom wind-tunnel testing techniques at high Mach numbers. Odell A. Morris and David S. Miller (JA) 664
- Effect of streamwise vortices on wake properties associated with sound generation. Arnold M. Kuethe (JA) 715
- Decay of a diamond shock pattern. Girard A. Simons (AIAA J) 1037
- Calculation of sonic boom signatures by bicharacteristic methods. Sanford S. Davis (AIAA J) 1211
- A method for wind-tunnel investigation of sonic booms. Y. S. Pan and K. T. Wang (AIAA J) 1408
- Sonic boom of hypersonic vehicles. Y. S. Pan and W. A. Sotomayer (AIAA J, TN) 550
- Nonstationary response exceedance statistics of a simple mechanical system. Joseph M. Verdon (AIAA J, TN) 834
- Three-dimensional structure and equivalence rule of transonic flows. H. K. Cheng and Mohammed Hafez (AIAA J, TN) 1115

Aircraft Noise, Powerplant

- Trends in aircraft propulsion. George Rosen (JA) 333
 Community noise levels of the DC-10 aircraft. A. L. McPike (JA) 542
 Design of acoustic linings for ducts with flow. Walter Eversman, M. Dean Nelsen, Denis Armstrong, and Orville J. Hall Jr. (JA) 548
 Prediction of the spectral content of combination tone noise. Gordon F. Pickett (JA) 658
 Theoretical and experimental investigations on multiple pure tone noise. R. A. Kantola and M. Kurosaka (JA) 784
 Effect on supersonic jet noise of nozzle plenum pressure fluctuations. Raymond Kushida and Jack Rupe (AIAA J, TN) 946

Aircraft Performance

- A new approach to onboard real-time optimum computations for aerial combat games. T. K. Campbell and L. B. Hartsook (JA, SYN) 193
 Sight line autopilot: A new concept in air weapons. Bradford W. Parkinson, M. W. Wynne, and L. R. Kruczynski (JA, SYN) 321
 Use of a radial turbine in a thrust augmentation scheme. Ronald J. Wills, Barry S. Seidel, and Robert B. Cotton (JA, SYN) 803
 Aircraft performance optimization. Robert L. Schultz and Nelson R. Zagalsky (JA) 108
 Three-dimensional, minimum-time turns for a supersonic aircraft. J. Karl Hedrick and Arthur E. Bryson Jr. (JA) 115
 Three-dimensional, minimum fuel turns for a supersonic aircraft. J. K. Hedrick and A. E. Bryson Jr. (JA) 223
 Active flutter suppression—An emerging technology. Glenn O. Thompson and Gerald J. Kass (JA) 230
 Direct lift control for improved automatic landing and performance of transport aircraft. Lowell O. Lykken and Naren M. Shah (JA) 325
 Air superiority with control configured fighters. R. B. Jenny, F. M. Krachmalnick, and S. A. LaFavor (JA) 370
 A stability analysis for tethered aerodynamically shaped balloons. James D. DeLaurier (JA) 646
 Proprotor short-haul aircraft—STOL and VTOL. Kenneth W. Sambell (JA) 744
 Thermoelastic effect on delta-wing flutter with arbitrary stiffness orientation. Tsai-Chen Soong (JA) 835
 Incipient stall detection through unsteady-pressure monitoring on aircraft wings. Hanno H. Heller, Donald B. Bliss, and Sheila E. Widnall (JA, EN) 186
 Minimum weight passive insulation requirements for hypersonic cruise vehicles. Mark D. Ardema (AIAA J, TN) 968

Aircraft Powerplant Design and Installation

- Prospects for improvement in efficiency of flight propulsion systems. R. M. Denning and J. A. Hooper (JA) 9
 Distortion and turbulence interaction—A method for evaluating engine inlet compatibility. E. A. Van Deusen and V. R. Mardoc (JA) 16
 External drag of fuselage side intakes. M. D. Dobson and E. L. Goldsmith (JA) 121
 Design and testing of the American Airlines prototype B-747 AIDS system. H. D. Kruckenberg (JA) 259
 Trends in aircraft propulsion. George Rosen (JA) 333
 External heat-transfer distribution on film cooled turbine vanes. Richard D. Lander, Robert W. Fish, and Mikio Suo (JA) 707
 Predicted film cooling near flush slots—Comparison with experiment. D. E. Metzger, J. H. Carper Jr., and J. M. Warren (JA) 857

Aircraft Structural Design (including Loads)

- Vibrations of laminated beams. Dusan Krajcinovic (AIAA, J, SYN) 1265
 Acoustic fatigue design information for honeycomb panels with fiber-reinforced facings. M. J. Jacobson and R. C. W. van der Heyde (JA) 31
 Investigations concerning the coupled wing-fuselage-tail flutter phenomenon. W. J. Mykytow, T. E. Noll, L. J. Huttshell, and M. H. Shirk (JA) 48
 Flexure of laminated Reissner plates. David N. Hutula and Donald G. Lemke (JSR) 84
 Random buckling behavior in axially loaded cylindrical shells with axisymmetric imperfections. J. Roorda and J. S. Hansen (JSR) 88
 Strength and fatigue loads computed with a load-environment model. James D. Yost and Guinn S. Johnson (JA) 199
 Active flutter suppression—An emerging technology. Glenn O. Thompson and Gerald J. Kass (JA) 230
 Improved methods of atmospheric turbulence prediction for aircraft design and operation. James D. Yost, Wayne B. Jackson, and L. Wayne Salter (JA) 266
 Buckling of orthotropic, curved, sandwich panels subjected to edge shear loads. Otha B. Davenport and Charles W. Bert (JA) 477
 A mixed optimization method for automated design of fuselage structures. Jaroslaw Sobieszcanski and David Loendorf (JA) 805

- Automated procedures for sizing aerospace vehicle structures (SAVES). Gary L. Giles, Charles E. Blackburn, and Sidney C. Dixon (JA) 812
 Thermoelastic effect on delta-wing flutter with arbitrary stiffness orientation. Tsai-Chen Soong (JA) 835
 A simple graphical procedure for determining cyclic-elasto-plastic notch stresses. John M. Potter (AIAA J) 1304
 Spatial decay in the response of damped periodic beam. R. Vaicaitis, K. Doi, and Y. K. Lin (JA, EN) 91
 Stability of a laminated anisotropic circular plate. Sam Tang (JSR, EN) 123
 Analysis of a partially cracked panel. James Ting-Shun Wang and Teh-Min Hsu (JA, EN) 503
 Selective reinforcement of wing structure for flutter prevention. Paul A. Cooper and W. Jefferson Stroud (JA, EN) 797
 Load-time dependent relaxation of residual stresses. Darrell Simpkins, Robert L. Neulieb, and Dennis J. Golden (JA, EN) 867
 Minimum weight passive insulation requirements for hypersonic cruise vehicles. Mark D. Ardema (AIAA J, TN) 968

Aircraft Structural Materials

- Vibrations of laminated beams. Dusan Krajcinovic (AIAA, J, SYN) 1265
 Acoustic fatigue design information for honeycomb panels with fiber-reinforced facings. M. J. Jacobson and R. C. W. van der Heyde (JA) 31
 Design and test of a boron/epoxy reinforced airframe. Melvin J. Rich and Robert T. Welge (JA) 790

Aircraft Subsystem Design

- Status of engine rotor burst protection program for aircraft. Patrick T. Chiarito (JA, SYN) 449
 An ultrasonic altitude-velocity sensor for airplanes in the vicinity of the ground. Hiroshi Maeda and Yoshikuni Umeda (JA) 294
 Quasi-static moment measurements for airfoils in an annular cascade. F. Sisto and R. H. Ni (JA) 298
 Theory and flight verification of the TIFS model-following system. Paul R. Motyka, Edmund G. Rynaski, and Philip A. Reynolds (JA) 347
 Adaptive model following systems for flight control and simulation. I. D. Landau and B. Courtiol (JA) 668
 An analysis of Navy approach power compensator problems. Samuel J. Craig, Robert F. Ringland, and I. L. Ashkenas (JA) 737

Aircraft Testing (including Component Wind Tunnel Testing)

- Model support effects on aerodynamic and wake characteristics of large angle cones. Melvin M. Carmel and Clarence A. Brown Jr. (JA, SYN) 99
 Dynamic stability testing of unconventional configurations. K. J. Orlik-Rückemann, P. A. Adams, and J. G. LaBerge (JA, SYN) 101
 Evaluation of techniques for predicting static aeroelastic effects on flexible aircraft. Irving Abel (JA) 43
 Investigations concerning the coupled wing-fuselage-tail flutter phenomenon. W. J. Mykytow, T. E. Noll, L. J. Huttshell, and M. H. Shirk (JA) 48
 External drag of fuselage side intakes. M. D. Dobson and E. L. Goldsmith (JA) 121
 Improved qualitative flight data rating scales. C. Vance Shufeldt and Donald M. Layton (JA) 537
 Development of the F-15 integrated data system. Robert D. Samuelson and Eugene J. Zehr (JA) 652
 Supersonic dynamic stability experiments on the space shuttle. K. J. Orlik-Rückemann, J. G. LaBerge, and E. S. Hanff (JSR) 655
 Adaptive model following systems for flight control and simulation. I. D. Landau and B. Courtiol (JA) 668
 A method for wind-tunnel investigation of sonic booms. Y. S. Pan and K. T. Wang (AIAA J) 1408
 Flow in the wake of a cascade of oscillating airfoils. W. P. Jones and Jimmie A. Moore (AIAA J) 1600
 Incipient stall detection through unsteady-pressure monitoring on aircraft wings. Hanno H. Heller, Donald B. Bliss, and Sheila E. Widnall (JA, EN) 186
 Influence of helical serrations on the aerodynamic properties of a spinning body. Maurice A. Sylvester (AIAA, J, TN) 223
 A wind-tunnel stream oscillation apparatus. J. Bicknell and A. G. Parker (JA, EN) 446
 Wind-tunnel wall interference reduction by streamwise porosity distribution. Ching-Fang Lo (AIAA J, TN) 547
 —Comment on "Wind-tunnel interference reduction by streamwise porosity distribution." M. Mokry (AIAA J, TC) 1727
 —Reply by author to M. Mokry. C. F. Low (AIAA J, TC) 1727
 The effect of several wing tip modifications on a trailing vortex. James F. Marchmann III and Joseph N. Uzel (JA, EN) 684
 Equations of motion for flexible cables. Thomas R. Rogge (JA, EN) 799

Aircraft Vibration

- Vibrations of laminated beams. Dusan Krajcinovic (AIAA J, SYN) 1265
Frequency response of tires using the point contact theory. R. L. Collins (JA) 427
Analysis and correlation of data on pressure fluctuations in separated flow. Dennis G. Mabey (JA) 642
Thermoelastic effect on Delta-wing flutter with arbitrary stiffness orientation. Tsai-Chen Soong (JA) 835
Nonlinear axisymmetric flexural vibration equations of a cylindrically anisotropic circular plate. Chi-lung Huang (AIAA J, TN) 1378
Stability of clamped rectangular plates in uniform subsonic flow. C. H. Ellen (AIAA J, TN) 1716
Comments on "Synthesis of tire equations for use in shimmy and other dynamic studies." R. J. Black (JA, TC) 318
—Reply by authors to R. J. Black. L. C. Rogers and H. K. Brewer (JA, TC) 320

Air Transportation Systems

- Comment on "Turbulent skin friction for tapered wings." William Squire (JA, TC) 448

General Aviation Systems

- Buckling of orthotropic, curved sandwich panels subjected to edge shear loads. Otha B. Davenport and Charles W. Bert (JA) 477
Some recent MIT research on dynamic stall. Norman D. Ham (JA, EN) 378

Ground Support Systems

Military Aircraft Missions

- Modeling the effects of pilot performance on weapon delivery accuracy. Cornelius T. Leondes and Robert R. Rankine Jr. (JA) 286

AIRCRAFT TECHNOLOGY, VTOL

Ground (or Water-Surface) Effect Machines

- Prediction of static aerodynamic characteristics of air cushion vehicles through 180° of yaw. Walter Zeitfuss Jr. and Eugene N. Brooks Jr. (JA) 306
Base drag of a thick annular jet. Paul S. Moller and Richard L. Elliott (JA) 451
Jet-flapped wings in very close proximity to the ground. Teruhiko Kida and Yoshihiro Miyai (AIAA J) 611
Forward-speed effects on peripheral-jet ground support systems. George C. Cooke and Robert E. Duffy (JA) 675

Rotary Wing Aerodynamics

- Hingeless helicopter rotor response with nonuniform inflow and elastic blade bending. Robert A. Ormiston and David A. Peters (JA) 730
Interference of wing and multipropellers. L. Ting, C. H. Liu, and G. Kleinstein (AIAA J) 906
Jet impingement under VTOL aircraft. Thomas M. Houlihan and Charles D. Thompson (AIAA J) 1179
Subsonic and transonic potential flow over helicopter rotor blades. Francis X. Caradonna and Morris P. Isom (AIAA J) 1606
Boundary-layer separation on rotating blades in forward flight. Warren H. Young Jr. and James C. Williams (AIAA J) 1613
Study of rotating airfoil. Haji M. Jameel (JA, EN) 314

VTOL Aircraft Design

- V/STOL certification. James F. Rudolph (JA) 248
A model-following variable stability system for the NASA ARC X-14B. J. T. Gallagher, I. Saworotnow, R. Seeman, and T. Gossett (JA) 461
Proprotor short-haul aircraft—STOL and VTOL. Kenneth W. Sambell (JA) 744
Heavy lift helicopter program: An advanced technology solution to transportation problems. Ben Tencer and J. P. Cosgrove (JA) 753
Design and test of a boron/epoxy reinforced airframe. Melvin J. Rich and Robert T. Welge (JA) 790

VTOL Cabin Habitability and Design

VTOL Flight Operations

- V/STOL certification. James F. Rudolph (JA) 248

VTOL Ground Support Systems

VTOL Handling, Stability, and Control

- Minimum order state reconstruction filters for constant plants. Lee Gregor Hofmann (AIAA J, SYN) 373
Synthesis of helicopter stabilization systems using modal control theory. T. R. Crossley and B. Porter (JA) 3
A model-following variable stability system for the NASA ARC X-14B. J. T. Gallagher, I. Saworotnow, R. Seeman, and T. Gossett (JA) 461
Wind shear near the ground and aircraft operations. George H. Fichtl (JA) 765

VTOL Landing Dynamics

VTOL Missions and Transportation Systems

- Heavy lift helicopter program: An advanced technology solution to transportation problems. Ben Tencer and J. P. Cosgrove (JA) 753

VTOL Powerplant Design and Installation

- Lifting fan noise studies with superimposed cross flows. G. Krishnappa (JA) 719

VTOL Structural Design (including Loads)

- Stability of a laminated anisotropic circular plate. Sam Tang (JSR, EN) 123
An advanced stochastic model for threshold crossing studies of rotor blade vibrations. Gopal H. Gaonkar and Kurt H. Hohenemser (AIAA J, TN) 1100

VTOL Testing

- A model-following variable stability system for the NASA ARC X-14B. J. T. Gallagher, I. Saworotnow, R. Seeman, and T. Gossett (JA) 461

VTOL Vibration

- Random gust response statistics for coupled torsion-flapping rotor blade vibrations. G. H. Gaonkar, K. H. Hohenemser, and S. K. Yin (JA) 726
An advanced stochastic model for threshold crossing studies of rotor blade vibrations. Gopal H. Gaonkar and Kurt H. Hohenemser (AIAA J, TN) 1100
Response of linear periodically time varying systems to random excitation. D. A. Prelewicz (AIAA J, TN) 1124

FLUID DYNAMICS

Boundary Layers and Convective Heat Transfer—Laminar

- Advanced high-power arc heaters for simulating entries into the atmospheres of the outer planets. Charles E. Shepard (AIAA J, SYN) 117
Transonic region of a supersonic boundary layer turning a sharp corner. B. D. Fishburn and T. C. Adamson Jr. (AIAA J, SYN) 123
Viscous flowfield calculations on pointed bodies at angle of attack in nonuniform freestreams. Frankie G. Moore and Fred R. DeJarnette (AIAA J, SYN) 375
Surface flow patterns and aerodynamic heating on space shuttle vehicles. J. G. Marvin, H. L. Seegmiller, W. K. Lockman, G. G. Mateer, C. C. Pappas, and C. E. DeRose (JSR, SYN) 573
Skin-friction measurements in laminar and turbulent flows using heated thin-film gages. R. J. Pope (AIAA J, SYN) 729
Oscillating slender cone in viscous hypersonic flow. Kazimierz J. Orlik-Rückemann (AIAA J, SYN) 1139
Skin friction on porous surfaces calculated by a simple integral method. Tse-Fou Zien (AIAA J, SYN) 1267
Displacement interaction and surface curvature effects on hypersonic boundary layers. S. F. Wornom and M. J. Wele (AIAA J, SYN) 1557
Role of buoyancy and the Boussinesq approximation in horizontal boundary layers. L. G. Redekopp and A. F. Charwat (JH) 34
Minimum-energy hypersonic nose and leading-edge shapes. Roger J. Furey (JSR) 107

- Ducts for material and ablation studies. E. M. Winklerinkler, R. L. Humphrey, and M. T. Madden (JSR) 172
- Heat pipe calorimetry for plasma stagnation-point heat transfer. M. M. Abu-Romia and B. Bhatia (AIAA J) 313
- Flowfield measurements using a total temperature probe at hypersonic speeds. Irwin E. Vas (AIAA J) 317
- Flame-sheet analysis of C. W. diffusion-type chemical lasers, I. Uncoupled radiation. R. Hofland and H. Mirels (AIAA J) 420
- Flame-sheet analysis of C. W. diffusion-type chemical lasers, II. Coupled radiation. R. Hofland and H. Mirels (AIAA J) 1271
- Foreign gas injection into three-dimensional stagnation point flows. Andrzej Wortman (JSR) 428
- Laminar boundary layers developed within unsteady expansion and compression waves. J. Gordon Hall (AIAA J) 499
- Application of an improved transpiration cooling concept to space shuttle type vehicles. John R. Schuster and Thomas G. Lee (JSR) 804
- Separation patterns of boundary layer over an inclined body of revolution. K. C. Wang (AIAA J) 1044
- Hypersonic leading edge problem: Wedges and cones. Michael L. Shorenstein (AIAA J) 1173
- Three-dimensional effects on electron density in a blunt body laminar boundary layer. C. B. Watkins and F. G. Blottner (AIAA J) 1332
- Analysis of flow of viscous fluids by the finite-element method. J. Tinsley Oden and L. Carter Wellford Jr. (AIAA J) 1590
- Boundary-layer separation on rotating blades in forward flight. Warren H. Young Jr. and James C. Williams (AIAA J) 1613
- Experimental and theoretical study of supersonic viscous flow over a yawed circular cone. Jacques Marcillat and Bernard Roux (AIAA J) 1625
- Three-dimensional heat-transfer and ablation disturbances in high-speed flows. G. R. Inger (AIAA J) 1641
- Conical nose shape effects on drag and static stability at Mach 10. Robert S. Neff (JSR, EN) 126
- Laminar thermal boundary layers on continuous surfaces. C. A. Rhodes and H. Kaminer Jr. (AIAA J, TN) 331
- Laminar boundary layer on a rotating round-nosed blade. Masaki Takematsu (AIAA J, TN) 333
- Calculation of three-dimensional laminar boundary-layer flows. J. A. Fillo and R. Burbank (AIAA J, TN) 353
- Comment on "Calculation of three-dimensional laminar boundary-layer flows." Kenneth K. Wang (AIAA J, TC) 1725
- Reply by authors to K. K. Wang. J. A. Fillo and R. Burbank (AIAA J, TC) 1726
- Solution of unsteady flow of power law fluids. Tommy Y. W. Chen and David E. Wollersheim (AIAA J, TN) 689
- Evaluation of windward streamline effective cone boundary-layer analyses. John C. Adams Jr. (JSR, EN) 718
- Comparison of numerical and asymptotic expansion solutions of the boundary-layer equations. David F. Rogers (AIAA J, TN) 828
- Heat and mass transfer on cones at angles of attack. Andrzej Wortman (AIAA J, TN) 832
- A parametric study of Falkner-Skan problem with mass transfer. C. W. Tan and Robert DiBiano (AIAA J, TN) 923
- Symmetries of the boundary-layer equations under groups of linear transformation. H. S. Bluston (AIAA J, TN) 943
- Laser velocimeter measurement of Reynolds stress and turbulence in dilute polymer solutions. Samuel E. Logan (AIAA J, TN) 962
- Compressible boundary-layer equations solved by the method of parametric differentiation. C. L. Narayana and P. Ramamoorthy (AIAA J, TN) 1085
- Heat transfer at reattachment of a compressible flow over a backward facing step with a suction slot. Demetri P. Telionis (AIAA J, TN) 1108
- Shock tube boundary layers in ionized argon-helium mixtures. Nelson A. Macken, Arthur L. Besse, and Morton A. Levine (AIAA J, TN) 1129
- Use of an infrared-imaging camera to obtain convective heating distributions. Dale L. Compton (AIAA J, TN) 1130
- A finite-difference method for boundary layers with reverse flow. M. J. Werle and S. D. Bertke (AIAA J, TN) 1250
- Viscous analysis of a slip surface. Wilbur L. Hankey (AIAA J, TN) 1363
- Modified convergence criterion for boundary layers. James B. Elgin (AIAA J, TN) 1367
- Radiative and convective heating during Venus entry. William A. Page and Henry T. Woodward (AIAA J, TN) 1379
- Calculation of metric coefficients for streamline coordinates. John V. Rakich and George G. Mateer (AIAA J, TN) 1538
- Application of a variational technique to wedge flow with variable properties. S. C. Cheng and A. Kumar (AIAA J, TN) 1681
- Comment on "A integral calculation of skin friction on a porous plate." Paul S. Granville (AIAA J, TC) 367
- Reply by author to P. S. Granville. Tse-Fou Zien (AIAA J, TC) 367
- Comment on "Separating self-similar laminar boundary layers" David F. Rogers (AIAA J, TC) 1391
- Reply by authors to D. F. Rogers. A. Wortman and A. F. Mills (AIAA J, TC) 1392
- Comment on "A new integral calculation of skin friction on a porous plate." D. A. MacDonald (AIAA J, TC) 1724
- Reply by author to D. A. MacDonald. Tse-Fou Zien (AIAA J, TC) 1724
- Boundary Layers and Convective Heat Transfer—Turbulent**
- Curved diffusing annulus turbulent boundary-layer development. Shoichi Fujii and Theodore H. Okiishi (JA, SYN) 97
- Wall layer of plane turbulent wall jets without pressure gradients. James E. Hubbart and Douglas H. Neale (JA, SYN) 195
- Flap turbulent heating characteristics obtained from a hypersonic shock tunnel. B. S. C. Kim and T. W. Parkinson (JSR, SYN) 227
- Calculation method for compressible turbulent boundary flows with heat transfer. R. H. Fletcher (AIAA J, SYN) 245
- Surface flow patterns and aerodynamic heating on space shuttle vehicles. J. G. Marvin, H. L. Seegmiller, W. K. Lockman, G. G. Mateer, C. C. Pappas, and C. E. DeRose (JSR, SYN) 573
- Calculation of viscous drag in incompressible flows. Tuncer Cebeci, G. J. Mosinskis, and A. M. O. Smith (JA, SYN) 691
- Skin-friction measurements in laminar and turbulent flows using heated thin-film gages. R. J. Pope (AIAA J, SYN) 729
- Mean velocity profile of a thick turbulent boundary layer along a circular cylinder. David M. Chase (AIAA J, SYN) 849
- Pressure-gradient effects on hypersonic turbulent skin-friction and boundary-layer profiles. Edward J. Hopkins and Earl R. Keener (AIAA J, SYN) 1141
- Hypersonic turbulent boundary layer with pressure gradients and cross flow. Victor Zakkay, Wladimiro Calarese, and Chi Rong Wang (AIAA J, SYN) 1393
- Atmospheric transport, dispersion, and chemical reactions in air pollution: A review. Martin I. Hoffert (AIAA J, SA) 377
- Errata: "Atmospheric transport, dispersion, and chemical reactions in air pollution: A Review." Martin I. Hoffert (AIAA J, TC) 1728
- Calculation of turbulent shear flows for atmospheric and vortex motions. Coleman duP. Donaldson (AIAA J) 4
- A turbulent mixing length formulation for non-Newtonian power law fluids. Arthur M. Hecht (JH) 21
- Diffusion of drag reducing polymers in a turbulent boundary layer. Michael Poreh and K. S. Hsu (JH) 27
- Hypersonic turbulent skin-friction and boundary-layer profiles on nonadiabatic flat plates. Edward J. Hopkins, Earl R. Keener, Thomas E. Polek, and Harry A. Dwyer (AIAA J) 40
- Turbulent MHD boundary layers with electron thermal nonequilibrium and finite rate ionization. M. D. High and E. J. Felderman (AIAA J) 98
- Ducts for material and ablation studies. E. M. Winkler, R. L. Humphrey, and M. T. Madden (JSR) 172
- Effects of mass transfer on hypersonic turbulent boundary-layer properties. Anthony Martellucci (AIAA J) 181
- Jet-interaction-induced separation: The two-dimensional problem. M. J. Werle, R. T. Driftmyer, and D. G. Shaffer (AIAA J) 188
- Mass loss from thin liquid-surface films exposed to re-entry heating and shear. John R. Schuster (JSR) 271
- Turbulent flow studies in two arc-heated duct facilities. M. Alan Covington and Nick S. Vojvodich (JSR) 441
- Supersonic turbulent boundary layer in adverse pressure gradient. Part I: The experiment. Walter B. Sturek and James E. Danberg (AIAA J) 475
- Gas dynamic and transport phenomena in the two-dimensional jet interaction flowfield. W. J. Thayer III and R. C. Corlett (AIAA J) 488
- Calculation of separation points in incompressible turbulent flows. Tuncer Cebeci, G. J. Mosinskis, and A. M. O. Smith (JA) 618
- Compressible turbulent boundary-layer heat transfer to rough surfaces in pressure gradient. Karl K. Chen (AIAA J) 623
- Supersonic turbulent boundary layer in adverse pressure gradient. Part II: Data analysis. Walter B. Sturek and James E. Danberg (AIAA J) 630
- Subsonic and supersonic boundary-layer flow past a wavy wall. G. R. Inger and E. P. Williams (AIAA J) 636
- Decay of boundary-layer turbulence in near wake of a slender body. Anthony N. Pirri (AIAA J) 657
- External heat-transfer distribution on film cooled turbine vanes. Richard D. Lander, Robert W. Fish, and Mikio Suo (JA) 707
- Film cooling of insert turbine vane trailing edges. E. C. Bassiot (JA) 849
- Predicted film cooling near flush slot—Comparison with experiment. D. E. Metzger, J. H. Carper Jr. and J. M. Warren (JA) 857
- Nozzle wall boundary layers at Mach numbers 20 to 47. Joseph H. Kemp Jr. and F. K. Owen (AIAA J) 872
- Hypersonic transitional and turbulent flow studies on a lifting entry vehicle. C. H. Young, D. C. Reda, and A. M. Roberge (JSR) 883
- Film-cooling effectiveness and skin friction in hypersonic turbulent flow. Aubrey M. Cary Jr. and Jerry N. Hefner (AIAA J) 1188
- Accurate numerical methods for boundary-layer flows. II: Two-dimensional turbulent flows. Herbert B. Keller and Tuncer Cebeci (AIAA J) 1193
- Explicit numerical solution of the three-dimensional incompressible turbulent boundary-layer equations. J. L. East Jr. and F. J. Pierce (AIAA J) 1216
- Nonsimilar solution for laminar and turbulent boundary-layer flows over ablating surfaces. Robert M. Kendall, Larry W. Anderson, and Ronald H. Aungier (AIAA J) 1230
- Transitional and turbulent heat-transfer measurements on a yawed blunt conical nosetip. George F. Widhopf and Robert Hall (AIAA J) 1318

- Transition and hot-wire measurements in hypersonic helium flow. M. C. Fischer and R. D. Wagner (AIAA J) 1326
- Turbulence structure parameters in an inhomogeneous strain field. P. A. C. Okwuobi, R. S. Azad, and O. Hawaleshka (AIAA J) 1414
- Turbulent properties of a compressible boundary layer. C. C. Horstman and F. K. Owen (AIAA J) 1418
- Calculation of compressible turbulent boundary layers with roughness and heat transfer. F. A. Dvorak (AIAA J) 1447
- Experimental and theoretical study of supersonic viscous flow over a yawed circular cone. Jacques Marcollat and Bernard Roux (AIAA J) 1625
- Three-dimensional heat-transfer and ablation disturbances in high-speed flows. G. R. Inger (AIAA J) 1641
- Mean velocity profiles for turbulent shear flow. R. E. Powe, H. W. Townes, and J. L. Gow (JH, EN) 60
- Effects of a flexible surface on surface shear-stress fluctuations beneath a turbulent boundary layer. Michael E. McCormick, Bruce Johnson, and William M. Lee (JH, EN) 62
- Calculation of compressible adverse pressure gradient turbulent boundary layers. D. M. Bushnell and D. W. Alston (AIAA J, TN) 229
- Shock-wave, turbulent boundary-layer interaction on a blunted compression surface. William C. Rose, Helmer L. Nielsen, and Earl C. Watson (JSR, EN) 278
- Near-wall collateral flow in three-dimensional turbulent boundary layers. F. J. Pierce and J. L. East Jr. (AIAA J, TN) 334
- Turbulent boundary layers with uniform mass transfer including low Reynolds numbers. George F. Greenwald (AIAA J, TN) 349
- Yaw characteristics of Preston tubes. T. S. Prahlad (AIAA J, TN) 357
- Effect of transition on three-dimensional shock-wave/boundary-layer interaction. Robert H. Korkegi (AIAA J, TN) 361
- Prediction of turbulent boundary-layer separation influenced by blowing. Arnold Polak (AIAA J, TN) 538
- Impact probe displacement in a supersonic turbulent boundary layer. Jerry M. Allen (AIAA J, TN) 555
- Turbulent base heating on a slender re-entry vehicle. W. Leon Francis (JSR, EN) 620
- Correlations of peak heating in shock interference regions at hypersonic speeds. J. Wayne Keyes and Dana J. Morris (JSR, EN) 621
- Entrainment equation for three-dimensional, compressible, turbulent boundary layers. J. Richard Shanebrook and William J. Sumner (AIAA J, TN) 693
- Evaluation of windward streamline effective cone boundary-layer analyses. John C. Adams Jr. (JSR, EN) 718
- Numerical calculation of sharp flat plate transitional and turbulent skin friction. J. C. Adams Jr. (AIAA J, TN) 841
- Measurements of Reynolds analogy for hypersonic turbulent boundary layer on a nonadiabatic flat plate. Earl R. Kenner and Thomas E. Polek (AIAA J, TN) 845
- Calculations of the turbulent boundary layer in supersonic nozzles. E. R. Bergstrom and S. Raghunathan (AIAA J, TN) 936
- Spreading of a turbulent disturbance. Michael C. Fischer (AIAA J, TN) 957
- Boundary-layer effects on pressure variations in Ludwig tubes. Eckart Piltz (AIAA J, TN) 1095
- Use of an infrared-imaging camera to obtain convective heating distributions. Dale L. Compton (AIAA J, TN) 1130
- Hydrodynamic stability boundary layers with surface suction. T. S. Chen and L. M. Huang (AIAA J, TN) 1366
- Plateau pressure in hypersonic turbulent boundary-layer interactions. Barry L. Reeves (AIAA J, TN) 1546
- Comment on "Turbulent skin friction for tapered wings." William Squire (JA, TC) 448
- Errata: "Atmospheric transport, dispersion and chemical reactions in air pollution: A review." Martin I. Hoffert (AIAA J, ERR) 1728

Boundary-Layer Stability and Transition

- Observations of hypersonic boundary-layer transition using hot wire anemometry. John E. LaGraff (AIAA J) 762
- Hypersonic transitional boundary layers. F. K. Owen and C. C. Horstman (AIAA J) 769
- Transition and hot-wire measurements in hypersonic helium flow. M. C. Fischer and R. D. Wagner (AIAA J) 1326
- Investigation of simulated melting instability waves near stagnation region in hypersonic flow. William Kuzyk and Ching Jen Chen (AIAA J) 1505
- Experimental and theoretical study of supersonic viscous flow over a yawed circular cone. Jacques Marcollat and Bernard Roux (AIAA J) 1625
- A simple formula for flat plate boundary-layer transition in supersonic wind tunnels. R. Ross (AIAA J, TN) 336
- Cone transitional boundary-layer structure at $M_e = 14$. Michael C. Fischer and Leonard M. Weinstein (AIAA J, TN) 699
- Taylor instability in the shock layer on a Jovian atmosphere entry probe. Dale L. Compton (JSR, EN) 717
- Numerical calculation of sharp flat plate transitional and turbulent skin friction. J. C. Adams Jr. (AIAA J, TN) 841

- Instability of hypersonic viscous shock layer with finite rate chemistry. Narendra P. Reddy (AIAA J, TN) 1122
- The effect of angle of attack on boundary-layer transition on cones. George G. Mateer (AIAA J, TN) 1127
- Roughness-induced boundary-layer transition on blunt bodies. Rudolph J. Swigart (AIAA J, TN) 1355
- Hydrodynamic stability of boundary layers with surface suction. T. S. Chen and L. M. Huang (AIAA J, TN) 1366
- Turbulent bursts and rings on a cone in helium at $M_e = 7.6$. Michael C. Fischer (AIAA J, TN) 1387
- Aerodynamic noise and boundary-layer transition measurements in supersonic test facilities. E. R. Bergstrom and S. Raghunathan (AIAA J, TN) 1531
- Errata: "An analysis of plume-induced boundary-layer separation." Michael C. Fong (JSR, ERR) 480

Hydrodynamics

- Mathematical model of underwater simulation of astronaut extravehicular activities. Y. C. Pao (JSR, SYN) 229
- Hydrodynamic aspects of waste discharge. Marshall P. Tulin and Josef Schwartz (JH) 8
- Diffusion of drag reducing polymers in a turbulent boundary layer. Michael Poreh and K. S. Hsu (JH) 27
- Electron microscope studies of polymer degradation. J. H. T. Wade and P. Kumar (JH) 40
- Suppressed diffusion of drag-reducing polymer in a turbulent boundary layer. Jin Wu (JH) 46
- Some storage and shear history effects on polymeric friction reduction. A. T. Ellis, R. Y. Ting, and R. H. Nadolink (JH) 66
- Effects of distributed injection of polymer solutions on turbulent diffusion. Robert R. Walters and C. Sinclair Wells Jr. (JH) 69
- Internal streamline flow analysis for turbopump inducers under cavitating and noncavitating conditions. R. E. Davis, L. L. Coons, and D. D. Scheer (JSR) 116
- Effects of thermal discharges on the stratification cycle of lakes. T. R. Sundaram and R. G. Rehm (AIAA J) 204
- Mass loss from thin liquid-surface films exposed to re-entry heating and shear. John R. Schuster (JSR) 271
- Drift of buoyant wing-tip vortices. Robert C. Costen (JA) 406
- Dynamics of oil slicks. Torstein K. Fannelop and George D. Waldman (AIAA J) 506
- Unsteady axisymmetric flows of a liquid draining from a circular tank. C. Y. Chow and W. M. Lai (AIAA J) 1032
- Maximum drag reduction for a flat plate in polymer solution. Paul S. Granville (JH, EN) 58
- Added mass of a circular cylinder in contact with a rigid boundary. C. J. Garrison (JH, EN) 59
- Theory for the first-order gravitational effects on ship forces and moments in shallow water. J. P. Breslin (JH, EN) 110
- Dynamic similarity scaling laws applied to cables. M. Lowell Collier Jr. (JH, EN) 111
- Laminar thermal boundary layers on continuous surfaces. C. A. Rhodes and H. Kaminer Jr. (AIAA J, TN) 331
- Motion of bubbles in a rotating container. Ivan Catton and S. H. Schwartz (JSR, EN) 468
- V-wings and diamond ring-wings of minimum induced drag. John S. Letcher Jr. (JA, EN) 605
- Draining of a fluid from a rotating cylindrical tank. Bary T. Lubin and Ronald S. Brand (JSR, EN) 618

Jets, Wakes, and Viscid-Inviscid Flow Interactions

- Wall layer of plane turbulent wall jets without pressure gradients. James E. Hubbart and Douglas H. Neale (JA, SYN) 195
- Some aspects of gaseous secondary injection with application to thrust vector control. R. D. Guhse and H. Doyle Thompson (JSR, SYN) 291
- Base flow environment analysis of a single engine booster. Yong S. Hong (JSR, SYN) 481
- Measurement of gaseous mixing downstream of coaxial and adjacent orifices. Hans D. Fricke and Charles J. Schorr (JSR, SYN) 563
- Theoretical and experimental jet mixing of an eccentric primary jet in a constant area duct. Widen Tabakoff and Wisha M. Hosny (JA, SYN) 689
- Viscous interaction of sonic transverse jets with supersonic external flows. Carl T. K. Young and B. F. Barfield (AIAA J, SYN) 853
- Three-dimensional flow separations on aircraft and missiles. David J. Peake, William J. Rainbird, and Edward G. Atraghji (AIAA J, SA) 567
- Hydrodynamic aspects of waste discharge. Marshall P. Tulin and Josef Schwartz (JH) 8
- A theoretical study of the generation of atmospheric-clear air turbulence. Coleman duP. Donaldson, Roger D. Sullivan, and Harold Rosenbaum (AIAA J) 162
- Low-area ratio, thrust-augmenting ejectors. Richard B. Fancher (JA) 243

- Rarefaction effects in high-altitude rocket plumes. Girard A. Simons (AIAA J) 296
- Flowfield interactions induced by underexpanded exhaust plumes. R. C. Boger, H. Rosenbaum, and B. L. Reeves (AIAA J) 300
- Characteristics of multitube multishroud supersonic jet noise suppressor. H. T. Nagamatsu, R. E. Sheer Jr., and M. S. Gill (AIAA J) 307
- Exploratory analysis of nonuniform plug nozzle flowfields. Charles R. Hall Jr. and Thomas J. Mueller (JSR) 337
- Drift of buoyant wing-tip vortices. Robert C. Costen (JA) 406
- Base drag of a thick annular jet. Paul S. Moller and Richard L. Elliott (JA) 451
- Localized measurements of wake density fluctuations using pulsed laser holographic interferometry. A. B. Witte, J. Fox, and H. Rungaldier (AIAA J) 481
- Gas dynamic and transport phenomena in the two-dimensional jet interaction flowfield. W. J. Thayer III and R. C. Corlett (AIAA J) 488
- Dynamic support interference. J. Peter Reding and Lars E. Ericsson (JSR) 547
- Theory of exhaust-plume/boundary-layer interactions at supersonic speeds. John M. Klineberg, Toshi Kubota, and Lester Lees (AIAA J) 581
- Combined viscous-inviscid analysis of supersonic inlet flowfields. Theodore A. Reyhner and Timothy E. Hickcox (JA) 589
- Investigation of a supersonic surface jet—hypersonic flow interaction with axial symmetry. Raymond P. Shreeve, Gordon C. Oates, and Harlow G. Ahlstrom (AIAA J) 589
- An improved solution of the two-dimensional jet-flapped airfoil problem. Richard G. Leamon and Allen Plotkin (JA) 631
- Boundary-layer separation on slender cones at angle of attack. Kenneth F. Stetson (AIAA J) 642
- Effect of streamwise vortices on wake properties associated with sound generation. Arnold M. Kuethe (JA) 715
- Electron density fluctuation measurements in projectile wakes. Jay Fox and Harald Rungaldier (AIAA J) 790
- Wind-tunnel studies of wing wake turbulence. N. A. Chigier and V. R. Corsiglia (JA) 820
- Negative Magnus forces in the critical Reynolds number regime. Clive A. J. Fletcher (JA) 826
- Incipient separation of a supersonic, turbulent boundary layer, including effects of heat transfer. Frank W. Spaid and John C. Frishett (AIAA J) 915
- A theoretical model of the near wake of a slender body in supersonic flow. John T. Ohrenberger and Eric Baum (AIAA J) 1165
- Film-cooling effectiveness and skin friction in hypersonic turbulent flow. Aubrey M. Cary Jr. and Jerry N. Hefner (AIAA J) 1188
- Experimental investigation of recirculating cells in laminar coaxial jets. N. R. Warpinski, H. M. Nagib, and Z. Lavan (AIAA J) 1204
- Experiments on a turbulent jet in a cross flow. Yasuhiro Kamotani and Isaac Greber (AIAA J) 1425
- Lee-side vortices on Delta wings at hypersonic speeds. Dhanvada M. Rao and A. H. Whitehead Jr. (AIAA J) 1458
- An experimental study of hypersonic wakes behind wedges at angle of attack. Jiunn-Jenq Wu and Wilhelm Behrens (AIAA J) 1582
- Flow in the wake of a cascade of oscillating airfoils. W. P. Jones and Jimmie A. Moore (AIAA J) 1600
- Inviscid freejet flow with low specific heat ratios. James B. Anderson (AIAA J, TN) 112
- Holographic interferometry of a submarine wake in stratified flow. Arvel B. Witte (JH, EN) 114
- Turbulent coaxial jet mixing in a constant area duct. H. J. Brandon (JA, EN) 188
- Turbulent-wake calculations with an Eddy-viscosity model. Mamoru Inouye, Joseph G. Marvin, and Yvonne S. Sheaffer (AIAA J, TN) 216
- Finite-difference calculations for two-dimensional unsteady expanding flows. Tomiko Ishiguro (AIAA J, TN) 217
- Response of a trailing vortex to axial injection into the core. H. L. Kantha, W. S. Lewellen, and F. H. Durgin (JA, EN) 254
- Flight test base pressure results at hypersonic Mach numbers in turbulent flow. J. M. Cassanto (AIAA J, TN) 329
- Lin parameter as characteristic of atmospheric vortex streets. Kuldip P. Chopra (AIAA J, TN) 345
- Effect of transition on three-dimensional shock-wave/boundary-layer interaction. Robert H. Korkegi (AIAA J, TN) 361
- Scale-model studies of blast-deflection fences for high thrust engines. John J. Bertin and John C. Westkaemper (JA, EN) 445
- Uncertainty in measurement of intermittency in turbulent free shear flows. Bailly V. Seshagiri and Gordon M. Bragg (AIAA J, TN) 542
- An invalid equation in the general momentum theory of the actuator disk. Peter M. Goorjian (AIAA J, TN) 543
- Effects of transverse outflow from a hypersonic separated region. Allen H. Whitehead Jr., James R. Sterrett, and James C. Emery (AIAA J, TN) 553
- Air film cooling in a nonadiabatic wall conical nozzle. Donald R. Boldman, Steve S. Papell, and Robert C. Ehlers (JSR, EN) 556
- Correlations of peak heating in shock interference regions at hypersonic speeds. J. Wayne Keyes and Dana J. Morris (JSR, EN) 621
- Transition in compressible free shear layers. Stanley F. Birch and J. Wayne Keyes (JSR, EN) 623
- Effect of air injection on the torque produced by a trailing vortex. Richard S. Snedeker (JA, EN) 682
- Effect of several wing tip modifications on a trailing vortex. James F. Marchman III and Joseph N. Uzel (JA, EN) 684
- Spreading of turbulent mixing layers. Andrew J. Yule (AIAA J, TN) 686
- Transient gas concentration measurements utilizing laser Raman spectroscopy. D. L. Hartley (AIAA J, TN) 687
- Taylor instability in the shock layer on a Jovian atmosphere entry probe. Dale L. Compton (JSR, EN) 717
- Plume impingement force during tandem stage separation at high altitudes. Michael W. Su and Charles R. Mullen Jr. (JSR, EN) 715
- Boundary-layer separation: Effect of low-speed wall jets. George W. Haering (JA, EN) 751
- Laminar flamesheet with hypersonic viscous interaction. J. W. Ellinwood and H. Merels (AIAA J, TN) 830
- Secondary jet interaction with emphasis on outflow and jet location. Jerry N. Hefner and James R. Sterrett (JSR, EN) 845
- Flow pattern of two impinging circular jets. Michel A. Saad and Gene J. Antonides (AIAA J, TN) 929
- Binary diffusion of a jet embedded in a boundary layer. F. D. Hains and A. J. Baker (AIAA J, TN) 938
- Effect on supersonic jet noise of nozzle plenum pressure fluctuations. Raymond Kushida and Jack Rupe (AIAA J, TN) 946
- Motion of particles injected from the surface into stagnation-point flow. Bernard Otterman (AIAA J, TN) 1079
- A correlation of freejet data. Richard T. Driftmyer (AIAA J, TN) 1093
- Heat transfer at reattachment of a compressible flow over a backward facing step with a suction slot. Demetri P. Telonis (AIAA J, TN) 1108
- Effect of ground wind shear on aircraft trailing vortices. David C. Burnham (AIAA J, TN) 1114
- Cooled supersonic turbulent boundary layer separated by a forward facing step. Frank W. Spaid (AIAA J, TN) 1117
- Swirling base injection for supersonic combustion ramjets. Louis A. Povinelli and Robert C. Ehlers (AIAA J, TN) 1243
- Mach reflection from overexpanded nozzle flows. W. L. Chow and I. S. Chang (AIAA J, TN) 1261
- Equivalent solid obstacle for gas injection into a supersonic stream. James M. Kallis (AIAA J, TN) 1342
- Two-stream heterogeneous mixing measurements using laser Doppler velocimeter. John B. Miles and Dennis A. Johnson (AIAA J, TN) 1353
- Stability of rotating stratified fluids. Sheridan C. Johnston (AIAA J, TN) 1372
- Low Reynolds number flow past a transverse cylinder at Mach two. Clarence W. Kitchens Jr. and Clarence C. Bush (AIAA J, TN) 1381
- Gas density measurements in a jet using Raman scattering. John M. Kellam and Morton M. Glick (AIAA J, TN) 1389
- Thrust coefficient of artificially excited vortex trail behind a jet flap aerofoil. S. F. A. Kirmani (AIAA J, TN) 1523
- Analyses of free turbulent mixing flows without a net momentum defect. Joseph A. Schetz and Stanley Favini (AIAA J, TN) 1524
- Plateau pressure in hypersonic turbulent boundary-layer interactions. Barry L. Reeves (AIAA J, TN) 1546
- Turbulent gas mixing measurements using a laser Schlieren technique. Sheridan C. Johnston (AIAA J, TN) 1550
- Prandtl eddy viscosity model for coaxial jets. Hermann Viets (AIAA J, TN) 1684
- Base pressure distribution of a cone at hypersonic speeds. George S. Pick (AIAA J, TN) 1685
- Schlieren visualization of the hypersonic entropy wake. Hartmut Giesbrecht, Alois Stulp, and Wolfgang Merzkirch (AIAA J, TN) 1694
- Stationary vortices behind a flat plate normal to the freestream in incompressible flow. Paul L. Coe (AIAA J, TN) 1701
- Effect of low heat-shield ablation rates on flight test turbulent base pressure. Bruce M. Bulmer (AIAA J, TN) 1704
- Multiple-orifice liquid injection into hypersonic air streams. William L. Weaver (AIAA J, TN) 1705
- Comment on "Vortices induced in a jet by a subsonic cross flow." A. M. Thompson (AIAA J, TC) 364
- Reply by author to A. M. Thompson. N. A. Durando (AIAA J, TC) 365
- Comment on "Evolution of the laminar wake behind a flat plate and its upstream influence." A. F. Messiter and K. Stewartson (AIAA J, TC) 719
- Reply by author to A. F. Messiter and K. Stewartson. V. E. Denny (AIAA J, TC) 719
- Comment on "A unified analysis of gaseous jet penetration." E. E. Zukoski and F. W. Spaid (AIAA J, TC) 1134
- Reply by authors to E. E. Zukoski and F. W. Spaid. F. S. Billig, R. C. Orth, and M. Lasky (AIAA J, TC) 1134

Multiphase Flows

- Experimental flow studies of the colloid core reactor concept. B. N. Turman and Siegfried H. Hasinger (JSR, SYN) 723
- Mass loss from thin liquid-surface films exposed to re-entry heating and shear. John R. Schuster (JSR) 271

- Two-component vortex flow studies of the colloid core nuclear rocket. Loren A. Anderson, Siegfried H. Hasinger, and B. N. Turman (JSR) 311
- A small, fast-response probe to measure composition of a binary gas mixture. G. L. Brown and M. R. Rebollo (AIAA J) 649
- Dust collection efficiency for power law bodies in hypersonic flight. Joseph H. Spurk and Nathan Gerber (AIAA J) 755
- Condensed zinc particle size determined by a time discrete sampling apparatus. Donald D. McBride and Pauline M. Sherman (AIAA J) 1058
- Raindrop breakup in the shock layer of a high-speed vehicle. George D. Waldman, William G. Reinecke, and Donald C. Glenn (AIAA J) 1200
- Propellant flow rate through simulated liquid-core nuclear rocket fuel bed. James P. McGuirk and Chul Park (JSR, EN) 375
- Acceleration of a spherical particle in a uniform gas flow. M. D. High, E. J. Felderman, and H. F. Lewis (JSR, EN) 377
- Motion of bubbles in a rotating container. Ivan Catton and S. H. Schwartz (JSR, EN) 468
- Detection of crystals in CO₂ jet plumes. Alfred E. Beylich (JSR, EN) 616
- Particle charging behind shock waves in suspensions. B. M. Shirley, J. W. Sheldon, and S. C. Kranc (AIAA J, TN) 1110

Nonsteady Aerodynamics

- Oscillating slender cone in viscous hypersonic flow. Kazimierz J. Orlik-Rückemann (AIAA J, SYN) 1139
- Launch vehicle gust penetration loads. L. E. Ericsson, J. P. Reding, and R. A. Guenther (JSR) 19
- A refined prediction method for the unsteady aerodynamics of supersonic elastic aircraft. Jack Morito Ii (JA) 61
- Refinement of the nonplanar aspects of the subsonic doublet-lattice lifting surface method. W. P. Rodden, J. P. Giesing, and T. P. Kalman (JA) 69
- Further developments in consistent unsteady supersonic aerodynamic coefficients. Kariappa and G. C. C. Smith (JA) 157
- Aerodynamic analysis of tube vehicle systems. Andrew G. Hammitt (AIAA J) 282
- Quasi-static moment measurements for airfoils in an annular cascade. F. Sista and R. H. Ni (JA) 298
- Effect on slender vehicle dynamics of change from spherical to conical nose bluntness. Lars E. Ericsson and Rolf A. Guenther (JSR) 435
- Analysis of supersonic-hypersonic flutter of lifting surfaces at angle of attack. E. Carson Yates Jr. and Robert M. Bennett (JA) 481
- Dynamic support interference. J. Peter Reding and Lars E. Ericsson (JSR) 547
- Developments of a generalized theory of jet noise. S. Paul Pao (AIAA J) 596
- Analysis and correlation of data on pressure fluctuations in separated flow. Dennis G. Mabey (JA) 642
- Subsonic steady and oscillatory aerodynamics for multiple interfering wings and bodies. J. P. Giesing, T. P. Kálmán, and W. P. Rodden (JA) 693
- Effect of streamwise vortices on wake properties associated with sound generation. Arnold M. Kuethe (JA) 715
- Supersonic flow over convex and concave shapes with radiation and ablation effects. Ihor O. Bohachevsky and Ronald N. Kostoff (AIAA J) 1024
- Nonlinear aerodynamics of bodies in coning motion. Lewis B. Schiff (AIAA J) 1517
- Boundary-layer separation on rotating blades in forward flight. Warren H. Young Jr. and James C. Williams (AIAA J) 1613
- Finite-difference calculations for two-dimensional unsteady expanding flows. Tomiko Ishiguro (AIAA J, TN) 217
- Angle of attack increase of an airfoil in decelerating flow. T. Strand (JA, EN) 506
- Parameters influencing dynamic stability characteristics of Viking-type entry configurations at Mach 1.76. Charles H. Whitlock and Paul M. Siemers III (JSR, EN) 558
- Influence of splitter plate on galloping response of an angle section. J. E. Slater and V. J. Modi (AIAA J, TN) 838
- Pressure distribution on a yawed wedge interacted by an oblique shock. M. G. Chopra (AIAA J, TN) 940
- Panel-flutter analysis of a thermal protection-shield concept for the space shuttle. Herbert J. Cunningham (AIAA J, TN) 1101
- Prediction of nose shape effects on nonlinear stability characteristics of slender cones. Lars E. Ericsson and Rolf A. Guenther (AIAA J, TN) 1111
- Simplified conservation laws for finite-difference computations. Bruce Masson (AIAA J, TN) 1125
- Aerodynamic generalized forces for supersonic shell flutter. S. Parthan and D. J. Johns (AIAA J, TN) 1369
- Stability of rotating stratified fluids. Sheridan C. Johnston (AIAA J, TN) 1372
- Turbulent gas mixing measurements using a laser Schlieren technique. Sheridan C. Johnston (AIAA J, TN) 1550
- Spherical and cylindrical gaseous expansions into a vacuum. Maurice L. Rasmussen and Karen L. Frair (AIAA J, TN) 1712

Nozzle and Channel Flow

- Fully ionized quasi-one-dimensional magnetic nozzle flow. Donald L. Chubb (AIAA J, SYN) 113
- Some aspects of gaseous secondary injection with application to thrust vector control. R. D. Guhse and H. Doyle Thompson (JSR, SYN) 291
- Feasibility of increasing specific impulse of supersonic nozzles by lithium condensation. D. J. Roehling, T. F. Stratton, and D. B. Fradkin (JSR, SYN) 725
- Pressure-gradient effects on hypersonic turbulent skin-friction and boundary-layer profiles. Edward J. Hopkins and Earl R. Keener (AIAA J, SYN) 1141
- Electrofluid dynamic augmented wind tunnel. Frank L. Wattendorf and Elmer G. Johnson (AIAA J, SYN) 1559
- Generation of ultra-high total enthalpy gases through multicomponent flow techniques. Elmer G. Johnson and Hans J. P. von Ohain (AIAA J, SYN) 1561
- Supersonic annular nozzles. David Migdal (JSR) 3
- Gain and power of CO₂ gasdynamic lasers. George Lee, Forrest E. Gowen, and Jack R. Hagen (AIAA J) 65
- Some storage and shear history effects on polymeric friction reduction. A. T. Ellis, R. Y. Ting, and R. H. Nadolink (JH) 66
- Low-area ratio, thrust-augmenting ejectors. Richard B. Fancher (JA) 243
- Aerodynamic analysis of tube vehicle systems. Andrew G. Hammitt (AIAA J) 282
- Atomization and mixing characteristics of gas/liquid coaxial injector elements. R. J. Burick (JSR) 326
- Experimental gas dynamic laser studies. Richard A. Meinzer (AIAA J) 388
- Influence of contraction section shape and inlet flow direction on supersonic nozzle flow and performance. Lloyd H. Back, Robert F. Cuffel, and Paul F. Massier (JSR) 420
- Determination of internal gas flows by a transient numerical technique. Raymond A. Serra (AIAA J) 603
- Forward-speed effects on peripheral-jet ground support systems. George C. Cooke and Robert E. Duffy (JA) 675
- External heat-transfer distribution on film cooled turbine vanes. Richard D. Lander, Robert W. Fish, and Mikio Suo (JA) 707
- Viscous effects on biowaste resistojet nozzle performance. James M. Kallis, Milton Goodman, and Carl R. Halbach (JSR) 869
- Nozzle wall boundary layers at Mach numbers 20 to 47. Joseph H. Kemp Jr. and F. K. Owen (AIAA J) 872
- Comparison of characteristic schemes for three-dimensional, steady, isentropic flow. Michael C. Cline and Joe D. Hoffman (AIAA J) 1452
- Rapid expansion nozzles for gas dynamic lasers. R. A. Greenberg, A. M. Schneiderman, D. R. Ahouse, and E. M. Parmentier (AIAA J) 1494
- A second-order bicharacteristics method for three-dimensional, steady, supersonic flow. Victor H. Ransom, Joe D. Hoffman, and H. Doyle Thompson (AIAA J) 1573
- Turbulent coaxial jet mixing in a constant area duct. H. J. Brandon (JA, EN) 188
- Compressibility correction for internal flow solutions. S. Lieblein and N. O. Stockman (JA, EN) 312
- Capture area ratio effect on a propagating shock. Dennis M. Zallen and Philip P. Truax (AIAA J, TN) 341
- A simple Eddy viscosity model for turbulent pipe and channel flow. Joseph Mei and William Squire (AIAA J, TN) 350
- Acceleration of a spherical particle in a uniform gas flow. M. D. High, E. J. Felderman, and H. F. Lewis (JSR, EN) 377
- Subsonic, transonic, and supersonic nozzle flow by the inverse technique. David J. Norton (JSR, EN) 457
- Effect of nozzle throat radius of curvature on gasdynamic laser gain. Jerry L. Wagner and John D. Anderson Jr. (JSR, EN) 471
- Effects of heat addition in divergent nozzles with application to MPD thrusters. M. Sajben and G. E. Chmielewski (JSR, EN) 476
- Population inversion of atomic carbon in recombining plasma flow. S. W. Bowen and C. Park (AIAA J, TN) 522
- Calculations of the turbulent boundary layer in supersonic nozzles. E. R. Bergstrom and S. Raghunathan (AIAA J, TN) 936
- Boundary-layer effects on pressure variations in Ludwig tubes. Eckart Piltz (AIAA J, TN) 1095
- Improving diffuser performance by artificial means. V. Kr. Sháran (AIAA J, TN) 1105
- Maximum thrust nozzles. William E. Conway and Aivars Celmiņš (AIAA J, TN) 1241
- Improved flexible supersonic wind-tunnel nozzle operated by a single jack. J. Rom and I. Etsion (AIAA J, TN) 1697

Plasma Dynamics and MHD

- Thermochemical nonequilibrium in an argon constricted arc plasma. K. J. Clark and F. P. Incropera (AIAA J, SYN) 17
- Fully ionized quasi-one-dimensional magnetic nozzle flow. Donald L. Chubb (AIAA J, SYN) 113
- Some experimental observations on circulating currents in a crossed field plasma accelerator. J. Jedlicka and J. Haacker (AIAA J, SYN) 563

- An investigation of nonequilibrium effects in an argon freejet plasma. Philip E. Cassady and Lester Lees (AIAA J, SYN) 855
- End loop shorting in nonequilibrium MHD generators. R. Decher (AIAA J, SYN) 983
- Electron number density and temperature in MPD-arc thruster exhausts. Charles J. Michels, James R. Rose, and Donald R. Sigman (AIAA J, SYN) 1395
- Arc driver operation for either efficient energy transfer or high-current generation. Robert E. Dannenberg and Anthony F. Silva (AIAA J, SYN) 1563
- Cross-flow blowing of a two-dimensional stationary arc. T. K. Bose (AIAA J) 80
- Anode phenomena in high-current accelerators. Ronald C. Oberth and Robert G. Jahn (AIAA J) 86
- Turbulent MHD boundary layers with electron thermal nonequilibrium and finite rate ionization. M. D. High and E. J. Felderman (AIAA J) 98
- Transient performance of negatively biased Langmuir probes. C. H. Shih and E. Levi (AIAA J) 104
- Heat pipe calorimetry for plasma stagnation-point heat transfer. M. M. Abu-Romia and B. Bhatia (AIAA J) 313
- Potential of nuclear MHD electric power systems. George R. Seikel and Lester D. Nichols (JSR) 322
- Nuclear pumped gas lasers. Karlheinz Thom and Richard T. Schneider (AIAA J) 400
- Analysis of an electric discharge CO₂ mixing laser. H. A. Hassan and J. W. Bordeaux (AIAA J) 414
- Negatively charged conical electrostatic probes in a supersonic flow. W. E. Scharfman and A. G. Hammitt (AIAA J) 434
- Theory of ion boundary layers. Ronald A. Johnson and P. C. T. de Boer (AIAA J) 664
- Electron density fluctuation measurements in projectile wakes. Jay Fox and Harald Rungaldier (AIAA J) 790
- System tradeoffs for pulsed MPD thruster in space mission application. Hwachii Lien (JSR) 858
- Effect of angle of incidence on the response of cylindrical electrostatic probes at supersonic speeds. Antoni K. Jakubowski (AIAA J) 988
- Use of positively biased electrostatic probes to obtain electron density in collisionless flows. Michael G. Dunn (AIAA J) 996
- End effects in Faraday type MHD generators with nonequilibrium plasmas. Jan W. M. A. Houben, Jan H. Blom, and Leo H. Th. Rietjens (AIAA J) 1513
- Numerical calculations for the turbulent arc constrictor. William W. Bower and Frank P. Incropera (AIAA J) 1662
- Experimental and numerical studies of flush electrostatic probes in hypersonic ionized flows: I. Experiment. D. W. Boyer and K. J. Touryan (AIAA J) 1667
- Experimental and numerical studies of flush electrostatic probes in hypersonic ionized flows: II. Theory. A. J. Russo and K. J. Touryan (AIAA J) 1675
- Electrophilic property of uranium hexafluoride. J. C. Wu, J. R. Williams, J. C. Handley, and B. P. Cooper (JSR, EN) 614
- Current drainage to a high voltage probe in a dilute plasma. Norman T. Grier and Daniel J. McKinzie Jr. (JSR, EN) 706
- Shock tube boundary layers in ionized argon-helium mixtures. Nelson A. Macken, Arthur L. Besse, and Morton A. Levine (AIAA J, TN) 1129
- Magnetically balanced cross-flow arcs. Vaman R. Malghan and David M. Benenson (AIAA J, TN) 1347
- Comments on "Symptomatic behavior of an electric arc with superimposed flow." O. I. Yasko (AIAA J, TC) 1135
- Reply by authors to O. I. Yasko. S. A. Wutzke, E. Pfender, and E. R. G. Eckert (AIAA J, TC) 1136

Radiatively Coupled Flows and Heat Transfer

- Flame-sheet analysis of C. W. diffusion-type chemical lasers, I. Uncoupled radiation. R. Hofland and H. Mirels (AIAA J) 420
- Flame-sheet analysis of C. W. diffusion-type chemical lasers, II. Coupled radiation. R. Hofland and H. Mirels (AIAA J) 1271
- Supersonic flow over convex and concave shapes with radiation and ablation effects. Ihor O. Bohachevsky and Ronald N. Kostoff (AIAA J) 1024
- Numerical study of a diffusion-type chemical laser. William S. King and Harold Mirels (AIAA J) 1647
- Radiative cooling and nonequilibrium chemistry coupling behind normal shock waves. Leland A. Carlson (AIAA J, TN) 230
- Artificial viscosity methods for blunt body flowfield analysis with thermal radiation. James O. Nichols (AIAA J, TN) 836
- Influence of a temperature dependent spectral absorption coefficient on radiative flux. H. F. Nelson, C. Y. Wang, and A. L. Crosbie (AIAA J, TN) 1254
- Radiative and convective heating during Venus entry. William A. Page and Hentry T. Woodward (AIAA J, TN) 1379
- Lateral expansion of a laser-supported detonation wave in a gas. John T. Howe (AIAA J, TN) 1710

Rarefied Flows

- Hypersonic low-density cone drag. A. G. Keel Jr., L. G. Kraige, R. D. Passmore, and R. N. Zapata (AIAA J, SYN) 561
- Nonlinear heat conductions in rarefied gases. Y. S. Lou and T. K. Shih (AIAA J, SYN) 1149
- Rarefaction effects in high-altitude rocket plumes. Girard A. Simons (AIAA J) 296
- Mass spectrometric analysis of nonequilibrium airflows. William N. MacDermott and Richard E. Dix (AIAA J) 494
- Rarefied hypersonic flow characteristics of delta wing and trailing edge spoilers. Jean Allegre, Didier Lartigue, and Marie-Francoise Scibilia (AIAA J) 900
- Use of positively biased electrostatic probes to obtain electron density in collisionless flows. Michael G. Dunn (AIAA J) 996
- Improved procedures for determining surface pressures in low-density hypersonic flow. Jerome A. Smith and John H. Lewis (AIAA J) 1183
- Sphere drag coefficients for a broad range of Mach and Reynolds numbers. A. B. Bailey and J. Hiatt (AIAA J) 1436
- Variational solutions by the use of stepwise constant functions: I. Linear case. K. K. Yoshikawa (AIAA J, TN) 343
- General response of resistance thermometers and thermocouples in gases at low pressures. M. R. Davis (AIAA J, TN) 546
- Free molecular flow over a rotating sphere. Chong-Tsun Wang (AIAA J, TN) 713
- Observation of ultraviolet radiation from a rocket exhaust plume at high altitudes. A. W. Mantz, J. J. Lange, E. S. Fishbourne, D. C. Moyer, and C. R. Waters (AIAA J, TN) 1132
- A cryogenic impact probe for hypersonic low-density flows. T. E. Chamberlain (AIAA J, TN) 1376
- Heat transfer from a circular cylinder in a rarefied gas stream. Yasuhiko Aihara and Hisao Koyama (AIAA J, TN) 1386
- Spherical and cylindrical gaseous expansions into a vacuum. Maurice L. Rasmussen and Karen L. Frair (AIAA J, TN) 1712

Reactive Flows

- Theory and experiment of electric discharge CO₂ convection lasers. Robert K. Seals Jr., Frank Allario, Roy A. Lucht, and H. A. Hassan (AIAA J, SYN) 369
- Time-dependent solutions of nonequilibrium airflow past a blunt body. C. P. Li (JSR, SYN) 571
- Feasibility of increasing specific impulse of supersonic nozzles by lithium condensation. D. J. Roehling, T. F. Stratton, and D. B. Fradkin (JSR, SYN) 725
- Erosion of graphite surface exposed to high-temperature supersonic hydrogen gas. Om P. Sharma (JSR, SYN) 785
- Boron particle nonequilibrium effects in combustor ducted flows. L. Douglas Smoot and Gregory S. Anderson (AIAA J, SYN) 857
- Hydrogen generation by means of the aluminum/water reaction. I. E. Smith (JH) 106
- Photon generators and engines for laser power transmission. Abraham Hertzberg, Walter H. Christiansen, Earl W. Johnston, and Harlow G. Ahlstrom (AIAA J) 394
- Mass spectrometric analysis of nonequilibrium airflows. William N. MacDermott and Richard E. Dix (AIAA J) 494
- Electron density fluctuation measurements in projectile wakes. Jay Fox and Harald Rungaldier (AIAA J) 790
- An analytical model for nitric oxide formation in a gas turbine combustor. Richard Roberts, Leonard D. Aceto, Reiner Kollrack, Donald P. Teixeira, and John M. Bonnell (AIAA J) 820
- Nonsimilar solution for laminar and turbulent boundary-layer flows over ablating surfaces. Robert M. Kendall, Larry W. Anderson, and Ronald H. Aungier (AIAA J) 1230
- Three-dimensional effects on electron density in a blunt body laminar boundary layer. C. B. Watkins and F. G. Blottner (AIAA J) 1332
- Dynamic response of a plane-symmetrical exothermic reaction center. J. W. Meyer and A. K. Oppenheim (AIAA J) 1509
- Numerical study of a diffusion-type chemical laser. William S. King and Harold Mirels (AIAA J) 1647
- Simple waves in one-dimensional unsteady nonequilibrium dissociative gas dynamics. Rama Shankar (AIAA J, TN) 513
- Calculated pulsating one-dimensional detonations with induction-zone kinetics. W. Fickett, J. D. Jacobson, and G. L. Schott (AIAA J, TN) 514
- Two-dimensional model for thermal compression. F. S. Billig (JSR, EN) 702
- Instability of hypersonic viscous shock layer with finite rate chemistry. Narendra P. Reddy (AIAA J, TN) 1122
- Hypersonic, viscous shock layer with chemical non-equilibrium for spherically blunted cones. Sang-Wook Kang and Michael G. Dunn (AIAA J, TN) 1361
- Comments on "Dynamics of an explosive reaction center." Andrzej Wortman (AIAA J, TC) 846
- Reply by authors to A. Wortman. A. K. Oppenheim and L. J. Zajac (AIAA J, TC) 847

Shock Waves and Detonations

- Decomposition, pyrolysis, and deflagration of pure and isomorphously doped ammonium perchlorate. T. L. Boggs, K. J. Kraeutle, and D. E. Zurn (AIAA J, SYN) 15
- An immersion-type electrical conductivity probe for anisotropic plasmas. Elie J. Stubbe (AIAA J) 92
- Shock-tube study of nitrogen dissociation rates using pressure measurements. Ronald K. Hanson and Donald Baganoff (AIAA J) 211
- Material phase transformation effects upon performance of spaced bumper systems. A. K. Hopkins, T. W. Lee, and H. F. Swift (JSR) 342
- Effect of SST operation maneuvers on sonic boom. George T. Haglund and Edward J. Kane (JA) 563
- Ionization behind shock waves in nitrogen-oxygen mixtures. J. H. Schäfer and A. Frohn (AIAA J) 985
- Some evidence of contact surface instability in a high-enthalpy shock tunnel. M. K. McIntosh (AIAA J, TN) 236
- Laminar thermal boundary layers on continuous surfaces. C. A. Rhodes and H. Kaminer Jr. (AIAA J, TN) 331
- Capture area ratio effect on a propagating shock. Dennis M. Zallen and Philip P. Truax (AIAA J, TN) 341
- Calculated pulsating one-dimensional detonations with induction-zone kinetics. W. Fickett, J. D. Jacobson, and G. L. Schott (AIAA J, TN) 514
- Two-dimensional model for thermal compression. F. S. Billig (JSR, EN) 702
- Study of 8–15 km/sec shock waves using conventional shock tubes. J.-C. Leboucher, M. Pinegre, and P. Valentin (AIAA J, TN) 703
- Shock wave shaping. B. W. Skews (AIAA J, TN) 839
- Pressure distribution on a yawed wedge interacted by an oblique shock. M. G. Chopra (AIAA J, TN) 940
- Reflection of weak shock waves from permeable materials. G. S. Beavers and R. K. Matta (AIAA J, TN) 959
- Shock tube boundary layers in ionized argon-helium mixtures. Nelson A. Macken, Arthur L. Besse, and Morton A. Levine (AIAA J, TN) 1129
- Mach reflection from overexpanded nozzle flows. W. L. Chow and I. S. Chang (AIAA J, TN) 1261
- Variable energy blast waves. Eli K. Dabora (AIAA J, TN) 1384
- Lateral expansion of a laser-supported detonation wave in a gas. John T. Howe (AIAA J, TN) 1710
- Spherical and cylindrical gaseous expansions into a vacuum. Maurice L. Rasmussen and Karen L. Frair (AIAA J, TN) 1712
- Supersonic flow past large-angle pointed cones. Prabhakara P. Rao (AIAA J, TN) 1713
- Oblique shock-sound interaction at $M_\infty \approx 20$ in helium. Leonard M. Weinstein (AIAA J, TN) 1718

Subsonic and Transonic Flow

- Model support effects on aerodynamic and wake characteristics of large angle cones. Melvin M. Carmel and Clarence A. Brown Jr. (JA, SYN) 99
- Transonic region of a supersonic boundary layer turning a sharp corner. B. D. Fishburn and T. C. Adamson Jr. (AIAA J, SYN) 123
- A general theory of parachute opening. Edward W. Ross Jr. (JA, SYN) 257
- Side forces on ogive-cylinder bodies at high angles of attack in transonic flow. George S. Pick (JSR, SYN) 389
- Transonic flow about two-dimensional airfoils by relaxation procedures. J. L. Steger and H. Lomax (AIAA J) 49
- Theoretical investigation of the aerodynamic characteristics of all-flexible parawings. S. B. Spangler and J. N. Nielsen (A/A, April*) 60
- *See Note on page 3
- Refinement of the nonplanar aspects of the subsonic doublet-lattice lifting surface method. W. P. Rodden, J. P. Giesing, and T. P. Kalman (JA) 69
- Aerodynamic analysis of tube vehicle systems. Andrew G. Hammitt (AIAA J) 282
- Nonlinear vortex interactions on wing-canard configurations. David Finkleman (JA) 399
- Determination of internal gas flows by a transient numerical technique. Raymond A. Serra (AIAA J) 603
- An improved solution of the two-dimensional jet-flapped airfoil problem. Richard G. Leamon and Allen Plotkin (JA) 631
- Subsonic and supersonic boundary-layer flow past a wavy wall. G. R. Inger and E. P. Williams (AIAA J) 636
- Negative Magnus forces in the critical Reynolds number regime. Clive A. J. Fletcher (JA) 826
- A theoretical method for the analysis and design of multielement airfoils. J. G. Callaghan and T. D. Beatty (JA) 844
- Computation of transonic flows past lifting airfoils and slender bodies. J. A. Krupp and E. M. Murman (AIAA J) 880
- Turbulence structure parameters in an inhomogeneous strain field. P. A. C. Okwuobi, R. S. Azad, and O. Hawaleshka (AIAA J) 1414
- Sphere drag coefficients for a broad range of Mach and Reynolds numbers. A. B. Bailey and J. Hiatt (AIAA J) 1436

- Rapid expansion nozzles for gas dynamic lasers. R. A. Greenberg, A. M. Schneiderman, D. R. Ahouse, and E. M. Parmentier (AIAA J) 1494
- Subsonic and transonic potential flow over helicopter rotor blades. Francis X. Caradonna and Morris P. Isom (AIAA J) 1606
- Turbulent coaxial jet mixing in a constant area duct. H. J. Brandon (JA, EN) 188
- Response of a trailing vortex to axial injection into the core. H. L. Kantha, W. S. Lewellen, and F. H. Durgin (JA, EN) 254
- Internal parachute flows. Paul C. Kimas (JA, EN) 313
- Subsonic, transonic, and supersonic nozzle flow by the inverse technique. David J. Norton (JSR, EN) 457
- Angle of attack increase of an airfoil in decelerating flow. T. Strand (JA, EN) 506
- Wind-tunnel wall interference reduction by streamwise porosity distribution. Ching-Fang Lo (AIAA J, TN) 547
- Comment on "Wind-tunnel interference reduction by streamwise porosity distribution." M. Mokry (AIAA J, TC) 1727
- Reply by author to M. Mokry. C. F. Lo (AIAA J, TC) 1727
- Computation of transonic flow about finite lifting wings. P. A. Newman and E. B. Klunker (AIAA J, TN) 971
- Simplified conservation laws for finite-difference computations. Bruce Masson (AIAA J, TN) 1125
- A correction to "Lifting-line theory as a singular perturbation problem." Keith P. Kerney (AIAA J, TN) 1683
- Transonic nozzle flow with a parabolic temperature distribution. Stanton Boraas (AIAA J, TN) 1720
- Comment on "Vortices induced in a jet by subsonic cross flow." A. M. Thompson (AIAA J, TC) 364
- Reply by author to A. M. Thompson. N. A. Durando (AIAA J, TC) 365
- Comments on "Convergence proof of discrete-panel wing loading theories." R. M. James (JA, TC) 383
- Reply by author to R. M. James. J. DeYoung (JA, TC) 384
- Comment on "Convergence proof of discrete-panel wing loading theories." William P. Rodden (JA, TC) 686
- Reply by author to W. P. Rodden. J. DeYoung (JA, TC) 688

Supersonic and Hypersonic Flow

- Blunt cones at angle of attack in supersonic nonuniform freestreams. Clark H. Lewis and Roie R. Black (JSR, SYN) 561
- Time-dependent solutions of nonequilibrium airflow past a blunt body. C. P. Li (JSR, SYN) 571
- Pressure-gradient effects on hypersonic turbulent skin-friction and boundary-layer profiles. Edward J. Hopkins and Earl R. Keener (AIAA J, SYN) 1141
- Hypersonic turbulent boundary layer with pressure gradients and cross flow. Victor Zakkay, Wladimiro Calarese, and Chi Rong Wang (AIAA J, SYN) 1393
- Electrofluid dynamic augmented wind tunnel. Frank L. Wattendorf and Elmer G. Johnson (AIAA J, SYN) 1559
- Generation of ultra-high total enthalpy gases through multicomponent flow techniques. Elmer G. Johnson and Hans J. P. von Ohain (AIAA J, SYN) 1561
- Hypersonic turbulent skin-friction and boundary-layer profiles on nonadiabatic flat plates. Edward J. Hopkins, Earl R. Keener, Thomas E. Polek, and Harry A. Dwyer (AIAA J) 40
- Minimum-energy hypersonic nose and leading-edge shapes. Roger J. Furey (JSR) 107
- Further developments in consistent unsteady supersonic aerodynamic coefficients. Kariappa and G. C. C. Smith (JA) 157
- Newtonian lift and drag of blunt-cone cylinder bodies. J. Pike (AIAA J) 176
- Effects of mass transfer on hypersonic turbulent boundary-layer properties. Anthony Martellucci (AIAA J) 181
- Beam-continuum model for hypersonic flow over a flat plate. S. C. Kot and D. L. Turcotte (AIAA J) 291
- Characteristics of multitube multishroud supersonic jet noise suppressor. H. T. Nagamatsu, R. E. Sheer Jr., and M. S. Gill (AIAA J) 307
- Flowfield measurements using a total temperature probe at hypersonic speeds. Irwin E. Vas (AIAA J) 317
- Effect on slender vehicle dynamics of change from spherical to conical nose bluntness. Lars E. Ericsson and Rolf A. Guenther (JSR) 435
- Turbulent flow studies in two arc-heated duct facilities. M. Alan Covington and Nick S. Vojvodich (JSR) 441
- Supersonic turbulent boundary layer in adverse pressure gradient. Part I: The experiment. Walter B. Sturek and James E. Danberg (AIAA J) 475
- Analysis of supersonic-hypersonic flutter of lifting surfaces at angle of attack. E. Carson Yates Jr. and Robert M. Bennett (JA) 481
- Closed form solution for the sonic boom in a polytropic atmosphere. R. Stuff (JA) 556
- Investigation of a supersonic surface jet—hypersonic flow interaction with axial symmetry. Raymond P. Shreeve, Gordon C. Oates, and Harlow G. Ahlstrom (AIAA J) 589
- Numerical method for hypersonic internal flow over blunt leading edges and two blunt bodies. Norbert D'Souza, Sannu Molder, and Gino Moretti (AIAA J) 617

- Supersonic turbulent boundary layer in adverse pressure gradient. Part II: Data analysis. Walter B. Sturek and James E. Danberg (AIAA J) 630
- Boundary-layer separation on slender cones at angle of attack. Kenneth F. Stetson (AIAA J) 642
- Supersonic interaction in the corner of intersecting wedges at high Reynolds numbers. John E. West and Robert H. Korkegi (AIAA J) 652
- Decay of boundary-layer turbulence in near wake of a slender body. Anthony N. Pirri (AIAA J) 657
- Sonic-boom wind-tunnel testing techniques at high Mach numbers. Odell A. Morris and David S. Miller (JA) 664
- Dust collection efficiency for power law bodies in hypersonic flight. Joseph H. Spurk and Nathan Gerber (AIAA J) 755
- Observations of hypersonic boundary-layer transition using hot wire anemometry. John E. LaGraff (AIAA J) 762
- Hypersonic transitional boundary layers. F. K. Owen and C. C. Horstman (AIAA J) 769
- Nozzle wall boundary layers at Mach numbers 20 to 47. Joseph H. Kemp Jr. and F. K. Owen (AIAA J) 872
- Numerical solution for three-dimensional inviscid supersonic flow. P. D. Thomas, M. Vinokur, R. A. Bastianon, and R. J. Conti (AIAA J) 887
- Rarefied hypersonic flow characteristics of delta wing and trailing edge spoilers. Jean Allegre, Difier Lartigue, and Marie-Francoise Scibilia (AIAA J) 900
- Supersonic flow over convex and concave shapes with radiation and ablation effects. Ihor O. Bohachevsky and Ronald N. Kostoff (AIAA J) 1024
- Hypersonic leading edge problem: Wedges and cones. Michael L. Shorenstein (AIAA J) 1173
- Improved procedures for determining surface pressures in low-density hypersonic flow. Jerome A. Smith and John H. Lewis (AIAA J) 1183
- Film-cooling effectiveness and skin friction in hypersonic turbulent flow. Aubrey M. Cary Jr. and Jerry N. Hefner (AIAA J) 1188
- Transition and hot-wire measurements in hypersonic helium flow. M. C. Fischer and R. D. Wagner (AIAA J) 1326
- A method for wind-tunnel investigation of sonic booms. Y. S. Pan and K. T. Wang (AIAA J) 1408
- Turbulent properties of a compressible boundary layer. C. C. Horstman and F. K. Owen (AIAA J) 1418
- Sphere drag coefficients for a broad range of Mach and Reynolds numbers. A. B. Bailey and J. Hiatt (AIAA J) 1436
- Shock interference heating in hypersonic flows. Frank D. Hains and J. Wayne Keyes (AIAA J) 1441
- Comparison of characteristic schemes for three-dimensional, steady, isentropic flow. Michael C. Cline and Joe D. Hoffman (AIAA J) 1452
- Lee-side vortices on Delta wings at hypersonic speeds. Dhanvada M. Rao and A. H. Whitehead Jr. (AIAA J) 1458
- Nonlinear aerodynamics of bodies in coning motion. Lewis B. Schiff (AIAA J) 1517
- A second-order bicharacteristics method for three-dimensional, steady, supersonic flow. Victor H. Ransom, Joe D. Hoffman, and H. Doyle Thompson (AIAA J) 1573
- An experimental study of hypersonic wakes behind wedges at angle of attack. Jiunn-Jenq Wu and Wilhelm Behrens (AIAA J) 1582
- Experimental and numerical studies of flush electrostatic probes in hypersonic ionized flows: I. Experiment. D. W. Boyer and K. J. Touryan (AIAA J) 1667
- Conical nose shape effects on drag and static stability at Mach 10. Robert S. Neff (JSR, EN) 126
- A pressure formula for an inclined circular cone in supersonic flow, $\gamma = 1.4$. D. J. Jones (AIAA J, TN) 234
- Shock-wave, turbulent boundary-layer interaction on a blunted compression surface. William C. Rose, Helmer L. Nielsen, and Earl C. Watson (JSR, EN) 278
- Prediction of turbulent boundary-layer separation influenced by blowing. Arnold Polak (AIAA J, TN) 538
- Effects of transverse outflow from a hypersonic separated region. Allen H. Whitehead Jr., James R. Sterrett, and James C. Emery (AIAA J, TN) 553
- Correlations of peak heating in shock interference regions at hypersonic speeds. J. Wayne Keyes and Dana J. Morris (JSR, EN) 621
- Transition in compressible free shear layers. Stanley F. Birch and J. Wayne Keyes (JSR, EN) 623
- Cross-hatching as an aeroviscoelastic problem. Earl H. Dowell (AIAA J, TN) 701
- Study of 8-15 km/sec shock waves using conventional shock tubes. J.-C. Leboucher, M. Pinegre, and P. Valentin (AIAA J, TN) 703
- Fast solution to supersonic plane flat-faced blunt body. R. D. Archer (AIAA J, TN) 707
- Evaluation of windward streamline effective cone boundary-layer analyses. John C. Adams Jr. (JSR, EN) 718
- Calculations of the turbulent boundary layer in supersonic nozzles. E. R. Bergstrom and S. Raghunathan (AIAA J, TN) 936
- Pressure distribution on a yawed wedge interacted by an oblique shock. M. G. Chopra (AIAA J, TN) 940
- Unified area rule for hypersonic and supersonic wing-bodies. W. H. Hui (AIAA J, TN) 961
- Hypersonic viscous, slip flow over insulated wedges. Ajay Kumar and A. C. Jain (AIAA J, TN) 1081
- Proper equations and similar approximations in the hypersonic merged layer. Mohamed Nabih Wagdi (AIAA J, TN) 1097
- Prediction of nose shape effects on nonlinear stability characteristics of slender cones. Lars E. Ericsson and Rolf A. Guenther (AIAA J, TN) 1111
- Aerodynamics of a slender cone with asymmetric nose bluntness at Mach 14. Otto Walchner, Frank M. Sawyer, and Kevin E. Yelmgren (AIAA J, TN) 1121
- Average circumferential pressure on inclined bodies of revolution at hypersonic speed. M. D. Bennett and G. E. Barr (AIAA J, TN) 1248
- Measurements of skin friction on the wall of a hypersonic nozzle. William D. Harvey and Frank L. Clark (AIAA J, TN) 1256
- Aerodynamic characteristics of two-dimensional waverider configurations. C. T. Nardo (AIAA J, TN) 1258
- Mach reflection from overexpanded nozzle flows. W. L. Chow and I. S. Chang (AIAA J, TN) 1261
- Roughness-induced boundary-layer transition on blunt bodies. Rudolph J. Swigart (AIAA J, TN) 1355
- Hypersonic, viscous shock layer with chemical nonequilibrium for spherically blunted cones. Sang-Wook Kang and Michael G. Dunn (AIAA J, TN) 1361
- Viscous analysis of a slip surface. Wilbur L. Hankey (AIAA J, TN) 1363
- Low Reynolds number flow past a transverse cylinder at Mach two. Clarence W. Kitchens Jr. and Clarence C. Bush (AIAA J, TN) 1381
- Role of the anelastic behavior of the ablation material on cross-hatching. Hans W. Stock (AIAA J, TN) 1528
- Aerodynamic noise and boundary-layer transition measurements in supersonic test facilities. E. R. Bergstrom and S. Raghunathan (AIAA J, TN) 1531
- Plateau pressure in hypersonic turbulent boundary-layer interactions. Barry L. Reeves (AIAA J, TN) 1546
- A new algorithm for three-dimensional method of characteristics. Chong-Wei Chu (AIAA J, TN) 1548
- Base pressure distribution of a cone at hypersonic speeds. George S. Pick (AIAA J, TN) 1685
- Schlieren visualization of the hypersonic entropy wake. Hartmut Giesbrecht, Alois Stilp, and Wolfgang Merzkirch (AIAA J, TN) 1694
- Improved flexible supersonic wind-tunnel nozzle operated by a single jack. J. Rom and I. Etsion (AIAA J, TN) 1697
- Supersonic flow past large-angle pointed cones. Prabhakara P. Rao (AIAA J, TN) 1713
- Oblique shock-sound interaction at $M_\infty \approx 20$ in helium. Leonard M. Weinstein (AIAA J, TN) 1718
- Errata: "An analysis of plume-induced boundary-layer separation." Michael C. Fong (JSR, ERR) 480

Viscous Nonboundary-Layer Flows

- Wind-tunnel studies of wing wake turbulence. N. A. Chigier and V. R. Corsiglia (JA) 820
- Numerical solutions for laminar incompressible flow past a paraboloid of revolution. R. T. Davis and M. J. Werle (AIAA J) 1224
- Analysis of flow of viscous fluids by the finite-element method. J. Tinsley Oden and L. Carter Wellford Jr. (AIAA J) 1590
- Uncertainty in measurement of intermittency in turbulent free shear flows. Bailly V. Seshagiri and Gordon M. Bragg (AIAA J, TN) 542
- Transition in compressible free shear layers. Stanley F. Birch and J. Wayne Keyes (JSR, EN) 623
- Buoyancy effect on fuel containment in a gas-core nuclear rocket. Henry A. Putre (JSR, EN) 932
- Proper equations and similar approximations in the hypersonic merged layer. Mohamed Nabih Wagdi (AIAA J, TN) 1097
- Hypersonic, viscous shock layer with chemical nonequilibrium for spherically blunted cones. Sang-Wook Kang and Michael G. Dunn (AIAA J, TN) 1361
- Low Reynolds number flow past a transverse cylinder at Mach two. Clarence W. Kitchens Jr. and Clarence C. Bush (AIAA J, TN) 1381
- Errata: "Swirling nozzle flow equations from Crocco's relation." C. T. Hsu (AIAA J, ERR) 368

Wave Motion and Sloshing

- Review and application of prestressed shell theories to blood vessel wave propagation. J. A. Bailie (AIAA J, SYN) 1143

INTERDISCIPLINARY TOPICS

Aerospace Management

Aerospace Technology Utilization

- Modes of vibration in a circular plate with three simple support points. Changhui Chi (AIAA J) 142

- Air superiority with control configured fighters. R. B. Jenny, F. M. Krachmalnick, and S. A. LaFavor (JA) 370
 Overview of some problems in ground transportation. Sidney I. Gravitz (JA) 385
 Measurements of particulate pollutants in the atmosphere. Raymond L. Chuan (AIAA J, TN) 1701

Atmospheric, Space, and Oceanographic Sciences

- A study of wire-deploying devices designed to trigger lightning. Vernon J. Rossow, Harold G. Clements, and B. Pat Denardo (JSR, SYN) 631
 Structural development of bone in the rat under Earth gravity, hypergravity, and simulated weightlessness. John P. Jankovich and Karl O. Lange (AIAA J, SYN) 731
 Atmospheric transport, dispersion, and chemical reaction in air pollution: A review. Martin I. Hoffert (AIAA J, SA) 377
 —Errata: "Atmospheric transport, dispersion, and chemical reactions in air pollution: A Review. Martin I. Hoffert (AIAA J, TC) 1729
 A theoretical study of the generation of atmospheric-clear air turbulence. Coleman duP. Donaldson, Roger D. Sullivan, and Harold Rosenbaum (AIAA J) 162
 Sensing accuracy of a conical scan CO₂ horizon sensor. R. Weiss (JSR) 607
 Analytical model of the flash produced in aluminum-aluminum hypervelocity impacts. Kenneth E. Harwell, Kynric M. Pell, and T. Dwayne McCay (JSR) 682
 Modeling of the turbulence structure of the atmospheric surface layer. T. R. Sundaram, G. R. Ludwig, and G. T. Skinner (AIAA J) 743
 Three optical methods for remotely measuring aerosol size distributions. John A. Reagan and Benjamin M. Herman (AIAA J) 1401
 Lin parameter as characteristic of atmospheric vortex streets. Kuldip P. Chopra (AIAA J, TN) 345
 An interference spectrometer for the remote sensing of pollutants. Rudolf A. Schindler (JSR, EN) 714
 Eigenvalues and eigenvectors for solutions to the radiative transport equation. J. A. Roux, D. C. Todd, and A. M. Smith (AIAA J, TN) 973

Checkout Systems

Computer Technology and Computer Simulation Techniques

- Mathematical model of underwater simulation of astronaut extravehicular activities. Y. C. Pao (JSR, SYN) 229
 Pressurized crack behavior in two-dimensional rocket motor geometries. E. C. Francis, G. H. Lindsey, and R. R. Parmerter (JSR) 415
 A partial-step algorithm for the nonlinear estimation problem. Dale H. Boggs (AIAA J) 675
 A mixed optimization method for automated design of fuselage structures. Jaroslaw Sobieszcanski and David Loendorf (JA) 805
 On-line tracking of six orbital elements of a thrust maneuvering space vehicle. Kay Yong and Chi-Neng Shen (AIAA J) 813
 A modified gradient technique for solving boundary and initial value problems. Mohamed Nabih Wagdi (AIAA J, TN) 1091
 Simplified conservation laws for finite-difference computations. Bruce Masson (AIAA J, TN) 1125
 Calculation of metric coefficients for streamline coordinates. John V. Rakich and George G. Mateer (AIAA J, TN) 1538

Electric Power Generation Research

- Electrofluid dynamic generator. Theodore L. Willke (AIAA J, SYN) 115
 Multiphase nuclear fuel cavity reactor for power generation. B. Pinkel and E. C. Gritton (JSR, SYN) 721
 End loop shorting in nonequilibrium MHD generators. R. Decher (AIAA J, SYN) 983
 Potential of nuclear MHD electric power systems. George R. Seikel and Lester D. Nichols (JSR) 322

Law, History, Policy, and Sociology

Lasers

- Experimental gas dynamic laser studies. Richard A. Meinzer (AIAA J) 388
 Physics of CO₂ electric discharge lasers. R. H. Bullis, W. L. Nighan, M. C. Fowler, and W. J. Wiegand (AIAA J) 407
 Analysis of an electric discharge CO₂ mixing laser. H. A. Hassan and J. W. Bordeaux (AIAA J) 414
 Flame-sheet analysis of C. W. diffusion-type chemical lasers. I. Uncoupled radiation. R. Hofland and H. Mirels (AIAA J) 420
 —Flame-sheet analysis of C. W. diffusion-type chemical lasers. II. Coupled radiation. R. Hofland and H. Mirels (AIAA J) 1271
 Localized measurements of wake density fluctuations using pulsed laser holographic interferometry. A. B. Witte, J. Fox, and H. Rungaldier (AIAA J) 481

- Decay of a diamond shock pattern. Girard A. Simons (AIAA J) 1037
 Rapid expansion nozzles for gas dynamic lasers. R. A. Greenberg, A. M. Schneiderman, D. R. Ahouse, and E. M. Parmentier (AIAA J) 1494
 Numerical study of a diffusion-type chemical laser. William S. King and Harold Mirels (AIAA J) 1647
 Effect of nozzle throat radius of curvature on gasdynamic laser gain. Jerry L. Wagner and John D. Anderson Jr. (JSR, EN) 471
 A laser velocimeter for Reynolds stress and other turbulence measurements. Samuel E. Logan (AIAA J, TN) 933
 Propulsion by impinging laser beams. W. E. Moeckel (JSR, EN) 942
 Two-stream heterogeneous mixing measurements using laser Doppler velocimeter. John B. Miles and Dennis A. Johnson (AIAA J, TN) 1353
 Variable energy blast waves. Eli K. Dabora (AIAA J, TN) 1384
 Gas density measurements in a jet using Raman scattering. John M. Kellam and Morton M. Glick (AIAA J, TN) 1389
 A new dimension in front-light laser photography. Paul H. Dugger and John W. Hill (AIAA J, TN) 1544

Navigation, Control, and Guidance Theory

- Sight line autopilot: A new concept in air weapons. Bradford W. Parkinson, M. W. Wynne, and L. R. Kruczynski (JA, SYN) 321
 Approximate optimal control of distributed parameter systems. John T. Betts and Stephen J. Citron (AIAA J) 19
 Stability of solution of systems of linear differential equations with harmonic coefficients. F. C. L. Fu and S. Nemat-Nasser (AIAA J) 30
 A redundant strapdown inertial reference unit (SIRU). Jerold P. Gilmore and Richard A. McKern (JSR) 39
 Active damping of ESG rotors with mass-unbalance readout. Benjamin Lange (JSR) 96
 State constraints and singular solutions to penalty function optimization problems. William H. Boykin Jr. and Thomas E. Bullock (AIAA J) 137
 Performance limits of an aircraft inertial-based stochastic lateral guidance system. Duncan MacKinnon and Paul Madden (JA) 217
 Principles of performance monitoring with application to automatic landing. J. M. Smith, P. B. Schoonmaker, E. E. Pyron, and R. L. Benbow (JA) 339
 A new method for the alignment of inertial navigation systems. Lawrence W. Lyons III (JA) 433
 Guidance and control techniques for automated air traffic control. Homer Q. Lee, John D. McLean, and Heinz Erzberger (JA) 490
 Absolute stability analysis of attitude control systems for large boosters. S. M. Seltzer and D. D. Siljak (JSR) 506
 Performance limits of a radio-inertial lateral control system for automatic landing. Duncan MacKinnon and Paul Madden (JA) 513
 Application of the head-up display (HUD) to a commercial jet transport. J. Michael Naish (JA) 530
 Spectral factorization in periodically time-varying systems and application to navigation problems. T. Nishimura (JSR) 540
 A partial-step algorithm for the nonlinear estimation problem. Dale H. Boggs (AIAA J) 675
 Optimal analytic multiburn trajectories. Donald J. Jezewski (AIAA J) 680
 Trends in the field of automatic control in the last two decades. I. Flugge-Lotz (AIAA J) 721
 Optimal lateral guidance for low L/D shuttle vehicle entry. J. J. Deyst, D. E. Gustafson, and B. A. Kriegsmann (JSR) 772
 On-line tracking of six orbital elements of a thrust maneuvering space vehicle. Kay Yong and Chi-Neng Shen (AIAA J) 813
 A quasi-inertial attitude mode for orbiting spacecraft. Bryant D. Elrod (JSR) 889
 Estimating trajectory correction requirements for multiple outer planet missions. L. D. Friedman, T. W. Hamilton, and R. H. Stanton (JSR) 909
 Analysis of a pneumatic isolation system for inertial instrument testing. Dino A. Lorenzini and Roger P. Neeland (AIAA J) 1000
 Comparison of linear and Riccati equations used to solve optimal control problems. B. D. Tapley and W. E. Williamson (AIAA J) 1154
 A Chebyshev minimax technique oriented to aerospace trajectory optimization problems. William F. Powers (AIAA J) 1291
 Comparison of minimum-propellant guidance laws for impulsive and bounded-thrust spacecraft. Alain L. Kornhauser and Paul M. Lion (AIAA J) 1297
 Effect of lift variation on the impact of a rolling re-entry vehicle. J. P. Crenshaw (JSR, EN) 284
 Recursive filter initialization. Richard H. Battin, Steven R. Croopnick, and James M. Habbe (JSR, EN) 478
 Nonlinear filtering for random signals in statistically unknown noise. James T. Lo (AIAA J, TN) 520
 Optimal tracking laws. Richard E. Dickson (AIAA J, TN) 534
 An approximation to midcourse correction direction errors. James F. Kibler and George R. Young (JSR, EN) 709
 Noise effects on the critical tracking performance of the human operator. G. M. Swisher, M. L. Ritchie, and F. Maher (JSR, EN) 778

- A universal three-angle basis for rotational kinematic analysis, simulation and control. James Nohl Churchyard (JSR, EN) 779
- Automated treatment of problems in stochastic processes. R. R. Regl (AIAA J, TN) 827
- Equivalence of the minimum norm and gradient projection constrained optimization techniques. John L. Junkins (AIAA J, TN) 927
- Filtering with perfectly correlated measurement noise. Robert Reasenberg (AIAA J, TN) 942
- Accuracy of third-order predictor-corrector difference schemes for hyperbolic systems. P. Wesseling (AIAA J, TN) 948
- An automated gradient projection algorithm for optimal control problems. Stanley G. Rajtora and Bion L. Pierson (AIAA J, TN) 949
- Smooth empirical Bayes estimation of observation error variances in linear systems. H. F. Martz Jr. and M. W. Lian (AIAA J, TN) 956
- A nonlinear guidance scheme for intercept mission. Robert F. Webber and Giovanni Bonfanti (AIAA J, TN) 1237
- Allowable regions for stability multiplier characteristics. M. K. Sundareshan and M. A. L. Thathachar (AIAA J, TN) 1246
- Optimal control approximations for time delay systems. Ronald A. Hess (AIAA J, TN) 1536
- Placement of observer eigenvalues. Gregory J. Nazarov, Larry D. Levsen, and Gary A. Hewer (AIAA J, TN) 1686
- Comments on "A new guidance system figure-of-merit." Robert E. Roberson (JSR, TC) 384
- Reply by author to R. E. Roberson. George R. Young (JSR, TC) 384

Reliability, Quality Control, and Maintainability

Research Facilities and Instrumentation

- Advanced high-power arc heaters for simulating entries into the atmospheres of the outer planets. Charles E. Shepard (AIAA J, SYN) 117
- Hypersonic, high-density stored arc-heated air wind tunnel. W. B. Boatright, A. P. Sabol, R. B. Stewart, G. M. Stokes, and W. B. Olstad (AIAA J, SYN) 119
- Hypersonic low-density cone drag. A. G. Keel Jr., L. G. Kraige, R. D. Passmore, and R. N. Zapata (AIAA J, SYN) 561
- Measurements of the $H\beta$ line shape using a fiber optics slit system. George H. Stickford Jr. (AIAA J, SYN) 1269
- Electrofluid dynamic augmented wind tunnel. Frank L. Wattendorf and Elmer G. Johnson (AIAA J, SYN) 1559
- Generation of ultra-high total enthalpy gases through multicomponent flow techniques. Elmer G. Johnson and Hans J. P. von Ohain (AIAA J, SYN) 1561
- Arc driver operation for either efficient energy transfer or high-current generation. Robert E. Dannenberg and Anthony F. Silva (AIAA J, SYN) 1563
- Methane-air combustion gases as an aerodynamic test medium. R. R. Howell and L. R. Hunt (JSR) 7
- An immersion-type electrical conductivity probe for anisotropic plasmas. Elie J. Stubbe (AIAA J) 92
- Laser Doppler anemometer for water tunnel applications. Hartmut H. Bossel and Kenneth L. Orloff (JH) 101
- Heat pipe calorimetry for plasma stagnation-point heat transfer. M. M. Abu-Romia and B. Bhatia (AIAA J) 313
- Flowfield measurements using a total temperature probe at hypersonic speeds. Irwin E. Vas (AIAA J) 317
- A small, fast-response probe to measure composition of a binary gas mixture. G. L. Brown and M. R. Rebollo (AIAA J) 649
- Theory of ion boundary layers. Ronald A. Johnson and P. C. T. de Boer (AIAA J) 664
- Heat flux measurement using swept null point calorimetry. Charles A. Powars, William S. Kennedy, and Roald A. Rindal (JSR) 668
- An in-situ monitor for HCL and HF. E. R. Bartle, S. Kaye, and E. A. Meckstroth (JSR) 836
- Effect of angle of incidence on the response of cylindrical electrostatic probes at supersonic speeds. Antoni K. Jakubowski (AIAA J) 988
- Pollution monitoring: An engineering challenge. J. M. Snodgrass (JH, EN) 115
- Holographic interferometric mode shape patterns of cored mirrors. Jacob M. Miller (JSR, EN) 277
- General response of resistance thermometers and thermocouples in gases at low pressures. M. R. Davis (AIAA J, TN) 546
- Some evidence of contact surface instability in a high-enthalpy shock tunnel. M. K. McIntosh (AIAA J, TN) 236
- A technique for delineating convective and radiative wall heat flux. L. A. Lukens and F. P. Incropera (AIAA J, TN) 359
- Study of 8–15 km/sec shock waves using conventional shock tubes. J.-C. Leboucher, M. Pinegre, and P. Valentin (AIAA J, TN) 703
- An interference spectrometer for the remote sensing of pollutants. Rudolf A. Schindler (JSR, EN) 714
- A laser velocimeter for Reynolds stress and other turbulence measurements. Samuel E. Logan (AIAA J, TN) 933
- Measurement of the error of temperature sensors in flowing gases. C. R. Rein and J. R. O'Loughlin (AIAA J, TN) 954
- Direct measurement of the velocity gradient in a fluid flow. Robert H. Kirchhoff and Eugene K. Voci (AIAA J, TN) 1119
- Gas density measurements in a jet using Raman scattering. John M. Kellam and Morton M. Glick (AIAA J, TN) 1389

- A new dimension in front-light laser photography. Paul H. Dugger and John W. Hill (AIAA J, TN) 1544
- A conical arc driver for high-energy test facilities. Robert E. Dannenberg (AIAA J, TN) 1692
- Improved flexible supersonic wind-tunnel nozzle operated by a single jack. J. Rom and I. Etsion (AIAA J, TN) 1697

Safety

- Aircraft wake turbulence avoidance. William A. McGowan (JA, SYN) 197
- Synchronized time and frequency for aeronautical collision avoidance, communication, navigation, and surveillance. James E. Blouin (JA, SYN) 323
- A study of wire-deploying devices designed to trigger lightning. Vernon J. Rossow, Harold G. Clements, and B. Pat Denardo (JSR, SYN) 631
- Structural considerations of the human vertebral column under + G_z impact acceleration. Channing L. Ewing, Alber I. King, and Priyaranjan Prasad (JA) 84
- Principles of performance monitoring with application to automatic landing. J. M. Smith, P. B. Schoonmaker, E. E. Pyron, and R. L. Benbow (JA) 339
- Application of the head-up display (HUD) to a commercial jet transport. J. Michael Naish (JA) 530

LAUNCH VEHICLE AND MISSILE (LV/M) TECHNOLOGY

LV/M Aerodynamic Heating

- Convective heating on Delta-wing space-shuttle boosters including interference effects. R. O. Doughty, R. C. Erickson, O. R. Brock, T. W. Moore, and J. V. Clifton (JSR) 876
- An experimental investigation of the downstream effects of upstream boundary-layer injection. John A. Marshall II and Seshadri Srinivasan (AIAA J, TN) 1339
- Calculation of metric coefficients for streamline coordinates. John V. Rakich and George G. Mateer (AIAA, TN) 1538

LV/M Aerodynamics

- Newtonian lift and drag of blunt-cone cylinder bodies. J. Pike (AIAA J) 176
- Calculation of compressible turbulent boundary layers with roughness and heat transfer. F. A. Dvorak (AIAA J) 1447
- Influence of helical serrations on the aerodynamic properties of a spinning body. Maurice A. Sylvester (AIAA J, TN) 223
- Wind-tunnel Magnus testing of a canted fin or self-rotating configuration. Anders S. Platou (AIAA J, TN) 965
- Effect of nozzle boundary layers on rocket exhaust plumes. Girard A. Simons (AIAA J, TN) 1534
- Lift of wing-body combination. H. T. Yang (AIAA J, TN) 1535
- Detachment of the outer shock from underexpanded rocket plumes. Kenneth J. Plotkin and James Stark Draper (AIAA J, TN) 1707
- Errata: "An analysis of plume-induced boundary-layer separation." Michael C. Fong (JSR, ERR) 480

LV/M Configurational Design

- Side forces on ogive-cylinder bodies at high angles of attack in transonic flow. George S. Pick (JSR, SYN) 389
- Structural analysis of a parawing during deployment. Paul M. Kenner (JA) 168
- Equations of motion of a constrained split fairing system during opening. Robert C. Saunders Jr. (JSR, EN) 55
- Aerodynamic characteristics of the slotted fin. P. Daniels and T. A. Clare (JA, EN) 603
- Aerospace application of atmospheric rendezvous. John D. Bird and A. Duane Schaezler (JSR, EN) 703
- Panel-flutter analysis of a thermal protection-shield concept for the space shuttle. Herbert J. Cunningham (AIAA J, TN) 1101

LV/M Dynamics and Control

- Thrust profile shaping for spin-stabilized vehicles. Lawrence D. Perlmutter (JSR) 259
- Absolute stability analysis of attitude control systems for large boosters. S. M. Seltzer and D. D. Siljak (JSR) 506
- Optimal and constrained-optimal control of a flexible launch vehicle. M. C. Maki and J. van de Vegte (AIAA J) 796
- A statistical analysis of the roll rate of a launch vehicle under the influence of random fin misalignments. Ragan Burt Madden (AIAA J, TN) 324
- Aerodynamic characteristics of the slotted fin. P. Daniels and T. A. Clare (JA, EN) 603

- A universal three-angle basis for rotational kinematic analysis, simulation and control. James Nohl Churchyard (JSR, EN) 779
- Secondary jet interaction with emphasis on outflow and jet location. Jerry N. Hefner and James R. Sterrett (JSR, EN) 845
- Placement of observer eigenvalues. Gregory J. Nazarov, Larry D. Levsen, and Garry A. Hewer (AIAA J, TN) 1686

LV/M Dynamics, Uncontrolled

- Side forces on ogive-cylinder bodies at high angles of attack in transonic flow. George S. Pick (JSR, SYN) 389
- A general transport rule for variable mass dynamics. Stuart B. Belknap (AIAA J, SYN) 1137
- An analysis of asymmetric rolling bodies with nonlinear aerodynamics. Ali Hasan Nayfeh and William S. Saric (AIAA J) 1004
- Experimental studies with a liquid-filled gyroscope. B. G. Karpov, J. T. Frasier, and W. P. D'Amico (JSR, EN) 220
- Aerodynamic characteristics of the slotted fin. P. Daniels and T. A. Clare (JA, EN) 603
- Wind-tunnel Magnus testing of a canted fin or self-rotating configuration. Anders S. Platou (AIAA J, TN) 965

LV/M Fabrication

- Stress corrosion cracking and hydrogen embrittlement of high-strength fasteners. James K. Stanley (JSR) 796

LV/M Flight Testing

- Base thermal environment of Delta vehicle with six strap-on motors. G. F. Greenwald (JSR, SYN) 727
- Flight test base pressure results at hypersonic Mach numbers in turbulent flow. J. M. Cassanto (AIAA J, TN) 329
- Flight evaluation of a quartz-fiberfrax heat shield. George F. Greenwald (JSR, EN) 939

LV/M Fuel and Propellant Systems (including Storage and Transfer)

- Control of the thermodynamic state of space-stored cryogenics by jet mixing. Louis J. Poth and James R. Van Hook (JSR) 332
- Prediction of pressure during evacuation of multilayer insulation. A. P. M. Glassford (JSR, EN) 378

LV/M Guidance Systems (including Command and Information Systems)

- Fluidic inertial platform. Rolf K. Brodersen (JSR, SYN) 131
- Minimum energy intercept of a deorbiting target. Dennis E. Fitzgerald (AIAA J, TN) 511
- A nonlinear guidance scheme for intercept mission. Robert F. Webber and Giovanni Bonfanti (AIAA J, TN) 1237
- Comment on "Proportional navigation vs an optimally evading, constant-speed target in two dimensions." E. M. Cliff (JSR, TC) 224
- Reply by author to E. M. Cliff. Paul M. Julich (JSR, TC) 224

LV/M Gust Loading and Wind Shear

- Launch vehicle gust penetration loads. L. E. Ericsson, J. P. Reding, and R. A. Guenther (JSR) 19
- Small-scale wind shear definition for aerospace vehicle design. George H. Fichtl (JSR) 79

LV/M Mission Studies and Economics

LV/M Propulsion System Integration

- Base thermal environment of Delta vehicle with six strap-on motors. G. F. Greenwald (JSR, SYN) 727

LV/M Simulation

- Three-degree-of-freedom motions of a slender asymmetric cone in a hypersonic wind tunnel. L. K. Ward Jr., J. C. Uselton, and J. P. Billingsley (JSR) 831
- Prediction of pressure during evacuation of multilayer insulation. A. P. M. Glassford (JSR, EN) 378

LV/M Structural Design (including Loads)

- Flexure of laminated Reissner plates. David N. Hutula and Donald G. Lemke (JSR) 84
- A practical approach to spacecraft structural dynamics problems. M. R. Trubert (JSR) 818
- Stability of a laminated anisotropic circular plate. Sam Tang (JSR, EN) 123
- Panel-flutter analysis of a thermal protection-shield concept for the space shuttle. Herbert J. Cunningham (AIAA J, TN) 1101

LV/M Subsystem Design

- Base flow environment analysis of a single engine booster. Yong S. Hong (JSR, SYN) 481
- Dual flex—A low horsepower flexible seal nozzle. Jonathan W. Wilson, Wendell O. Johnson, and Philip C. Sottosanti (JSR, SYN) 567
- Flight evaluation of a quartz-fiberfrax heat shield. George F. Greenwald (JSR, EN) 939

LV/M System and Component Ground Testing

- A practical approach to spacecraft structural dynamics problems. M. R. Trubert (JSR) 818
- Three-degree-of-freedom motions of a slender asymmetric cone in a hypersonic wind tunnel. L. K. Ward Jr., J. C. Uselton, and J. P. Billingsley (JSR) 831
- Method for constructing a full modal damping matrix from experimental measurements. T. K. Hasselman (AIAA J, TN) 526

LV/M Trajectories

- Three-degree-of-freedom motions of a slender asymmetric cone in a hypersonic wind tunnel. L. K. Ward Jr., J. C. Uselton, and J. P. Billingsley (JSR) 831
- An analysis of asymmetric rolling bodies with nonlinear aerodynamics. Ali Hasan Nayfeh and William S. Saric (AIAA J) 1004
- Plume impingement force during tandem stage separation at high altitudes. Michael W. Su and Charles R. Mullen Jr. (JSR, EN) 715
- Short term bounds for the effect of oblateness on ballistic trajectories. Richard W. Longman (JSR, EN) 842

Launch Vehicle Systems (including Ground Support)

- Stage separation of parallel-staged shuttle vehicles: A capability assessment. Michael J. Hurley Jr. and George W. Carrie (JSR) 764
- Mixed-mode propulsion: Optimum burn profile for two-mode systems. Robert Salkeld and Robert S. Skulsky (JSR, EN) 475
- Plume impingement force during tandem stage separation at high altitudes. Michael W. Su and Charles R. Muller Jr. (JSR, EN) 715

Missile Systems

- A nonlinear guidance scheme for intercept mission. Robert F. Webber and Giovanni Bonfanti (AIAA J, TN) 1237
- An experimental investigation of the downstream effects of upstream boundary-layer injection. John A. Marshall II and Seshadri Srinivasan (AIAA J, TN) 1339

Sounding Rocket Systems

- Structural considerations in the development of an extremely lightweight decelerator. Peter G. Niederer (JSR) 351
- Equations of motion of a constrained split fairing system during opening. Robert C. Saunders Jr. (JSR, EN) 55

Tracking Systems

- Trajectory determination from shock arrival times. Walter P. Reid (AIAA J, TN) 537

MARINE TECHNOLOGY

Marine Electric Power Systems

- Prospects for superconducting systems in military submarines. Paris Alexander Dimitriadis (JH) 16

Marine Materials, Corrosion/Erosion

Marine Hydrodynamics, Vessel and Control Surface

Theory for the first-order gravitational effects on ship forces and moments in shallow water. J. P. Breslin (JH, EN) 110

Marine Mooring Systems and Cable Mechanics

Configuration of a towline attached to a vehicle moving in a circular path. Young-il Choo and Mario J. Casarella (JH) 51

Marine Propulsion System Integration

Prospects for superconducting systems in military submarines. Paris Alexander Dimitriadis (JH) 16

Marine Vessel Design (including Loads)

Stresses in the blades of a cargo ship propeller. H. G. Keil, J. J. Blaurock, and E. A. Weitendorf (JH) 2
Added mass of a circular cylinder in contact with a rigid boundary. C. J. Garrison (JH, EN) 59

Marine Vessel Systems, Submerged

Prospects for superconducting systems in military submarines. Paris Alexander Dimitriadis (JH) 16
Configuration of a towline attached to a vehicle moving in a circular path. Young-il Choo and Mario J. Casarella (JH) 51
Cable interactions in a depth controlled submersible. Jacob M. Abel (JH) 83

Marine Vessel Systems, Surface**Marine Vessel Trajectories, Stability, and Control**

Configuration of a towline attached to a vehicle moving in a circular path. Young-il Choo and Mario J. Casarella (JH) 51
Cable interactions in a depth controlled submersible. Jacob M. Abel (JH) 83
Towed vehicle system in a coordinated turn. Thomas C. Cannon and Joseph Genin (AIAA J) 252

Marine Vessel Vibration

Stresses in the blades of a cargo ship propeller. H. G. Keil, J. J. Blaurock, and E. A. Weitendorf (JH) 2
Dynamic similarity scaling laws applied to cables. M. Lowell Collier Jr. (JH, EN) 111
Nonlinear axisymmetric flexural vibration equations of a cylindrically anisotropic circular plate. Chi-lung Huang (AIAA J, TN) 1378
Transient interaction of a flexible ring-reinforced shell and a fluid medium. Jerry W. Berglund (AIAA J, TN) 1540

Oceanography, Physical and Biological

Pollution monitoring: An engineering challenge. J. M. Snodgrass (JH, EN) 115

Propulsion System Hydrodynamics

Airfoil in a contracting or diverging stream. B. Lakshminarayana and M. T. White (JA) 354
Analysis of free turbulent mixing flows without a net momentum defect. Joseph A. Schetz and Stanley Favin (AIAA J, TN) 1524

Sea Pollution Containment and Control

Pollution monitoring: An engineering challenge. J. M. Snodgrass (JH, EN) 115

Undersea Acoustics

Acoustic radiation from two concentric cylindrical shells. Martin L. Pollack and Jerome M. Klosner (AIAA J) 1631

Undersea Communication**Undersea Extra-Vehicular Activity****Undersea Habitability and Life Support Systems****Undersea Medicine (Including Psychology, Pressure Effects, etc.)**
Undersea Mining Systems**PROPULSION****Airbreathing Engine Testing**

Design and testing of the American Airlines prototype B-747 AIDS system. H. D. Kruckenberg (JA) 259

Airbreathing Propulsion, Hypersonic

Supersonic annular nozzles. David Migdal (JSR) 3
Preliminary results of large supersonic burning combustor testing. A. J. Metzler and T. W. Mertz (JA) 23
Gas dynamic and transport phenomena in the two-dimensional jet interaction flowfield. W. J. Thayer III and R. C. Corlett (AIAA J) 488
Investigation of a supersonic surface jet—Hypersonic flow interaction with axial symmetry. Raymond P. Shreeve, Gordon C. Oates, and Harlow G. Ahlstrom (AIAA J) 589
Mixed-mode propulsion: Optimum burn profile for two-mode systems. Robert Salkeld and Robert S. Skulsky (JSR, EN) 475
Two-dimensional model for thermal compression. F. S. Billig (JSR, EN) 702
Swirling base injection for supersonic combustion ramjets. Louis A. Povinelli and Robert C. Ehlers (AIAA J, TN) 1243

Airbreathing Propulsion, Subsonic and Supersonic

Boron particle nonequilibrium effects in combustor ducted flows. L. Douglas Smoot and Gregory S. Anderson (AIAA J, SYN) 857
Prospects for improvement in efficiency of flight propulsion systems. R. M. Denning and J. A. Hooper (JA) 9
Pilot ignition of cold supersonic flows. Kenneth N. C. Bray and Ronald S. Fletcher (AIAA J) 72
Low-area ratio, thrust-augmenting ejectors. Richard B. Fancher (JA) 243
Exploratory analysis of nonuniform plug nozzle flowfields. Charles R. Hall Jr. and Thomas J. Mueller (JSR) 337
Airfoil in a contracting or diverging stream. B. Lakshminarayana and M. T. White (JA) 354
Combined viscous-inviscid analysis of supersonic inlet flowfields. Theodore A. Reyhner and Timothy E. Hickcox (JA) 589
Experimental correlation of installation effects on inlet pressure recovery. W. H. Ball and P. A. Ross (JA) 596
Analytical method for combining the interaction of inlet distortion and turbulence. Ronald L. Panton (JA) 636
Film cooling of insert turbine vane trailing edges. E. C. Bassinet (JA) 849
Predicted film cooling near flush slots—Comparison with experiment. D. E. Metzger, J. H. Carper Jr., and J. M. Warren (JA) 857
Condensed zinc particle size determined by a time discrete sampling apparatus. Donald D. McBride and Pauline M. Sherman (AIAA J) 1058
An invalid equation in the general momentum theory of the actuator disk. Peter M. Goorjian (AIAA J, TN) 543

Combustion in Gases

An analytical model for nitric oxide formation in a gas turbine combustor. Richard Roberts, Leonard D. Aceto, Reiner Kollrack, Donald P. Teixeira, and John M. Bonnell (AIAA J) 820
Dynamic response of a plane-symmetrical exothermic reaction center. J. W. Meyer and A. K. Oppenheim (AIAA J) 1509
Criteria for electrically heated temperature probes in flames. Irvin M. Miller and David R. Schryer (AIAA J, TN) 111
Laminar flamesheet with hypersonic viscous interaction. J. W. Ellinwood and H. Mirels (AIAA J, TN) 830

Combustion in Heterogeneous Media

Boron particle nonequilibrium effects in combustor ducted flows. L. Douglas Smoot and Gregory S. Anderson (AIAA J, SYN) 857
Pulsed T-Burner testing of combustion dynamics of aluminized solid propellants. E. W. Price, H. B. Mathes, O. H. Madden, and B. G. Brown (A/A, April*) 65
*See Note on page 3
Barrier film cooling study. Kurt Berman and S. J. Andrysiak (JSR) 152
Development and application of a comprehensive analysis of liquid-rocket combustion. R. D. Sutton, W. S. Hines, and L. P. Combs (AIAA J) 194
Effect of external radiation on the burning rates of solid propellants. Ralph L. Coates and Solim Kwak (JSR) 742
Ignition and combustion of boron in O₂/inert atmospheres. G. Mohan and F. A. William (AIAA J) 776

- An analytical model for nitric oxide formation in a gas turbine combustor. Richard Roberts, Leonard D. Aceto, Reiner Kollrack, Donald P. Teixeira, and John M. Bonnell (AIAA J) 820
- Effects of low-temperature ammonium perchlorate decomposition on the ballistic properties of a CTPB propellant. G. B. Northam, G. L. Pellett, and W. R. Cofer III (AIAA J) 1068
- Dynamic response of a plane-symmetrical exothermic reaction center. J. W. Meyer and A. K. Oppenheim (AIAA J) 1509
- Combustion of NH_4ClO_4 -polyurethane propellants: Pressure, temperature, and gas-phase composition fluctuations. J. L. Eisel, N. W. Ryan, and A. D. Baer (AIAA J) 1655
- Observation of ultraviolet radiation from a rocket exhaust plume at high altitudes. A. W. Mantz, J. J. Lange, E. S. Fishburne, D. C. Moyer, and C. R. Waters (AIAA J, TN) 1132
- Ignition of nonhypergolic rocket fuels with fuming nitric acid under suitable conditions. N. L. Munjal, J. Prasad, and S. C. Ghosh (AIAA J, TN) 1345
- Variable energy blast waves. Eli K. Dabora (AIAA J, TN) 1384
- Ignition of nonhypergolic rocket fuels. N. L. Munjal and J. Prasad (AIAA J, TN) 1722

Combustion Stability, Ignition, and Detonation

- Decomposition, pyrolysis, and deflagration of pure and isomorphously doped ammonium perchlorate. T. L. Boggs, K. J. Kraeutle, and D. E. Zurn (AIAA J, SYN) 15
- A model of the hypergolic propellant pop phenomena. B. R. Lawver (JSR, SYN) 225
- Application of combustion instability technology to solid-propellant rocket motor problems. S. C. Browning, M. Krashin, and J. H. Thacher (JSR, SYN) 293
- Pulsed T-Burner testing of combustion dynamics of aluminized solid propellants. E. W. Price, H. B. Mathes, O. H. Madden, and B. G. Brown (A/A, April*) 65
- *See Note on page 3
- A combustion stability analysis for catalytic monopropellant thrusters. W. L. Owens Jr. (JSR) 148
- Erratum: "A combustion stability analysis for catalytic monopropellant thrusters." W. L. Owens Jr. (JSR, ERR) 624
- Calculation of low-frequency unsteady behavior of liquid rockets from droplet combustion parameters. W. T. Webber (JSR) 231
- Popping phenomena with the hydrazine nitrogen-tetroxide propellant system. John Houseman and Allen Lee (JSR) 678
- Analysis of reaction products of nitrogen tetroxide with hydrazines under nonignition conditions. Michel A. Saad, Michael B. Detweiler, and Michael A. Sweeney (AIAA J) 1073
- Fast burning rates in thin film propellants. Charles A. Rodenberger and Miles L. Sawyer (AIAA J) 1151
- Propellant combustion instability as measured by combustion recoil. C. M. Muhlfeith, A. D. Baer, and N. W. Ryan (AIAA J) 1280
- Combustion of NH_4ClO_4 -polyurethane propellants: Pressure, temperature, and gas-phase composition fluctuations. J. L. Eisel, N. W. Ryan, and A. D. Baer (AIAA J) 1655
- Comments on "Dynamics of an explosive reaction center." Andrzej Wortman (AIAA J, TC) 846
- Reply by authors to A. Wortman. A. K. Oppenheim and L. J. Zajac (AIAA J, TC) 847
- Errata: "Failure of existing theories to correlate experimental nonacoustic combustion instability data." Thomas L. Boggs and Merrill W. Beckstead (AIAA J, ERR) 1728

Electric and Advanced Space Propulsion

- Fully ionized quasi-one-dimensional magnetic nozzle flow. Donald L. Chubb (AIAA J, SYN) 113
- Performance of quasi-steady MPD thrusters at high powers. A. C. Malliaris, R. R. John, R. L. Garrison, and D. R. Libby (AIAA J, SYN) 121
- Feasibility studies on an auxiliary propulsion system using MPD thrusters. James A. Burkhart and George R. Seikel (JSR, SYN) 487
- Feasibility of increasing specific impulse of supersonic nozzles by lithium condensation. D. J. Roehling, T. F. Stratton, and D. B. Fradkin (JSR, SYN) 725
- End loop shorting in nonequilibrium MHD generators. R. Decher (AIAA J, SYN) 983
- Electron number density and temperature in MPD-arc thruster exhausts. Charles J. Michels, James R. Rose, and Donald R. Sigman (AIAA J, SYN) 1395
- Survey of satellite auxiliary electric propulsion systems. Lee B. Holcomb (JSR, SA) 133
- Integration of a breadboard power conditioner with a 20-cm ion thruster. T. D. Masek, T. W. Macie, E. N. Costogoe, W. J. Muldoon, D. R. Garth, and G. C. Benson (JSR) 71
- Anode phenomena in high-current accelerators. Ronald C. Oberth and Robert G. Jahn (AIAA J) 86
- Current sheet structure in an inductive-impulsive plasma accelerator. C. L. Dailey and R. H. Lovberg (AIAA J) 125

- High-thrust density colloid source development. C. W. Lear, M. N. Huberman, and J. W. Geis (JSR) 307
- 12-cm magneto-electrostatic containment mercury ion thruster development. William D. Ramsey (JSR) 318
- Exploratory analysis of nonuniform plug nozzle flowfields. Charles R. Hall Jr. and Thomas J. Mueller (JSR) 337
- Ion-thruster propellant utilization. Harold R. Kaufman (JSR) 511
- A capillary-fed annular colloid thruster. Adrian G. Bailey, Jörg E. Bracher, and Hans J. von Rohden (JSR) 518
- Performance improvements in solid fuel microthrusters. Robert J. Vondra and Keith I. Thomassen (JSR) 738
- Low-cost solar electric testbed for ion thruster systems. Henning W. Scheel (JSR) 853
- System tradeoffs for pulsed MPD thruster in space mission application. Hwachii Lien (JSR) 858
- Comparison of advanced propulsion concepts for deep space exploration. W. E. Moeckel (JSR) 863
- Viscous effects on biowaste resistojet nozzle performance. James M. Kallis, Milton Goodman, and Carl R. Halbach (JSR) 869
- Exhaust velocity studies of a solid teflon pulsed plasma thruster. Keith I. Thomassen and Robert J. Vondra (JSR, EN) 61
- Propulsion by travelling conduction waves. Bruce W. Boreham (JSR, EN) 124
- A mechanism for three-axis control of an ion thruster array. G. S. Perkins, K. G. Johnson, J. D. Ferrera, and T. D. Masek (JSR, EN) 218
- Ion propulsion system: Regulation of the vaporizer temperature. C. Landrault and M. Briot (JSR, EN) 286
- Effects of heat addition in divergent nozzles with application to MPD thrusters. M. Sajben and G. E. Chmielewski (JSR, EN) 476
- Propulsion by impinging laser beams. W. E. Moeckel (JSR, EN) 942
- Magnetically balanced cross-flow arcs. Vaman R. Malghan and David M. Benenson (AIAA J, TN) 1347

Fuels and Propellants, Properties of

- Formulating propellants for fully case-bonded end-burning motors. H. E. Marsh Jr. and D. E. Udlock (JSR, SYN) 625
- Effect of external radiation on the burning rates of solid propellants. Ralph L. Coates and Solim Kwak (JSR) 742
- Fast burning rates in thin film propellants. Charles A. Rodenberger and Miles L. Sawyer (AIAA J) 1151
- Helium absorption into nitrogen tetroxide (NTO) and aerazine-50(A-50). Philip J. Knowles (JSR, EN) 708
- Ignition of nonhypergolic rocket fuels with fuming nitric acid under suitable conditions. N. L. Munjal, J. Prasad, and S. C. Ghosh (AIAA J, TN) 1345
- Ignition of nonhypergolic rocket fuels. N. L. Munjal and J. Prasad (AIAA J, TN) 1722

Liquid Rocket Engines

- Nonuniform propellant distribution in multiple tank rocket feed systems. Gilbert F. Pasley (JSR, SYN) 65
- Convolute nozzle extension. Lee Carey, John Dueringer, and Geoffrey Nixon (JSR, SYN) 485
- Pulse performance analysis for small hypergolic-propellant rocket engines. Gerald W. Smith and Richard H. Sforzini (JSR, SYN) 627
- Liquid rocket performance, stability, and compatibility. Ralph S. Valentine (JSR, SA) 295
- Unmanned planetary spacecraft chemical rocket propulsion. H. Burlage Jr., W. Gin, and R. W. Riebling (JSR, SA) 729
- A combustion stability analysis for catalytic monopropellant thrusters. W. L. Owens Jr. (JSR) 148
- Erratum: "A combustion stability analysis for catalytic monopropellant thrusters." W. L. Owens Jr. (JSR, ERR) 624
- Barrier film cooling study. Kurt Berman and S. J. Andrysiak (JSR) 152
- Vehicle-scale investigation of a fluorine-hydrogen main tank injection pressurization system. E. C. Cady and D. W. Kendle (JSR) 158
- Development and application of a comprehensive analysis of liquid-rocket combustion. R. D. Sutton, W. S. Hines, and L. P. Combs (AIAA J) 194
- Calculation of low-frequency unsteady behavior of liquid rockets from droplet combustion parameters. W. T. Webber (JSR) 231
- Atomization and mixing characteristics of gas/liquid coaxial injector elements. R. J. Burick (JSR) 326
- Popping phenomena with the hydrazine nitrogen-tetroxide propellant system. John Houseman and Allen Lee (JSR) 678
- Analysis of reaction products of nitrogen tetroxide with hydrazines under nonignition conditions. Michel A. Saad, Michael B. Detweiler, and Michael A. Sweeney (AIAA J) 1073
- Performance of a staged combustion rocket motor. H. L. Dyer and C. F. Warner (JSR, EN) 215
- Prediction of tank pressure history in a blowdown propellant feed system. Gilbert F. Pasley (JSR, EN) 473
- Mixed-mode propulsion: Optimum burn profile for two-mode systems. Robert Salkeld and Robert S. Skulsky (JSR, EN) 475

- Air film cooling in a nonadiabatic wall conical nozzle. Donald R. Boldman, Steve S. Papell, and Robert C. Ehlers (JSR, EN) 556
- The optical temperature of the Apollo 15 exhaust plume. A. E. Pifer and E. P. Krider (JSR, EN) 847
- Effect on supersonic jet noise of nozzle plenum pressure fluctuations. Raymond Kushida and Jack Rupe (AIAA J, TN) 946
- Ignition of nonhypergolic rocket fuels with fuming nitric acid under suitable conditions. N. L. Munjal, J. Prasad, and S. C. Ghosh (AIAA J, TN) 1345
- Ignition of nonhypergolic rocket fuels. N. L. Munjal and J. Prasad (AIAA J, TN) 1722

Marine Propulsion

- Some storage and shear history effects on polymeric friction reduction. A. T. Ellis, R. Y. Ting, and R. H. Nadolink (JH) 66

Nuclear Propulsion

- Performance potential of gas-core and fusion rockets: A mission applications survey. Laurence H. Fishbach and Edward A. Willis Jr. (JSR, SYN) 569
- Experimental flow studies of the colloid core reactor concept. B. N. Turman and Siegfried H. Hasinger (JSR, SYN) 723
- Erosion of graphite surface exposed to high-temperature supersonic hydrogen gas. Om P. Sharma (JSR, SYN) 785
- Review of fission engine concepts. Karlheinz Thom (JSR, SA) 633
- Two-component vortex flow studies of the colloid core nuclear rocket. Loren A. Anderson, Siegfried H. Hasinger, and B. N. Turman (JSR) 311
- Crew radiation dose from a high-impulse gas-core nuclear rocket plume. Charles C. Masser (JSR) 597
- A mini-cavity reactor for low-thrust high-specific impulse propulsion. Robert E. Hyland (JSR) 601
- Comparison of advanced propulsion concepts for deep space exploration. W. E. Moeckel (JSR) 863
- Condensed zinc particle size determined by a time discrete sampling apparatus. Donald D. McBride and Pauline M. Sherman (AIAA J) 1058
- Experimental investigation of recirculating cells in laminar coaxial jets. N. R. Warpinski, H. M. Nagib, and Z. Lavan (AIAA J) 1204
- Pressure sensing and controller development. W. J. Wachtler and J. Tobolski (JSR, EN) 214
- Propellant flow rate through simulated liquid-core nuclear rocket fuel bed. James P. McGuirk and Chul Park (JSR, EN) 375
- Air film cooling in a nonadiabatic wall conical nozzle. Donald R. Boldman, Steve S. Papell, and Robert C. Ehlers (JSR, EN) 556
- Buoyancy effect on fuel containment in a gas-core nuclear rocket. Henry A. Putre (JSR, EN) 932

Rocket Engine Testing

- Pulse performance analysis for small hypergolic-propellant rocket engines. Gerald W. Smith and Richard H. Sforzini (JSR, SYN) 627

Solid and Hybrid Rocket Engines

- Convolute nozzle extension. Lee Carey, John Dueringer, and Geoffrey Nixon (JSR, SYN) 485
- Formulating propellants for fully case-bonded end-burning motors. H. E. Marsh Jr. and D. E. Udlock (JSR, SYN) 625
- Unmanned planetary spacecraft chemical rocket propulsion. H. Burlage Jr., W. Gin, and R. W. Riebling (JSR, SA) 729
- Pressurized crack behavior in two-dimensional rocket motor geometries. E. C. Francis, G. H. Lindsey, and R. R. Parmerter (JSR) 415
- Effect of external radiation on the burning rates of solid propellants. Ralph L. Coates and Solim Kwak (JSR) 742
- Particle damping in solid propellant rockets. Jefferson Y. S. Yang (AIAA J, TN) 337
- Observation of ultraviolet radiation from a rocket exhaust plume at high altitudes. A. W. Mantz, J. J. Lange, E. S. Fishbourne, D. C. Moyer, and C. R. Waters (AIAA J, TN) 1132

SPACECRAFT TECHNOLOGY

Data Sensing and Presentation or Transmission Systems

- Bionic self-adaptive data compression. Barry K. Powell (JSR) 48
- Processing onboard optical data for planetary approach navigation. Charles H. Acton Jr. (JSR) 746
- Lunar radii determined from lunar orbiter 1 V/H sensor data. William R. Wells (JSR, EN) 463

Earth Satellite Systems, Unmanned

- Construction and evaluation of a lightweight parabolic antenna model. D. L. Pope, W. H. Hewitt Jr., and J. G. Tetz (JSR, SYN) 289
- Gravity-gradient momentum management. Barry K. Powell (JSR, SYN) 385
- Atmospheric drag cross section of spacecraft solar arrays. Richard R. Williams (JSR, SYN) 565
- Mass center estimation in spinning drag-free satellites. J. David Powell (JSR) 399
- Stable longitudes for 12-hr eccentric orbit satellites. Carl A. Wagner (JSR) 757
- 120-in. large space telescope (LST). Sol. L. Morrison (JSR, EN) 929

Earth-Orbital Trajectories

- Space tug performance optimization. Joseph D. Mason (JSR, SYN) 491
- Atmospheric drag cross section of spacecraft solar arrays. Richard R. Williams (JSR, SYN) 565
- Stable longitudes for 12-hr eccentric orbit satellites. Carl A. Wagner (JSR) 757
- Orbit prediction in the presence of gravitational anomalies. Steven Roy Croopnick (AIAA J) 861
- Computational aspects of asymptotic matching in the restricted three-body problem. L. M. Perko (AIAA J, TN) 540

Entry Deceleration Systems and Flight Mechanics (e.g., Parachutes)

- Structural analysis of a parawing during deployment. Paul M. Kenner (JA) 168
- Supersonic and transonic deployment of ribbon parachutes at low altitudes. Randall C. Maydew and Donald W. Johnson (JA) 497

Entry Vehicle Dynamics and Control

- Lateral dynamics of flight on a great circle. Alastair M. Drummond (AIAA J) 247
- Effect of lagging pitching moment on re-entry vehicle dynamic stability. Thomas D. Burton and Jacob M. Abel (JSR) 406
- Effect on slender vehicle dynamics of change from spherical to conical nose bluntness. Lars E. Ericsson and Rolf A. Guenther (JSR) 435
- Optimal lateral guidance for low L/D shuttle vehicle entry. J. J. Deyst, D. E. Gustafson, and B. A. Kriegsman (JSR) 772
- Rarefied hypersonic flow characteristics of delta wings and trailing edge spoilers. Jean Allegre, Didier Lartigue, and Marie-Françoise Scibilia (AIAA J) 900
- Comparison of linear and Riccati equations used to solve optimal control problems. B. D. Tapley and W. E. Williamson (AIAA J) 1154
- Effect of lift variation on the impact of a rolling re-entry vehicle. J. P. Crenshaw (JSR, EN) 284
- Parameters influencing dynamic stability characteristics of Viking-type entry configurations at Mach 1.76. Charles H. Whitlock and Paul M. Siemers III (JSR, EN) 558
- Secondary jet interaction with emphasis on outflow and jet location. Jerry N. Hefner and James R. Sterrett (JSR, EN) 845
- Exact solution for dynamic oscillations of re-entry bodies. E. V. Laitone and N. X. Vinh (AIAA J, TN) 925
- Prediction of nose shape effects on nonlinear stability characteristics of slender cones. Lars E. Ericsson and Rolf A. Guenther (AIAA J, TN) 1111
- Aerodynamics of a slender cone with asymmetric nose bluntness at Mach 14. Otto Walchner, Frank M. Sawyer, and Kevin E. Yelmgren (AIAA J, TN) 1121
- An experimental investigation of the downstream effects of upstream boundary-layer injection. John A. Marshall II and Seshadri Srinivasan (AIAA J, TN) 1339

Entry Vehicle and Landers

- Performance optimization technique for the 1975 Mars Viking Lander. Hugh N. Zeiner, Charles E. French, and Duane A. Howard (JSR) 364
- Surface flow patterns and aerodynamic heating on space shuttle vehicles. J. G. Marvin, H. L. Seegmiller, W. K. Lockman, G. G. Mateer, C. C. Pappas, and C. E. DeRose (JSR) 573
- A Venus planetology mission based on the planetary explorer spacecraft. Raymond G. Ziehm and John R. Mellin (JSR, EN) 280
- Thermal control of a Jovian survivable probe. Bruce G. Schelden (JSR, EN) 453
- Approximate temperature distribution for a diffuse, highly reflecting material. Kenneth C. Weston, John T. Howe, and Michael J. Green (AIAA J, TN) 1252

Entry Vehicle Mission Studies and Flight Mechanics

- Approximate equations for impact dispersion resulting from winds and deviations in density. Louis S. Glover (JSR, SYN) 483
- Minimum-energy hypersonic nose and leading-edge shapes. Roger J. Furey (JSR) 107
- Performance optimization technique for the 1975 Mars Viking Lander. Hugh N. Zeiner, Charles E. French, and Duane A. Howard (JSR) 364
- Entry probe descent to the base of the Jovian clouds. Howard B. Winkler, Donald P. Fields, and Russell G. Gamache (JSR) 660
- Conical nose shape effects on drag and static stability at Mach 10. Robert S. Neff (JSR, EN) 126
- Aerodynamic characteristics of two-dimensional waverider configurations. C. T. Nardo (AIAA J, TN) 1258

Entry Vehicle Testing

- Flap turbulent heating characteristics obtained from a hypersonic shock tunnel. B. S. C. Kim and T. W. Parkinson (JSR, SYN) 227
- Approximate equations for impact dispersion resulting from winds and deviations in density. Louis S. Glover (JSR, SYN) 483
- Silica reinforcement and char reactions in the Apollo heat shield. D. E. Cagliostro, H. Goldstein, and J. A. Parker (JSR) 346
- Dynamic support interference. J. Peter Reding and Lars E. Ericsson (JSR) 547
- Heat flux measurement using swept null point calorimetry. Charles A. Powars, William S. Kennedy, and Roald A. Rindal (JSR) 668
- Convective heating on Delta-wing space-shuttle boosters including interference effects. R. O. Doughty, R. C. Erickson, O. R. Brock, T. W. Moore, and J. V. Clifton (JSR) 876
- Hypersonic transitional and turbulent flow studies on a lifting entry vehicle. C. H. Young, D. C. Reda, and A. M. Roberge (JSR) 883
- Turbulent base heating on a slender re-entry vehicle. W. Leon Francis (JSR, EN) 620
- Use of an infrared-imaging camera to obtain convective heating distributions. Dale L. Compton (AIAA J, TN) 1130
- Effect of low heat-shield ablation rates on flight test turbulent base pressure. Bruce M. Bulmer (AIAA J, TN) 1704

Extraterrestrial Surface Transportation**Extra-Vehicular Activity**

- Preliminary results of manned cargo transfer studies under simulated zero-g conditions. Amos A. Spady Jr., Gary P. Beasley, and Kenneth R. Yenni (JSR) 369
- Advanced extravehicular protective systems. P. F. Heimlich, J. G. Sutton, and E. H. Tepper (JSR) 921

Lunar and Interplanetary Spacecraft Systems, Manned

- Performance potential of gas-core and fusion rockets: A mission applications survey. Laurence H. Fishbach and Edward A. Willis Jr. (JSR, SYN) 569
- Shuttle flight opportunities between stations orbiting the Earth and moon. Ronald D. Sugar and Robert A. Winneberger (JSR) 580
- Crew radiation dose from a high-impulse gas-core nuclear rocket plume. Charles C. Masser (JSR) 597
- Advanced extravehicular protective systems. P. F. Heimlich, J. G. Sutton, and E. H. Tepper (JSR) 921
- Man, teleoperators, and robots: An optimum team for space exploration. Edwin G. Johnsen (JSR, EN) 554
- Errata: "Design of an astronaut-operated, lunar-surface, antenna-aiming mechanism." N. S. Ajlouny and A. R. Spencer (JSR, ERR) 384

Lunar and Interplanetary Spacecraft Systems, Unmanned

- Transformation of received signal polarization angle to the plane of the ecliptic. C. Stelzried, T. Sato, and A. Abreu (JSR, SYN) 69
- Phobos/Deimos missions. E. Brian Pritchard and Edwin F. Harrison (JSR, SYN) 489
- Unmanned planetary spacecraft chemical rocket propulsion. H. Burlage Jr., W. Gin, and R. W. Riebling (JSR, SA) 729
- Identifying relevant scientific goals in planetary exploration. John P. Hennes and Charles V. Fulmer (JSR) 205
- Performance optimization technique for the 1975 Mars Viking Lander. Hugh N. Zeiner, Charles E. French, and Duane A. Howard (JSR) 364
- A mini-cavity reactor for low-thrust high-specific impulse propulsion. Robert E. Hyland (JSR) 601
- A practical approach to spacecraft structural dynamics problems. M. R. Trubert (JSR) 818
- Estimating trajectory correction requirements for multiple outer planet missions. L. D. Friedman, T. W. Hamilton, and R. H. Stanton (JSR) 909

- Reflecting ablating heat shields for planetary entry. David L. Peterson, Philip R. Nachtsheim, and John T. Howe (AIAA J) 1499
- Lunar radii determined from lunar orbiter 1 V/H sensor data. William R. Wells (JSR, EN) 463
- Man, teleoperators, and robots: An optimum team for space exploration. Edwin G. Johnsen (JSR, EN) 554

Lunar and Interplanetary Trajectories

- Transformation of received signal polarization angle to the plane of the ecliptic. C. Stelzried, T. Sato, and A. Abreu (JSR, SYN) 69
- Approximations of interplanetary trajectories by Chebyshev series. P. E. Nacozy and T. Feagin (AIAA J, SYN) 243
- Phobos/Deimos missions. E. Brian Pritchard and Edwin F. Harrison (JSR, SYN) 489
- Space tug performance optimization. Joseph D. Mason (JSR, SYN) 491
- Some impulsive rendezvous trajectories and their possible optimality. J. P. Peltier (AIAA J) 440
- Shuttle flight opportunities between stations orbiting the Earth and Moon. Ronald D. Sugar and Robert A. Winneberger (JSR) 580
- Processing onboard optical data for planetary approach navigation. Charles H. Acton Jr. (JSR) 746
- Gravity thrust Jupiter orbiter trajectories generated by encountering the Galilean satellites. Michael A. Minovitch (JSR) 751
- Orbit prediction in the presence of gravitational anomalies. Steven Roy Croopnick (AIAA J) 861
- Iterative method for calculating optimal finite-thrust orbit transfers. Ekkehart Grund and Edward T. Pitkin (AIAA J, TN) 221
- Trajectories that fly by Jupiter and Saturn and return to Earth. Victor R. Bond and Kim W. Anson (JSR, EN) 460
- Regularization of Grand Tour trajectories. Paul E. Nacozy (AIAA J, TN) 704
- An approximation to midcourse correction direction errors. James F. Kibler and George R. Young (JSR, EN) 709
- Asymptotic solution to the problem of optimal low-thrust energy increase. Robert A. Jacobson and William F. Powers (AIAA J, TN) 1679
- Comments on "A new guidance system figure-of-merit." Robert E. Roberson (JSR, TC) 384
- Reply by author to R. E. Roberson. George R. Young (JSR, TC) 384

Meteoroid Protection Systems

- A simple model for the shock wave induced by high-speed impact. Peter J. Torvik and Ronald J. F. Prater (JSR) 13
- Material phase transformation effects upon performance of spaced bumper systems. A. K. Hopkins, T. W. Lee, and H. F. Swift (JSR) 342
- Development of dual bumper wall construction for advanced spacecraft. A. J. Richardson and J. P. Sanders (JSR) 448

Radiation Protection Systems

- Dielectric breakdown in a dilute plasma. D. J. McKinzie Jr. and N. T. Grier (JSR, EN) 381

Space Crew Training

- Mathematical model of underwater simulation of astronaut extravehicular activities. Y. C. Pao (JSR, SYN) 229

Spacecraft Attitude Dynamics and Control

- Nonuniform propellant distribution in multiple tank rocket feed systems. Gilbert F. Pasley (JSR, SYN) 65
- Magnetic torquers for momentum desaturation of space station control moment gyros. A. G. Buckingham and J. Braumiller (JSR, SYN) 387
- Feasibility studies on an auxiliary propulsion system using MPD thrusters. James A. Burkhart and George R. Seikel (JSR, SYN) 487
- Attitude stability of dissipative dual-spin spacecraft. Arun K. Guha (AIAA J, SYN) 851
- Geomagnetic attitude control of an axisymmetric spinning satellite. Masamichi Shigehara (JSR) 391
- Roll resonance and passive roll control of magnetically stabilized satellites. R. W. Kamuller (AIAA J) 129
- Stability of motion of force-free spinning satellites with flexible appendages. Leonard Meirovitch and Robert A. Calico (JSR) 237
- Dynamics of spinning bodies containing elastic rods. Peter Kulla (JSR) 246
- Behavior of a two degree-of-freedom gyroscope in a rotating satellite. Thomas R. Kane and Saleh Athel (JSR) 253
- A method of Earth-point attitude control for elliptic orbits. Gary M. Connell (AIAA J) 258
- Thrust profile shaping for spin-stabilized vehicles. Lawrence D. Perlmutter (JSR) 259

- Attitude dynamics and control of an Apogee motor assembly with paired satellites. Marshall H. Kaplan and Norman M. Beck Jr. (JSR) 410
- Orbital eccentricity and angular momentum management scheme stability. Ronald A. Mayo (AIAA J) 446
- Linearization and Liapunov stability analysis of a class of dynamical differential equations. Peter W. Likins (AIAA J) 453
- Gravitational stabilization of a satellite in a fixed inertial orientation. T. R. Kane and K. F. Johansen (JSR) 493
- Optimal aerodynamic attitude stabilization of near-Earth satellites. R. Ravindran and P. C. Hughes (JSR) 499
- Effect of bearing flexibility on dual-spin satellite attitude stability. Pierre Y. Willems (JSR) 587
- Sensing accuracy of a conical scan CO₂ horizon sensor. R. Weiss (JSR) 607
- Stability of a dual-spin spacecraft with a flexible momentum wheel. P. M. Bainum, P. G. Fuechsel, and J. V. Fedor (JSR) 640
- An attitude reference system with discrete-correction capability. R. L. Duty and J. T. Bean (JSR) 647
- Passive stability of a spinning skylab. S. M. Seltzer (JSR) 651
- An electro-optic direction sensor. Alan R. Johnston (JSR) 690
- Stability analysis of all possible equilibria for gyrostat satellites under gravitational torques. Richard W. Longman (AIAA J) 800
- Attitude control of flexible space vehicles. Giacomo Porcelli (AIAA J) 807
- Constant and variable amplitude limit cycles in dual-spin spacecraft. D. L. Mingori, G. T. Tseng, and P. W. Likins (JSR) 825
- A quasi-inertial attitude mode for orbiting spacecraft. Bryant D. Elrod (JSR) 889
- Dynamics of a spinning space station with a counterweight connected by multiple cables. Douglas D. Nixon (JSR) 896
- Use of magnetometers and asymmetric antenna patterns for attitude determination. Anthony N. Delfico, Thomas E. Graedel, and Ralph Pringle Jr. (JSR) 903
- An automatic mass-trim system for spinning spacecraft. Kenneth R. Lorel and Benjamin O. Lange (AIAA J) 1012
- Simple approximations for optimum wobble damping of rotating satellites using a CMG. Fred Austin and Howard Berman (AIAA J) 1160
- Stability of a spinning body containing an elastic membrane via Liapunov's direct method. D. P. Brown and A. L. Schlack Jr. (AIAA J) 1286
- A mechanism for three-axis control of an ion thruster array. G. S. Perkins, K. G. Johnson, J. D. Ferrera, and T. D. Masek (JSR, EN) 218
- Optimum design parameters for a spin-stabilized spacecraft nutation damper. Gerald J. Cloutier (JSR, EN) 466
- Prediction of tank pressure history in a blowdown propellant feed system. Gilbert F. Pasley (JSR, EN) 473
- Parameters influencing dynamic stability characteristics of Viking-type entry configurations at Mach 1.76. Charles H. Whitlock and Paul M. Siemers III (JSR, EN) 558
- Attitude control of satellites using the solar radiation pressure. V. J. Modi and K. Kumar (JSR, EN) 711
- A universal three-angle basis for rotational kinematic analysis, simulation and control. James Nohl Churchyard (JSR, EN) 779
- Gravitational interaction torques. T. R. Kane and R. Cronin (JSR, EN) 783
- Analytical design of optimal nutation dampers. J. C. Amieux and M. Dureigne (JSR, EN) 934
- Instability of rotation about a centroidal axis of maximum moment of inertia. T. R. Kane and D. R. Teixeira Filho (AIAA J, TN) 1356
- Errata: "Rotational equations of motion for a triaxial rigid body." J. E. Cochran (AIAA J, ERR) 240

Spacecraft Communication Systems

- Bionic self-adaptive data compression. Barry K. Powell (JSR) 48
- Coverage obtained by controlled satellite constellations for regional communications. C. Byron Winn and Paul Mennemeyer (JSR) 92
- Analytic partial derivatives for estimating low-thrust parameters. Gordon W. Cunningham (JSR) 673
- High-power attenuation on re-entry vehicles. Ronald L. Fante, Russell G. Gamache, and Jerrold M. Yos (AIAA J, TN) 352

Spacecraft Configurational and Structural Design (including Loads)

- Construction and evaluation of a lightweight parabolic antenna model. D. L. Pope, W. H. Hewitt Jr., and J. G. Tetz (JSR, SYN) 289
- Coupling between structure and liquid propellants in a parallel-stage space shuttle design. D. D. Kana, W. L. Ko, P. H. Francis, and A. Nagy (JSR, SYN) 789
- Design of space stations for low atmospheric leakage. D. E. Charhut, R. M. Byke, and C. M. McClelland (JSR) 26
- Flexure of laminated Reissner plates. David N. Hutula and Donald G. Lemke (JSR) 84
- Evaluation of techniques to estimate Titan III-C flight loads. Michael H. Marx, Archibald W. Adkins, Louis L. Bucciarelli, and David C. Hyland (JSR) 264

- Statistical distribution of spacecraft maximum structural response. J.-N. Yang (JSR, EN) 57
- Thermal structural optimization of cryogenic storage systems. J. Navickas and H. R. Melton (JSR, EN) 927
- Bending and flexing of the Apollo 15 mass spectrometer boom. Rajnish Kumar and Shabeer Ahmed (JSR, EN) 940

Spacecraft Electric Power Systems

- Efficiencies of honeycomb absorbers of solar radiation. E. M. Sparrow, W. J. Bifano, and J. A. Healy (JSR, SYN) 67
- Multiphase nuclear fuel cavity reactor for power generation. B. Pinkel and E. C. Gritton (JSR, SYN) 721
- Potential of nuclear MHD electric power systems. George R. Seikel and Lester D. Nichols (JSR) 322
- Feasibility of high voltage solar arrays. J. R. Bayless, G. T. Todd, J. W. Ward, and W. Knauer (JSR) 522
- Low-cost solar electric testbed for ion thruster systems. Henning W. Scheel (JSR) 853
- Dielectric breakdown in a dilute plasma. D. J. McKinzie Jr. and N. T. Grier (JSR, EN) 381
- Electrophilic property of uranium hexafluoride. J. C. Wu, J. R. Williams, J. C. Handley, and B. P. Cooper (JSR, EN) 614

Spacecraft Flight Testing

Spacecraft Ground Testing and Simulation (including Components)

- Hypersonic low-density cone drag. A. G. Keel Jr., L. G. Kraige, R. D. Passmore, and R. N. Zapata (AIAA J, SYN) 561
- Evaluation of techniques to estimate Titan III-C flight loads. Michael H. Marx, Archibald W. Adkins, Louis L. Bucciarelli, and David C. Hyland (JSR) 264
- Mass center estimation in spinning drag-free satellites. J. David Powell (JSR) 399
- Current drainage to a high voltage probe in a dilute plasma. Norman T. Grier and Daniel J. McKinzie Jr. (JSR, EN) 706
- Nondestructive and impulsive testing of electroexplosive devices. Vincent J. Menichelli (JSR, EN) 936
- Multiple-orifice liquid injection into hypersonic air streams. William L. Weaver (AIAA J, TN) 1705

Spacecraft Habitability and Life Support Systems

- Design of space stations for low atmospheric leakage. D. E. Charhut, R. M. Byke, and C. M. McClelland (JSR) 26
- Space shower habitability technology. Arthur A. Rosener, Duane M. Parker, Scott C. Harris, and John B. Hall Jr. (JSR) 529
- Locomotion and cargo handling in simulated artificial gravity. James A. Green, William M. Piland and Ralph W. Stone Jr. (JSR) 535
- Integration of a fire detector into a spacecraft. R. M. F. Linford (JSR) 697
- Electroadhesive devices for zero-g intra/extravehicular activities. Gary P. Beasley and Walter W. Hankins (JSR, EN) 283

Spacecraft Mission Studies and Economics

- Phobos/Deimos missions. E. Brian Pritchard and Edwin F. Harrison (JSR, SYN) 489
- Performance potential of gas-core and fusion rockets: A mission applications survey. Laurence H. Fishbach and Edward A. Willis Jr. (JSR, SYN) 569
- Parameter optimization—An aid to thermal protection design. S. D. Williams and D. M. Curry (JSR) 33
- Identifying relevant scientific goals in planetary exploration. John P. Hennes and Charles V. Fulmer (JSR) 205
- Orbital eccentricity and angular momentum management scheme stability. Ronald A. Mayo (AIAA J) 446
- Shuttle flight opportunities between stations orbiting the Earth and Moon. Ronald D. Sugar and Robert A. Winneberger (JSR) 580
- Stable longitudes for 12-hr eccentric orbit satellites. C. A. Wagner (JSR) 757
- Comparison of advanced propulsion concepts for deep space exploration. W. E. Moeckel (JSR) 863
- A quasi-inertial attitude mode for orbiting spacecraft. Bryant D. Elrod (JSR) 889
- An approximation to midcourse correction direction errors. James F. Kibler and George R. Young (JSR, EN) 709
- Comments on "A new guidance system figure-of-merit." Robert E. Roberson (JSR, TC) 384
- Reply by author to R. E. Roberson. George R. Young (JSR, TC) 384

Spacecraft Navigation, Guidance, and Flight-Path Control Systems

- A redundant strapdown inertial reference unit (SIRU). Jerold P. Gilmore and Richard A. McKern (JSR) 39
- Effects of major errors sources on planetary spacecraft navigation accuracies. James F. Jordan, George A. Madrid, and Gerald E. Pease (JSR) 196
- Mass center estimation in spinning drag-free satellites. J. David Powell (JSR) 399
- Spectral factorization in periodically time-varying systems and application to navigation problems. T. Nishimura (JSR) 540
- Mass attraction reduction by integral control in spinning drag-free satellites. J. David Powell, Benjamin O. Lange, and Philip Jhin (JSR) 592
- Sensing accuracy of a conical scan CO₂ horizon sensor. R. Weiss (JSR) 607
- Processing onboard optical data for planetary approach navigation. Charles H. Acton Jr. (JSR) 746
- Orbit prediction in the presence of gravitational anomalies. Steven Roy Croopnick (AIAA J) 861
- Estimating trajectory correction requirements for multiple outer planet missions. L. D. Friedman, T. W. Hamilton, and R. H. Stanton (JSR) 909
- A Chebyshev minimax technique oriented to aerospace trajectory optimization problems. William F. Powers (AIAA J) 1291
- Comparison of minimum-propellant guidance laws for impulsive and bounded-thrust spacecraft. Alain L. Kornhauser and Paul M. Lion (AIAA J) 1297
- A mechanism for three-axis control of an ion thruster array. G. S. Perkins, K. G. Johnson, J. D. Ferrera, and T. D. Masek (JSR, EN) 218
- Iterative method for calculating optimal finite-thrust orbit transfers. Ekkehart Grund and Edward T. Pitkin (AIAA J, TN) 221
- Effect of lift variation on the impact of a rolling re-entry vehicle. J. P. Crenshaw (JSR, EN) 284
- Recursive filter initialization. Richard H. Battin, Steven R. Croopnick, and James M. Habbe (JSR, EN) 478
- Position determination from star-gravity measurements. R. H. Kidd, J. N. Dashiell, and T. J. Blucker (AIAA J, TN) 697
- Cross-hatching as an aeroviscoelastic problem. Earl H. Dowell (AIAA J, TN) 701

Spacecraft Propulsion Systems Integration

- Nonuniform propellant distribution in multiple tank rocket feed systems. Gilbert F. Pasley (JSR, SYN) 65
- Feasibility studies on an auxiliary propulsion system using MPD thrusters. James A. Burkhart and George R. Seikel (JSR, SYN) 487
- Survey of satellite auxiliary electric propulsion systems. Lee B. Holcomb (JSR, SA) 133
- Vehicle-scale investigation of a fluorine-hydrogen main tank injection pressurization system. E. C. Cady and D. W. Kendle (JSR) 158
- Thrust profile shaping for spin-stabilized vehicles. Lawrence D. Perlmutter (JSR) 259
- System tradeoffs for pulsed MPD thruster in space mission application. Hwachii Lien (JSR) 858
- Viscous effects on biowaste resistojet nozzle performance. James M. Kallis, Milton Goodman, and Carl R. Halbach (JSR) 869
- Pressure sensing and controller development. W. J. Wachter and J. Tobolski (JSR, EN) 214
- Prediction of tank pressure history in a blowdown propellant feed system. Gilbert F. Pasley (JSR, EN) 473

Spacecraft Sterilization

Spacecraft Temperature Control Systems

- Efficiencies of honeycomb absorbers of solar radiation. E. M. Sparrow, W. J. Bifano, and J. A. Healy (JSR, SYN) 67
- A review of thermal control materials for metallic junctions. Leroy S. Fletcher (JSR, SYN) 849
- Study of zirconium dioxide white pigment for space environment. H. K. Alan Kan, R. J. Champetier, and T. G. Erler (JSR) 103
- Measurement of apparent thermal conductivity of multilayer insulations at low-compressive loads. Vernon L. Holmes, Leon E. McCrary, and Dennis R. Krause (JSR) 791
- Simple conduction model for theoretical steady-state heat pipe performance. K. H. Sun and C. L. Tien (AIAA J) 1051
- NASA skylab I airlock module thermal capacitor. John L. Stafford and Michael G. Grote (JSR, EN) 452
- Thermal control of a Jovian survivable probe. Bruce G. Schelden (JSR, EN) 453
- Evaluation of the averaged specular component of reflectance. J. S. Torr and R. Viskanta (AIAA J, TN) 535

Spacecraft Tracking

- Effects of major errors sources on planetary spacecraft navigation accuracies. James F. Jordan, George A. Madrid, and Gerald E. Pease (JSR) 196
- Spectral factorization in periodically time-varying systems and application to navigation problems. T. Nishimura (JSR) 540
- Analytic partial derivatives for estimating low-thrust parameters. Gordon W. Cunningham (JSR) 673
- Filtering with perfectly correlated measurement noise. Robert Reasenberg (AIAA J, TN) 942
- Smooth empirical Bayes estimation of observation error variances in linear systems. H. F. Martz Jr. and M. W. Lian (AIAA J, TN) 956

Space Medicine (including Weightlessness, Radiation Effects, Psychology, etc.)

- Modification of orthostatic tolerance with periodic lower body negative pressure. D. B. Cramer (AIAA J) 751
- An integrated medical system for long-duration space missions. Sam L. Pool and Norman Belasco (JSR, EN) 613

Space Station Systems, Manned

- Gravity-gradient momentum management. Barry K. Powell (JSR, SYN) 385
- Magnetic torquers for momentum desaturation of space station control moment gyros. A. G. Buckingham and J. Braumiller (JSR, SYN) 387
- Atmospheric drag cross section of spacecraft solar arrays. Richard R. Williams (JSR, SYN) 565
- Natural frequencies of an orbiting space station. Edward L. Bernstein (JSR, SYN) 629
- Design of space stations for low atmospheric leakage. D. E. Charhut, R. M. Byke, and C. M. McClelland (JSR) 26
- Preliminary results of manned cargo transfer studies under simulated zero-g conditions. Amos A. Spady Jr., Gary P. Beasley, and Kenneth R. Yenni (JSR) 369
- Orbital eccentricity and angular momentum management scheme stability. Ronald A. Mayo (AIAA J) 446
- Space shower habitability technology. Arthur A. Rosener, Duane M. Parker, Scott C. Harris, and John B. Hall Jr. (JSR) 529
- Passive stability of a spinning skylab. S. M. Seltzer (JSR) 651
- Integration of a fire detector into a spacecraft. R. M. F. Linford (JSR) 697
- Dynamics of a spinning space station with a counterweight connected by multiple cables. Douglas D. Nixon (JSR) 896
- Advanced extravehicular protective systems. P. F. Heimlich, J. G. Sutton, and E. H. Tepper (JSR) 921
- Simple approximations for optimum wobble damping of rotating satellites using a CMG. Fred Austin and Howard Berman (AIAA J) 1160

STRUCTURAL MECHANICS AND MATERIALS

Aeroelasticity and Hydroelasticity

- A general theory of parachute opening. Edward W. Ross Jr. (JA, SYN) 257
- Launch vehicle gust penetration loads. L. E. Ericsson, J. P. Reding, and R. A. Guenther (JSR) 19
- Evaluation of techniques for predicting static aeroelastic effects on flexible aircraft. Irving Abel (JA) 43
- Investigations concerning the coupled wing-fuselage-tail flutter phenomenon. W. J. Mykytow, T. E. Noll, L. J. Huttsett, and M. H. Shirk (JA) 48
- Refinement of the nonplanar aspects of the subsonic doublet-lattice lifting surface method. W. P. Rodden, J. P. Giesing, and T. P. Kalman (JA) 69
- A nonlinear method applied to variable-thickness plates. Tsai-Chen Soong (AIAA J) 148
- Erratum: "A nonlinear method applied to variable-thickness plates." Tsai-Chen Soong (AIAA J, ER) 720
- Further developments in consistent unsteady supersonic aerodynamic coefficients. Kariappa and G. C. C. Smith (JA) 157
- Quasi-static moment measurements for airfoils in an annular cascade. F. Sisto and R. H. Ni (JA) 298
- Unsteady subsonic collocation method for wings with and without control surfaces. Atlee M. Cunningham Jr. (JA) 413
- Analysis of supersonic-hypersonic flutter of lifting surfaces at angle of attack. E. Carson Yates Jr. and Robert M. Bennett (JA) 481
- Aeroelastic optimization of a panel in high Mach number supersonic flow. Terrence A. Weisshaar (JA) 611
- Subsonic steady and oscillatory aerodynamics for multiple interfering wings and bodies. J. P. Giesing, T. P. Kálmán, and W. P. Rodden (JA) 693

- Nonlinear panel response from a turbulent boundary layer. R. Vaicaitis, C. M. Jan, and M. Shinozuka (AIAA J) 895
- Response of finite periodic beam to turbulent boundary-layer pressure excitation. R. Vaicaitis and Y. K. Lin (AIAA J) 1020
- Perturbation and harmonic balance methods for nonlinear panel flutter. Ching-Chiang Kuo, Luigi Morino, and John Dugundji (AIAA J) 1479
- Evaluation of Reissner's correction for finite span aerodynamic effects. B. K. Donaldson (JA, EN) 507
- Cross-hatching as an aeroviscoelastic problem. Earl H. Dowell (AIAA J, TN) 701
- Feedback control of flutter instability in a continuous elastic system. Charles F. Kalmbach (AIAA J, TN) 711
- Influence of splitter plate on galloping response of an angle section. J. E. Slater and V. J. Modi (AIAA J, TN) 838
- Panel-flutter analysis of a thermal protection-shield concept for the space shuttle. Herbert J. Cunningham (AIAA J, TN) 1101
- Aerodynamic generalized forces for supersonic shell flutter. S. Parthan and D. J. Johns (AIAA J, TN) 1369
- Rates of change of flutter Mach number and flutter frequency. S. S. Rao (AIAA J, TN) 1526
- Stability of clamped rectangular plates in uniform subsonic flow. C. H. Ellen (AIAA J, TN) 1716

Hypervelocity Impact

- A simple model for the shock wave induced by high-speed impact. Peter J. Torvik and Ronald J. F. Prater (JSR) 13
- Material phase transformation effects upon performance of spaced bumper systems. A. K. Hopkins, T. W. Lee, and H. F. Swift (JSR) 342
- Development of dual bumper wall construction for advanced spacecraft. A. J. Richardson and J. P. Sanders (JSR) 448
- Analytical model of the flash produced in aluminum-aluminum hypervelocity impacts. Kenneth E. Harwell, Kynric M. Pell, and T. Dwayne McCay (JSR) 682

Materials, Properties of

- Formulating propellants for fully case-bonded end-burning motors. H. E. Marsh Jr. and D. E. Udlock (JSR, SYN) 625
- An investigation of fatigue failure of materials under broad band random vibrations. T. C. Huang and R. W. Lanz (AIAA J, SYN) 977
- Experimental investigation of strains in fabric under biaxial and shear forces. Vernon L. Alley Jr. and Richard W. Faison (JA) 55
- Application of fracture mechanics to the estimation of fatigue life. Martin W. Schwartz (A/A, April*) 63
- *See Note on page 3
- Decelerator fabric constants required by the generalized form of Hooke's law. V. L. Alley Jr. and R. W. Faison (JA) 211
- Strength of anisotropic materials under combined stresses. A. H. Puppo and H. A. Evensen (AIAA J) 468
- Parametric correlation of very short-time, stress-rupture data for design purposes. P. K. Raut, J. P. McGinnis, and W. R. Clough (JSR) 812
- Bending rigidity of an inflated circular cylindrical membrane of rubbery materials. Tatsuzo Koga (AIAA J) 1485
- Effect of time-varying external pressure on creep collapse of a cylindrical shell. H. Bargmann (AIAA J, TN) 327
- Dielectric breakdown in a dilute plasma. D. J. McKinzie Jr. and N. T. Grier (JSR, EN) 381
- Load-time dependent relaxation of residual stresses. Darrell Simpkins, Robert L. Neulieb, and Dennis J. Golden (JA, EN) 867
- Photoelastic model analysis of sandwich beams. S. K. Bansal and C. L. Amba-Rao (AIAA J, TN) 1346
- Axisymmetric plastic response of rings to short-duration pressure pulses. Michael J. Forrestal and Harold C. Walling (AIAA J, TN) 1382

Structural Composite Materials (including Coatings)

- Application of thermal barriers to high-temperature engine components. R. L. Newman, K. R. Cross, W. C. Spicer, H. D. Sheets, and T. D. Driskell (JA, SYN) 609
- Study of stresses and deformations in sandwich plates with anisotropic facings. Walter P. Stroud Jr. and Herbert B. Kingsbury (JA, SYN) 801
- Evaluation of a boron-epoxy reinforced titanium truss. Nicholas Corvelli and Robert L. Carri (JSR, SYN) 851
- Deflection of orthotropic sandwich plates. Jamal J. Azar and Peter C. Johnson (AIAA J, SYN) 981
- Some approximations in the nonlinear vibrations of unsymmetrically laminated plates. James A. Bennett (AIAA J, SYN) 1145
- Compressive strength of titanium alloy skin-stringer panels selectively reinforced with boron-aluminum composite. Harvey W. Herring and Robert L. Carri (AIAA J, SYN) 1555
- Material design concepts for filament-wound, graphite-graphite heatshields. Tommy R. Guess and Charles W. Bert (JSR) 165

- Strength of anisotropic materials under combined stresses. A. H. Puppo and H. A. Evensen (AIAA J) 468
- Design and test of a boron/epoxy reinforced airframe. Melvin J. Rich and Robert T. Welge (JA) 790
- Application of an improved transpiration cooling concept to space shuttle type vehicles. John R. Schuster and Thomas G. Lee (JSR) 804
- Large deflection microstructure theory for a composite beam. C. T. Sun, R. T. Gilmore, and S. L. Koh (AIAA J) 1314
- Holographic interferometric mode shape patterns of cored mirrors. Jacob M. Miller (JSR, EN) 277
- Bending of an orthotropic cantilever. R. Sierakowski, R. S. Van Huysen, and J. L. Krahula (AIAA J, TN) 708
- A consistent treatment of transverse shear deformations in laminated anisotropic plates. E. Reissner (AIAA J, TN) 716
- Graded thermal barrier—A new approach for turbine engine cooling. J. R. Cavanagh, K. R. Cross, R. L. Newman, and W. C. Spicer (JA, EN) 795
- Selective reinforcement of wing structure for flutter prevention. Paul A. Cooper and W. Jefferson Stroud (JA, EN) 797
- Elastic behavior of multilayered bidirectional composites. N. J. Pagano and Sharon J. Hatfield (AIAA J, TN) 931
- Strongly coupled stress waves in heterogeneous plates. A. S. D. Wang, P. C. Chou, and J. L. Rose (AIAA J, TN) 1088
- Mechanical behavior of fiber reinforced cylindrical shells. J. Padovan and J. Lestingi (AIAA J, TN) 1239
- Analysis of anisotropic rectangular plates. J. M. Whitney (AIAA J, TN) 1344
- Photoelastic model analysis of sandwich beams. S. K. Bansal and C. L. Amba-Rao (AIAA J, TN) 1346
- Solution of stresses and strains for laminated monoclinic cylinders. Joseph Padovan (AIAA J, TN) 1364

Structural Design, Optimal

- Discrete variable approximation to minimum weight panels with fixed flutter speed. Bion L. Pierson (AIAA J, SYN) 1147
- Minimum weight design of elastic redundant trusses under multiple static loading conditions. C. Y. Sheu and L. A. Schmit Jr. (AIAA J) 155
- Synthesis of stiffened conical shells. W. A. Thornton (JSR) 189
- Structural considerations in the development of an extremely lightweight decelerator. Peter G. Niederer (JSR) 351
- Methodology for structural optimization of STOL aircraft vertical stabilizers. Bertram C. Wollner (JA) 360
- Intermediate diagonal tension field shear beam development for the Boeing SST. Raymond M. Mello, Robert E. Sherrer, and Max D. Musgrove (JA) 470
- Aeroelastic optimization of a panel in high Mach number supersonic flow. Terrence A. Weisshaar (JA) 611
- A mixed optimization method for automated design of fuselage structures. Jaroslav Sobieszczanski and David Loendorf (JA) 805
- Automated procedures for sizing aerospace vehicle structures (SAVES). Gary L. Giles, Charles L. Blackburn, and Sidney C. Dixon (JA) 812
- Thin-walled beams in frame synthesis. Richard B. Nelson and Lewis P. Felton (AIAA J) 1565
- Second derivatives of the flutter velocity and the optimization of aircraft structures. Carl S. Rudisill and Kumar G. Bhatia (AIAA J) 1569
- Optimization of simple structures with higher mode frequency constraints. Terrence A. Weisshaar (AIAA J, TN) 691
- Selective reinforcement of wing structure for flutter prevention. Paul A. Cooper and W. Jefferson Stroud (JA, EN) 797
- Maximum thrust nozzles. William E. Conway and Aivars Celmiņš (AIAA J, TN) 1241
- Photoelastic model analysis of sandwich beams. S. K. Bansal and C. L. Amba-Rao (AIAA J, TN) 1346
- Rates of change of flutter Mach number and flutter frequency. S. S. Rao (AIAA J, TN) 1526
- Erratum: "Minimum-mass design of a plate-like structure for specified fundamental frequency." Jean-Louis Armand (AIAA J, ERR) 240
- Errata: "Design of an astronaut-operated, lunar-surface antenna-aiming mechanism." N. S. Ajlouny and A. R. Spencer (JSR, ERR) 384

Structural Dynamic Analysis

- Status of engine rotor burst protection program for aircraft. Patrick T. Chiarito (JA, SYN) 449
- Dynamic response of moderately thick cylindrical panels. Tien-Yu Tsui (AIAA J, SYN) 565
- Natural frequencies of an orbiting space station. Edward L. Bernstein (JSR, SYN) 629
- Coupling between structure and liquid propellants in a parallel-stage space shuttle design. D. D. Kana, W. L. Ko, P. H. Francis, and A. Nagy (JSR, SYN) 789
- Nonlinear resonant vibrations of infinitely long cylindrical shells. Jerry H. Ginsberg (AIAA J, SYN) 979
- Review and application of prestressed shell theories to blood vessel wave propagation. J. A. Bailie (AIAA J, SYN) 1143

- Some approximations in the nonlinear vibrations of unsymmetrically laminated plates. James A. Bennett (AIAA J, SYN) 1145
- Pseudo-static deformation and frequencies of rotating turbomachinery blades. M. A. Dokainish and S. Rawtani (AIAA J, SYN) 1397
- Vibration of cylindrical shells by hybrid finite element method. B. Tabarrok and N. Gass (AIAA J, SYN) 1553
- Monte Carlo solution of nonlinear vibrations. M. Shinozuka and Y.-K. Wen (AIAA J) 37
- Application of fracture mechanics to the estimation of fatigue life. Martin W. Schwartz (A/A, April*) 63
- *See note on page 3
- A theory of vibrations in parachutes. Geoffrey W. H. Stevens (JA) 74
- Structural considerations of the human vertebral column under + G_z impact acceleration. Channing L. Ewing, Albert I. King, and Priyaranjan Prasad (JA) 84
- Modes of vibration in a circular plate with three simple support points. Changhui Chi (AIAA J) 142
- Prediction of cylindrical shell response by statistical energy methods. Daniel D. Kana, Wen-Hwa Chu, and Roger L. Bessey (JSR) 182
- Stability of motion of force-free spinning satellites with flexible appendages. Leonard Meirovitch and Robert A. Calico (JSR) 237
- Evaluation of techniques to estimate Titan III-C flight loads. Michael H. Marx, Archibald W. Adkins, Louis L. Bucciarelli, and David C. Hyland (JSR) 264
- Longitudinal elastic waves in a composite bar with conical sections. S. S. Chiu (AIAA J) 273
- Nonlinear acoustic response analysis of plates using the finite element method. Chintun Hwang and W. S. Pi (AIAA J) 276
- Unsteady subsonic collocation method for wings with and without control surfaces. Atlee M. Cunningham Jr. (JA) 413
- A feasibility study of active wing/store flutter control. William E. Triplett (JA) 438
- Random eigenvalue problems in structural analysis. Masanobu Shinozuka and Clifford J. Astill (AIAA J) 456
- Random gust response statistics for coupled torsion-flapping rotor blade vibrations. G. H. Gaonkar, K. H. Hohenemser and S. K. Yin (JA) 726
- Dynamic response of elastically supported circular plates to a general surface load. A. L. Schlack Jr., P. G. Kessel, and W. N. Dong (AIAA J) 733
- Nonlinear panel response from a turbulent boundary layer. R. Vaicaitis, C. M. Jan, and M. Shinozuka (AIAA J) 895
- Dynamics of a spinning space station with a counter-weight connected by multiple cables. Douglas D. Nixon (JSR) 896
- Response of discrete linear systems to forcing functions with inequality constraints. C. D. Michalopoulos and T. A. Riley (AIAA J) 1016
- Response of finite periodic beam to turbulent boundary-layer pressure excitation. R. Vaicaitis and Y. K. Lin (AIAA J) 1020
- Stability of a spinning body containing an elastic membrane via Liapunov's direct method. D. P. Brown and A. L. Schlack Jr. (AIAA J) 1286
- Free vibration of prestressed cylindrical shells having arbitrary homogeneous boundary conditions. Leslie E. Penzes and Harry Kraus (AIAA J) 1309
- Large deflection microstructure theory for a composite beam. C. T. Sun, R. T. Gilmore, and S. L. Koh (AIAA J) 1314
- Structural response to segmented nonstationary random excitation. Robert E. Holman and Gary C. Hart (AIAA J) 1473
- Spatial decay in the response of damped periodic beam. R. Vaicaitis, K. Doi, and Y. K. Lin (JA, EN) 91
- Holographic interferometric mode shape patterns of cored mirrors. Jacob M. Miller (JSR, EN) 277
- Accuracy of complex finite elements. Isaac Fried (AIAA J, TN) 347
- Nonlinear vibration of beams by matrix displacement method. Chuh Mei (AIAA J, TN) 355
- Higher vibration modes by matrix iteration. L. W. Rehfield (JA, EN) 505
- Dynamical torsion theory of rods deduced from the equations of linear elasticity. E. J. Brunelle (AIAA J, TN) 524
- Method for constructing a full modal damping matrix from experimental measurements. T. K. Hasselman (AIAA J, TN) 526
- Structural optimization in random vibration environment. N. C. Nigam (AIAA J, TN) 551
- Experimental investigation of a nonlinear elastic suspension. T. E. Shoup (AIAA J, TN) 559
- Optimization of simple structures with higher mode frequency constraints. Terrence A. Weisshaar (AIAA J, TN) 691
- Ultraharmonic vibrations of nonlinear beams. J. A. Bennett and R. L. Rinkel (AIAA J, TN) 715
- Buckling and vibration analysis for stiffened orthotropic shells of revolution. V. Svalbonas and T. Balderes (AIAA J, TN) 944
- Equation for nonlinear vibrations of shells. N. Anderson (AIAA J, TN) 953
- Rational reduction of large-scale eigenvalue problems. Kari Appa, G. C. Smith, and J. T. Hughes (AIAA J, TN) 964
- Rayleigh wave effects in an elastic half-space. H. R. Aggarwal (AIAA J, TN) 1086
- Strongly coupled stress waves in heterogeneous plates. A. S. D. Wang, P. C. Chou, and J. L. Rose (AIAA J, TN) 1088
- Dynamic snap-buckling of shallow arches under inclined loads. V. Sundararajan and D. S. Kumani (AIAA J, TN) 1090
- An advanced stochastic model for threshold crossing studies of rotor blade vibrations. Gopal H. Gaonkar and Kurt H. Hohenemser (AIAA J, TN) 1100
- Best finite elements distribution around a singularity. Isaac Fried and Shok Keng Yang (AIAA J, TN) 1244
- Bending stresses propagating from the clamped support of an impulsively loaded beam. M. J. Sagartz and M. J. Forrestal (AIAA J, TN) 1373
- Nonlinear axisymmetric flexural vibration equations of a cylindrically anisotropic circular plate. Chi-lung Huang (AIAA J, TN) 1378
- Axisymmetric plastic response of rings to short-duration pressure pulses. Michael J. Forrestal and Harold C. Walling (AIAA J, TN) 1382
- Condensation of finite element eigenproblems. Isaac Fried (AIAA J, TN) 1529
- Finite elements for axisymmetric solids under arbitrary loadings with nodes on origin. Ted Belytschko (AIAA J, TN) 1532
- Transient interaction of a flexible ring-reinforced shell and a fluid medium. Jerry W. Berglund (AIAA J, TN) 1540
- Lateral vibration and stability relationship of elastically restrained circular plates. K. Singa Rao and C. L. Amba-Rao (AIAA J, TN) 1689
- Vibration of cylindrically orthotropic circular plates. P. G. Kirmser, C. L. Huang, and H. K. Woo (AIAA J, TN) 1690
- Bending stress in an impulsively loaded cylindrical shell of exponentially varying thickness. H. D. Fisher (AIAA J, TN) 1699
- Nonlinear vibrations of rectangular plates with cutouts. J. Ramachandran and D. V. Reddy (AIAA J, TN) 1709
- Comments on "Synthesis of tire equations for use in shimmy and other dynamic studies." R. J. Black (JA, TC) 318
- Reply by authors to R. J. Black. L. C. Rogers and H. K. Brewer (JA, TC) 320
- Comment on "Lower bounds on deformations of dynamically loaded rigid-plastic continua." Tomasz Wierzbicki (AIAA J, TC) 363
- Erratum: "Minimum-mass design of a plate-like structure for specified fundamental frequency." Jean-Louis Armand (AIAA J, ERR) 240
- Errata: "Vibrations of pressurized orthotropic shells." Clive L. Dym (AIAA J, ERR) 720
- Errata: "Roots of the cylindrical shell characteristic equation for harmonic circumferential edge loading." P. Seide (AIAA J, ERR) 1263

Structural Stability Analysis

- Koiter's buckling mode for short cylindrical shells. C. P. Mangelsdorf (AIAA J, SYN) 13
- Buckling of shallow spherical caps and truncated hemispheres. R. E. Ball and W. C. Stilwell (AIAA J, SYN) 241
- Electric snap-through analysis of curved plates using discrete elements. T. Y. Yang (AIAA J, SYN) 371
- Nonlinear resonant vibrations of infinitely long cylindrical shells. Jerry H. Ginsberg (AIAA J, SYN) 979
- Random buckling behavior in axially loaded cylindrical shells with axisymmetric imperfections. J. Roorda and J. S. Hansen (JSR) 88
- Elastic-inelastic buckling of stiffened panels subject to thermal gradient. John G. Tawresey and James E. Lium (JA) 178
- Random eigenvalue problems in structural analysis. Masanobu Shinozuka and Clifford J. Astill (AIAA J) 456
- Bifurcation buckling as an approximation of the collapse for general shells. B. O. Almroth and F. A. Brogan (AIAA J) 463
- Intermediate diagonal tension field shear beam development for the Boeing SST. Raymond M. Mello, Robert E. Sherrer, and Max D. Musgrove (JA) 470
- Buckling of orthotropic, curved, sandwich panels subjected to edge shear loads. Otha B. Davenport and Charles W. Bert (JA) 477
- Theoretical tire equations for shimmy and other dynamic studies. Lynn C. Rogers (JA) 585
- Effect of a circular hole on the buckling of cylindrical shells loaded by axial compression. James H. Starnes Jr. (AIAA J) 1466
- Effect of a slot on the buckling load of a cylindrical shell with a circular cutout. James H. Starnes Jr. (AIAA J, TN) 227
- Buckling of nearly cylindrical shells under lateral pressure. Paul A. Cooper (AIAA J, TN) 232
- Effect of time-varying external pressure on creep collapse of a cylindrical shell. H. Bargmann (AIAA J, TN) 327
- A general linear geometric matrix for a fully compatible finite element. David V. Wallerstein (AIAA J, TN) 545
- Buckling of a circular cylindrical shell in axial compression and SS4 boundary conditions. D. Durban and A. Libai (AIAA J, TN) 935
- Buckling and vibration analysis for stiffened orthotropic shells of revolution. V. Svalbonas and T. Balderes (AIAA J, TN) 944
- Solution of a plastic buckling paradox. Aris Phillips (AIAA J, TN) 951
- Determining the nature of instability in nonconservative problems. Raymond H. Plaut (AIAA J, TN) 967
- Dynamic snap-buckling of shallow arches under inclined loads. V. Sundararajan and D. S. Kumani (AIAA J, TN) 1090
- Convergence criteria for iterative processes. Pål G. Bergan and Ray W. Clough (AIAA J, TN) 1107
- Axisymmetric buckling of annular sandwich panels. Amelio J. Amato and Ibrahim K. Ebcioglu (AIAA J, TN) 1351
- Initial postbuckling of circular rings under pressure loads. L. W. Rehfield (AIAA J, TN) 1358

- Lateral vibration and stability relationship of elastically restrained circular plates. K. Singa Rao and C. L. Amba-Rao (AIAA J, TN) 1689
- Axisymmetric buckling of uniformly loaded spherical caps undergoing plastic deformation. Michael T. Wilkinson and Robert E. Fulton (AIAA J, TN) 1695
- Stability of clamped rectangular plates in uniform subsonic flow. C. H. Ellen (AIAA J, TN) 1716

Structural Static Analysis

- Electric snap-through analysis of curved plates using discrete elements. T. Y. Yang (AIAA J, SYN) 371
- A high-precision curved shell finite element. Lawrence J. Brombolich and Philip L. Gould (AIAA J, SYN) 727
- Analysis of a ring with a hinged cross section. Harry E. Williams (JSR, SYN) 787
- Study of stresses and deformations in sandwich plates with anisotropic facings. Walter P. Stroud Jr. and Herbert B. Kingsbury (JA, SYN) 801
- Deflection of orthotropic sandwich plates. Jamal J. Azar and Peter C. Johnson (AIAA J, SYN) 981
- Pseudo-static deformation and frequencies of rotating turbomachinery blades. M. A. Dokainish and S. Rawtani (AIAA J, SYN) 1397
- Finite deflections of uniformly loaded, clamped, rectangular, anisotropic plates. C. Y. Chia (AIAA J, SYN) 1399
- Evaluation of techniques for predicting static aeroelastic effects on flexible aircraft. Irving Abel (JA) 43
- Experimental investigation of strains in fabric under biaxial and shear forces. Vernon L. Alley Jr. and Richard W. Faison (JA) 55
- Effects of bending stiffness in tow and salvage cables. John J. McCoy (JH) 77
- Asymptotic solution of a thick spherical shell with circular holes. Howard N. Franklin and Jerome M. Klosner (JH) 90
- A nonlinear method applied to variable-thickness plates. Tsai-Chen Soong (AIAA J) 148
- Erratum: "A nonlinear method applied to variable-thickness plates." Tsai-Chen Soong (AIAA J, ERR) 720
- Structural analysis of a parawing during deployment. Paul M. Kenner (JA) 168
- Development and evaluation of solution procedures for geometrically nonlinear structural analysis. Walter E. Haisler, James A. Stricklin, and Frederick J. Stebbins (AIAA J) 264
- Crippling and buckling of corrugated ring-stiffened cylinders. David Bushnell (JSR) 357
- Pressurized crack behavior in two-dimensional rocket motor geometries. E. C. Francis, G. H. Lindsey, and R. R. Parmerter (JSR) 415
- Intermediate diagonal tension field shear beam development for the Boeing SST. Raymond M. Mello, Robert E. Sherrer, and Max D. Musgrove (JA) 470
- Slip front mechanisms in mechanical joints. Clark T. Rollins and Paul E. Sandorff (JA) 581
- Bending of a uniformly loaded circular plate with mixed boundary conditions. Bernhard Stahl and Leon M. Keer (AIAA J) 739
- Stress analysis of axisymmetric solids with asymmetric properties. James G. Crose (AIAA J) 866
- Bending rigidity of an inflated circular cylindrical membrane of rubbery materials. Tatszo Koga (AIAA J) 1485
- A strain energy basis for studies of element stiffness matrices. G. L. Rigby and G. M. McNeice (AIAA J) 1490
- Interpolation using surface splines. Robert L. Harder and Robert N. Desmarais (JA, EN) 189
- Condition of finite element matrices generated from nonuniform meshes. Isaac Fried (AIAA J, TN) 219
- Development of two simple shell elements. Jean L. Batoz and Gurbachan Dhatt (AIAA J, TN) 237
- Deflection function for the symmetrical bending of circular plates. Gerard C. Pardo (AIAA J, TN) 239
- Accuracy of complex finite elements. Isaac Fried (AIAA J, TN) 347
- Constitutive equations for bimodulus elastic materials. Farhad Tabaddor (AIAA J, TN) 516
- Bending of a simply supported plate clamped about a central circular hole. Roy C. Fedotoff and John F. Carney III (AIAA J, TN) 518
- Control theory formulation for nonlinear elastic analysis of trusses. N. M. Singaraj and Jawahar K. Sridhar Rao (AIAA J, TN) 527
- Annular plate with supporting edge beams. B. Moustakakis and John F. Carney III (AIAA J, TN) 529
- A consistent approach for treating distributed loading in the matrix force method. L. W. Rehfield (JA, EN) 602
- Analysis of a clamped skew plate under uniform loading. C. S. Kale, S. Gopalacharyulu, and B. S. Ramachandra Rao (AIAA J, TN) 695
- Bending of an orthotropic cantilever. R. Sierakowski, R. S. Van Huysen, and J. L. Krahula (AIAA J, TN) 708
- Structural averaging of stresses in the hybrid stress model. John P. Wolf (AIAA J, TN) 843
- Computing pressure cure viscoelastic effects in solid propellants. David A. Hunt (JSR, EN) 937
- Statics of transversely isotropic beams. E. J. Brunelle (AIAA J, TN) 1083

- Convergence criteria for iterative processes. Pål G. Bergan and Ray W. Clough (AIAA J, TN) 1107
- Mechanical behavior of fiber reinforced cylindrical shells. J. Padovan and J. Lestingi (AIAA J, TN) 1239
- Best finite elements distribution around a singularity. Isaac Fried and Shok Keng Yang (AIAA J, TN) 1244
- Mixed quadrilateral elements for bending. Jean Bron and Gurbachan Dhatt (AIAA J, TN) 1359
- Solution of stresses and strains for laminated monoclinic cylinders. Joseph Padovan (AIAA J, TN) 1364
- Plane stress analysis of an annular disk with distorted inner hole. Thomas J. Kim (AIAA J, TN) 1374
- Finite elements for axisymmetric solids under arbitrary loadings with nodes on origin. Ted Belytschko (AIAA J, TN) 1532
- Torsion of certain prismatic bars. Amir K. Naghdi (AIAA J, TN) 1543
- Axisymmetric buckling of uniformly loaded spherical caps undergoing plastic deformation. Michael T. Wilkinson and Robert E. Fulton (AIAA J, TN) 1695
- Influence coefficients for end-loaded conical frustums. Paul Seide (AIAA J, TN) 1717
- Comment on "Large deflection analysis of plates." R. C. Dixon (AIAA J, TC) 367
- Comment on "Interpolation using surface splines." William P. Rodden, Jean A. McGrew, and Terez P. Kálmán (JA, TC) 869
- Reply by authors to W. P. Rodden, J. A. McGrew, and T. P. Kálmán. Robert L. Harder and Robert N. Desmarais (JA, TC) 871
- Erratum: "Constitutive equations for bimodulus elastic materials." Farhad Tabaddor (AIAA J, ERR) 976

Thermal Stresses

- Heat transfer in solid-propellant motors. Anthony San Miguel and Robert M. McCarten (JSR, SYN) 129
- Material design concepts for filament-wound, graphite-graphite heatshields. Tommy R. Guess and Charles W. Bert (JSR) 165
- Stress analysis of axisymmetric solids with asymmetric properties. James G. Crose (AIAA J) 866
- Thermoelastic stress in a rod due to distributed time-dependent heat sources. Snehanshu Kumar Roy Choudhuri (AIAA J, TN) 531
- Thermal bending of moderately thick rectangular plate. Y. C. Das and B. K. Rath (AIAA J, TN) 1349

THERMOPHYSICS AND THERMOCHEMISTRY

Atomic, Molecular, and Plasma Properties

- Measurements of the H β line shape using a fiber optics slit system. George H. Stickford Jr. (AIAA J, SYN) 1269
- An immersion-type electrical conductivity probe for anisotropic plasmas. Elie J. Stubbe (AIAA J) 92
- Thermodynamic properties of hydrogen-helium plasmas. H. F. Nelson (JSR) 177
- Errata: "Thermodynamic properties of hydrogen-helium plasmas." H. F. Nelson (JSR, ERR) 720
- Photon generators and engines for laser power transmission. Abraham Hertzberg, Walter H. Christiansen, Earl W. Johnston, and Harlow G. Ahlstrom (AIAA J) 394
- Nuclear pumped gas lasers. Karlheinz Thom and Richard T. Schneider (AIAA J) 400
- Physics of CO₂ electric discharge lasers. R. H. Bullis, W. L. Nighan, M. C. Fowler, and W. J. Wiegand (AIAA J) 407
- Measurement of nitrogen plasma transport properties. Paul W. Schreiber, Allen M. Hunter II, and Kenneth R. Benedetto (AIAA J) 670
- Population inversion of atomic carbon in recombining plasma flow. S. W. Bowen and C. Park (AIAA J, TN) 522
- Electrophilic property of uranium hexafluoride. J. C. Wu, J. R. Williams, J. C. Handley, and B. P. Cooper (JSR, EN) 614

Heat Conduction

- Heat transfer in solid-propellant motors. Anthony San Miguel and Robert M. McCarten (JSR, SYN) 129
- A review of thermal control materials for metallic junctions. Leroy S. Fletcher (JSR, SYN) 849
- Nonlinear heat conductions in rarefied gases. Y. S. Lou and T. K. Shih (AIAA J, SYN) 1149
- Approximate optimal control of distributed parameter systems. John T. Betts and Stephen J. Citron (AIAA J) 19
- Parameter optimization—An aid to thermal protection design. S. D. Williams and D. M. Curry (JSR) 33
- Temperature distributions in anisotropic shells of revolution. Joseph Padovan (AIAA J) 60
- Bleaching wave phenomena. Loren C. Steinhauer and Harlow G. Ahlstrom (AIAA J) 429
- Heat flux measurement using swept null point calorimetry. Charles A. Powars, William S. Kennedy, and Roald A. Rindal (JSR) 668

- Measurement of nitrogen plasma transport properties. Paul W. Schreiber, Allen M. Hunter II, and Kenneth R. Benedetto (AIAA J) 670
- Prediction of transient temperature distributions with embedded thermocouples. Murray Imber and Jamal Khan (AIAA J) 784
- Application of an improved transpiration cooling concept to space shuttle type vehicles. John R. Schuster and Thomas G. Lee (JSR) 804
- Film cooling of insert turbine vane trailing edges. E. C. Bassiot (JA) 849
- Simple conduction model for theoretical steady-state heat pipe performance. K. H. Sun and C. L. Tien (AIAA J) 1051
- Biot's variational principle for a Stefan problem. Anant Prasad and H. C. Agrawal (AIAA J, TN) 325
- Thermal control of a Jovian survivable probe. Bruce G. Schelden (JSR, EN) 453
- Practical problems in cryosurgical techniques. Andrew A. Gage (JSR, EN) 844
- Approximate temperature distribution for a diffuse, highly reflecting material. Kenneth C. Weston, John T. Howe and Michael J. Green (AIAA J, TN) 1252

Liquid and Solid Thermophysical Properties

- Study of zirconium dioxide white pigment for space environment. H. K. Alan Kan, R. J. Champetier, and T. G. Erler (JSR) 103
- Vapor escape from a droplet containing a volatile solute. Daniel E. Rosner (AIAA J, TN) 339

Material Ablation

- Erosion of graphite surface exposed to high-temperature supersonic hydrogen gas. Om P. Sharma (JSR, SYN) 785
- Ducts for material and ablation studies. E. M. Winkler, R. L. Humphrey, and M. T. Madden (JSR) 172
- Silica reinforcement and char reactions in the Apollo heat shield. D. E. Cagliostro, H. Goldstein, and J. A. Parker (JSR) 346
- Foreign gas injection into three-dimensional stagnation point flows. Andrzej Wortman (JSR) 428
- Turbulent flow studies in two arc-heated duct facilities. M. Alan Covington and Nick S. Vojvodich (JSR) 441
- Nonsimilar solution for laminar and turbulent boundary-layer flows over ablating surfaces. Robert M. Kendall, Larry W. Anderson, and Ronald H. Aungier (AIAA J) 1230
- Reflecting ablating heat shields for planetary entry. David L. Peterson, Philip R. Nachtsheim, and John T. Howe (AIAA J) 1499
- Investigation of simulated melting instability waves near stagnation region in hypersonic flow. William Kuzyk and Ching Jen Chen (AIAA J) 1505
- Observations of crosshatched wave patterns in liquid films. Philip R. Nachtsheim and Jack R. Hagen (AIAA J) 1637
- Three-dimensional heat-transfer and ablation disturbances in high-speed flows. G. R. Inger (AIAA J) 1641
- The ablation of slip-cast fused silica. C. E. Willbanks and C. W. Gorton (JSR, EN) 222
- Biot's variational principle for a Stefan problem. Anant Prasad and H. C. Agrawal (AIAA J, TN) 325
- Further experimental studies of cross-hatching. Hans W. Stock and Jean J. Ginoux (AIAA J, TN) 557
- Inhibition of the ablation rate of graphite by gaseous chlorine. Howard G. Maahs (AIAA J, TN) 710
- Role of the anelastic behavior of the ablation material on cross-hatching. Hans W. Stock (AIAA J, TN) 1528

Radiation and Radiative Heat Transfer

- Advanced high-power arc heaters for simulating entries into the atmospheres of the outer planets. Charles E. Shepard (AIAA J, SYN) 117
- Application of the S_n method to spherically symmetric radiative-transfer problems. Kuei-Yuan Chien (AIAA J) 55
- Gain and power of CO₂ gasdynamic lasers. George Lee, Forrest E. Gowen, and Jack R. Hagen (AIAA J) 65
- Nuclear pumped gas lasers. Karlheinz Thom and Richard T. Schneider (AIAA J) 400
- Bleaching wave phenomena. Loren C. Steinhauer and Harlow G. Ahlstrom (AIAA J) 429
- Measurement of nitrogen plasma transport properties. Paul W. Schreiber, Allen M. Hunter II, and Kenneth R. Benedetto (AIAA J) 670
- Analytical model of the flash produced in aluminum-aluminum hypervelocity impacts. Kenneth E. Harwell, Kynric M. Pell, and T. Dwayne McCay (JSR) 682
- Measurement of apparent thermal conductivity of multilayer insulations at low-compressive loads. Vernon L. Holmes, Leon E. McCrary, and Dennis R. Krause (JSR) 791
- Radiant heat transfer between nongray directional surfaces. W. D. Fischer and R. G. Hering (JSR) 915

- Spectral reflectance and emittance of Apollo 11 and 12 lunar material. Richard C. Birkebæk (AIAA J) 1064
- Reflecting ablating heat shields for planetary entry. David L. Peterson, Philip R. Nachtsheim, and John T. Howe (AIAA J) 1499
- Directional behavior of thermal emission from a rough lunar surface. A. S. Adorjan (JSR, EN) 59
- Radiative cooling and nonequilibrium chemistry coupling behind normal shock waves. Leland A. Carlson (AIAA J, TN) 230
- Variational solutions by the use of stepwise constant functions: I. Linear case. K. K. Yoshikawa (AIAA J, TN) 343
- A technique for delineating convective and radiative wall heat flux. L. A. Lukens and F. P. Incropera (AIAA J, TN) 359
- Evaluation of the averaged specular component of reflectance. J. S. Toor and R. Viskanta (AIAA J, TN) 535
- A simple method for calculating nongray radiation. H. F. Nelson and K. H. Browne (JSR, EN) 781
- The optical temperature of the Apollo 15 exhaust plume. A. E. Pifer and E. P. Krider (JSR, EN) 847
- Measurement of the error of temperature sensors in flowing gases. C. R. Rein and J. R. O'Loughlin (AIAA J, TN) 954
- Eigenvalues and eigenvectors for solutions to the radiative transport equation. J. A. Roux, D. C. Todd, and A. M. Smith (AIAA J, TN) 973
- Effect of polarization on the apparent emittance of rectangular groove cavities. C. L. Tien (AIAA J, TN) 1113
- Approximate temperature distribution for a diffuse, highly reflecting material. Kenneth C. Weston, John T. Howe and Michael J. Green (AIAA J, TN) 1252
- Influence of a temperature dependent spectral absorption coefficient on radiative flux. H. F. Nelson, C. Y. Wang, and A. L. Crosbie (AIAA J, TN) 1255
- An approximation to radiative transfer in a nongray gas. Robert R. Gilpin (AIAA J, TN) 1340
- Radiative and convective heating during Venus entry. William A. Page and Henry T. Woodward (AIAA J, TN) 1379

Thermal Modeling and Experimental Thermal Simulation

- Heat transfer in solid-propellant motors. Anthony San Miguel and Robert M. McCarten (JSR, SYN) 129
- Application of thermal barriers to high-temperature engine components. R. L. Newman, K. R. Cross, W. C. Spicer, H. D. Sheets, and T. D. Driskell (JA, SYN) 609
- Internal temperature distributions in an operational heat pipe. Richard D. Fox, Kelly G. Carothers, and William J. Thomson (AIAA J, SYN) 859
- Synthesis of stiffened conical shells. W. A. Thornton (JSR) 189
- Development and application of a comprehensive analysis of liquid-rocket combustion. R. D. Sutton W. S. Hines, and L. P. Combs (AIAA J) 194
- Effects of thermal discharges on the stratification cycle of lakes. T. R. Sundaram and R. G. Rehm (AIAA J) 204
- Silica reinforcement and char reactions in the Apollo heat shield. D. E. Cagliostro, H. Goldstein, and J. A. Parker (JSR) 346
- Investigation of simulated melting instability waves near stagnation region in hypersonic flow. William Kuzyk and Ching Jen Chen (AIAA J) 1505
- Directional behavior of thermal emission from a rough lunar surface. A. S. Adorjan (JSR, EN) 59
- Prediction of pressure during evacuation of multilayer insulation. A. P. M. Glassford (JSR, EN) 378
- Graded thermal barrier—A new approach for turbine engine cooling. J. R. Cavanagh, K. R. Cross, R. L. Newman, and W. C. Spicer (JA, EN) 795
- The optical temperature of the Apollo 15 exhaust plume. A. E. Pifer and E. P. Krider (JSR, EN) 847
- Flight evaluation of a quartz-fiberfrax heat shield. George F. Greenwald (JSR, EN) 939
- Errata: Design of an astronaut-operated, lunar-surface, antenna-aiming mechanism. N. S. Ajlouny and A. R. Spencer (JSR, ERR) 384

Thermal Surface Properties

- Study of zirconium dioxide white pigment for space environment. H. K. Alan Kan, R. J. Champetier, and T. G. Erler (JSR) 103
- Radiant heat transfer between nongray directional surfaces. W. D. Fischer and R. G. Hering (JSR) 915
- Spectral reflectance and emittance of Apollo 11 and 12 lunar material. Richard C. Birkebæk (AIAA J) 1064
- Directional behavior of thermal emission from a rough lunar surface. A. S. Adorjan (JSR, EN) 59
- Evaluation of the averaged specular component of reflectance. J. S. Toor and R. Viskanta (AIAA J, TN) 535
- Effect of polarization on the apparent emittance of rectangular groove cavities. C. L. Tien (AIAA J, TN) 1113

Thermochemistry and Chemical Kinetics

Thermochemical nonequilibrium in an argon constricted arc plasma. K. J. Clark and F. P. Incropera (AIAA J, SYN) 17

Theory and experiment of electric discharge CO₂ convection lasers. Robert K. Seals Jr., Frank Allario, Roy A. Lucht, and H. A. Hassan (AIAA J, SYN) 369

Atmospheric transport, dispersion, and chemical reactions in air pollution: A review. Martin I. Hoffert (AIAA J, SA) 377

—Errata: "Atmospheric transport, dispersion and chemical reactions in air pollution: A Review." Martin I. Hoffert (AIAA J, TC) 1729

Shock-tube study of nitrogen dissociation rates using pressure measurements. Ronald K. Hanson and Donald Baganoff (AIAA J) 211

Experimental gas dynamic laser studies. Richard A. Meinzer (AIAA J) 388

Ionization behind shock waves in nitrogen-oxygen mixtures. J. H. Schäfer and A. Frohn (AIAA J) 985

Radiative cooling and nonequilibrium chemistry coupling behind normal shock waves. Leland A. Carlson (AIAA J, TN) 230

Effect of nozzle throat radius of curvature on gasdynamic laser gain. Jerry L. Wagner and John D. Anderson Jr. (JSR, EN) 471

Population inversion of atomic carbon in recombining plasma flow. S. W. Bowen and C. Park (AIAA J, TN) 522