

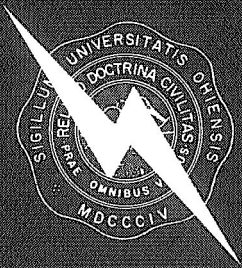
ELECTRICAL ENGINEERING RESEARCH

AUTOMATIC TEST AND PLANNING
PROCEDURES FOR NAVIGATION AND AIR
TRAFFIC CONTROL SATELLITES

TECHNICAL REPORT #EER-15-1

JUNE 1969

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AUTOMATIC TEST AND PLANNING PROCEDURES FOR
NAVIGATION AND AIR TRAFFIC CONTROL SATELLITES

A BIBLIOGRAPHY

DEPARTMENT OF ELECTRICAL ENGINEERING
OHIO UNIVERSITY
ATHENS, OHIO

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Author: Dr. G.V.S. Raju, Associate Professor

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Monitored by Mr. Henry Metcalf, Automated Techniques Branch,
Electronics Research Center, NASA, Cambridge, Massachusetts.

OBJECTIVE OF BIBLIOGRAPHY

Probabilistic network techniques have been proven successful in control of test and countdown procedures for the Appolo launching. The network pattern facing satellites in controlling navigation and air traffic requires a similar approach.

Automatic procedures applied to navigation and air traffic control are to be surveyed. This literature search will emphasize GERT techniques, sensitivity and reliability analysis, and the utilization of satellites for navigation and air traffic control.

This bibliography is an extension of a previous bibliography by Edward Sarkisian, and Henry Metcalf, Reference 125-25-54-37-25.

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AUTHOR AND TITLE LISTING

1960

- CA-60 Calvert, E.S., "Collision Avoidance by Sea and Air - Some Recent Developments in the Theory and Practice", EL/1403/2/ESC, January 1960.
- GU-60 Guier, W. and Weiffenbach, G., "A Satellite Doppler Navigation System", Proc. of IRE, April 1960.
- MO-60 Moody, A.B., "Navigation Using Signals from High Altitude Satellites", Proc. of IRE, Vol. 48, No. 4, April 1960.

1961

- G0-61 Goldstein, A.J. and Kuo, F.F., "Multiparameter Sensitivity", IRE Transactions on Circuit Theory, Vol. CT-8, No. 2, pp. 177-178, June 1961.

1962

- KI-62 Kim, W.H., and Chien, R.T., "Topological Analysis and Synthesis of Communications Networks", Columbia University Press, New York, 1962.
- RO-62 Robichand, L.B., Boisvert, M., and Robert, S., "Signal Flow Graphs and Applications", Prentice Hall, Inc., Englewood Cliffs, New Jersey, 1962.
- TR-62 Trant, James P., Jr., "Investigation of the VTOL Approach Methods by Use of Ground-Controlled Approach Procedures", NASA TN D-1489.

1963

VA-63 Van Slyke, R.M., "Monte Carlo Methods and the PERT Problem", Op. Res., Vol. 11, No. 5, pp. 839-860, 1963.

1964

- AC-64 Ackerman, J.D., "Testing of Navigation Systems", AGARD-Report 496, p. 29, October 1964.
- CR-64 Cruz, J.B., and Perkins, W.R., "The Role of Sensitivity Problem in Multivariable Feedback System Design", IEEE Trans. on Automatic Control, Vol. AC-9, pp. 216-223, July 1964.
- EL-64 Elmaghrably, S.E., "An Algebra for the Analysis of Generalized Activity Networks", Management Science, Vol. 10, No. 3, pp. 494-514, April 1964.
- GE-64 General Electric Company, "Study of Satellites for Navigation", Advanced Technology Laboratories, General Electric Company, Schenectady, Feb., 1964.
- HA-64 Happ, W.W., "Application of Flowgraph Techniques to the Solution of Reliability Problems", in "Physics of Failure in Electronics", Goldberg and Vaccaro, Eds.; Defense Documentation Ctr., Alexandria, Va., Vol. 2, 1964.
- HA-64 Happ, W.W., and Moody, A.B., "Topological Techniques for Sensitivity Analysis", IEEE Trans. Aerospace and Nav. Electronics, December 1964.
- NU-64 Nute, C.H., "Kalman Theory, A New Approach to Navigation", Conference Proceedings of MIL-E-CON 68, 1964.

1965

- AN-65 Anderson, "Separation Standards in the Long Range Air Traffic Control Region, with Special Reference to Vertical Separation", Presented at Ifalpa Symp., Rotterdam, RAE-TM-MATH-68, October 1965.
- AR-65 Aronson, R.L., "Simulators Abound at Langley", Control Engineering, Vol. 12, pp. 105-107, October 1965.
- AT-65 Attwooll, V.W., "Optimum Design of Parallel Route Structures for North Atlantic Air Traffic", IATA 16th Technical Conference, W.P. No. 76, April 1965.
- EH-65 Ehrlich, E., "Current Developments in Navigation Satellites", Navigation, Vol. 12, No. 4, pp. 330-338, Winter 1965-66.
- EH-65a Ehrlich, E., "Navigation Satellites for World Wide Traffic Control", Astronautics and Aeronautics, December 1965.
- GE-65 Gelb, A., "Synthesis of Very Accurate Navigational Systems", IEEE Trans. on Aerospace and Navigation Electronics, Vol. ANE-12, No. 2, June 1965.
- GU-65 Guier, W.H., "Satellite Navigation Using Integral Doppler Data - The AN/SRN-9 Equipment", Report No. TG-690, John Hopkins University, Applied Physics Lab., Silver Spring, Maryland, May 1965.
- JA-65 Jansky, C.M., Jr., "The Current State of Science of Navigation", Navigation, Vol. 12, Spring 1965.
- KE-65 Kershner, R.B., "Present State and Further Development of Navigation by Doppler Measurements From Near Earth Satellites", Applied Physics Laboratory, John Hopkins University. Presented to the International Navigation Congress, Munich, Germany, August 1965.
- MA-65 Martin, J.J., "Distribution of the Time Through A Directed Acyclic Network", Operations Research, Vol. 13, No. 1, pp. 46-66, 1965.

- PA-65 Papoulis, A., "Probability, Random Variables, and Stochastic Processes", McGraw-Hill Book Co., 1965.
- WH-65 Whitehouse, G.E., "Extensions, New Developments and Applications of GERT", Ph.D. Dissertation, Arizona State University, August 1965.
- WO-65 Wollmer, Richard, "Sensitivity Analysis of Networks", AD-618 750, April 1965.

1966

- BE-66 Belove, C., "The Sensitivity Function in Variability Analysis", IEEE Trans. on Reliability, August 1966.
- BL-66 Blake, N., "Hazardous Weather Information for Air Traffic Control", Proceedings of the 12th Conf. on Radar Meteorology, University of Oklahoma, pp. 377-382, 1966.
- BO-66 Bohannon, R.R., "An International Airline Views Navigation Satellites", Navigation, Vol. 13, No. 1, pp. 23-28, Spring 1966.
- CA-66 Casserly, G., and Filkins, L.D., "The Potential Use of Satellites in Hyperbolic Position Finding", Navigation, Vol. 13, No. 4, Winter 1966.
- DO-66 Dolozza, E., "System States Analysis and Flow Diagrams in Reliability", IEEE Trans. on Reliability, R-15, pp. 383-394, December 1966.
- DR-66 Drezner, S.M., and Pritsker, A.A.B., "Network Analysis of Count Down", The Rand Corporation, RM-4976-NASA, March 1966.
- EL-66 Elmaghraby, S.E., "On Generalized Activity Networks", JI. of Industrial Engineering, Vol. XVII, No. 11, pp. 621-631, November 1966.
- GU-66 Gue, R., "Signal Flow Graphs and Analog Computation in the Analysis of Finite Queues", Operations Research, Vol. 14, No. 2, March - April 1966.
- HI-66 Hill, T.W., "System Optimization: A Sensitivity Approach Using GERT", Unpublished Masters Research Report, Arizona State University, Tempe, Arizona, 1966.
- HT-66 Htun, L.T. "Reliability Techniques for Complex Systems", IEEE Trans. on Reliability, R-15, pp. 58-69, August 1966.
- PR-66 Pritsker, A.A.B., "GERT: Graphical Evaluation and Review Technique", RM-4973-NASA, The Rand Corporation, Santa Monica, California, 1966.

- PR-66a Pritsker, A.A.B., and Happ, W.W., "GERT: Graphical Evaluation and Review Techniques, Part I, Fundamentals", The JI. of Industrial Engineering, Vol. XVII, No. 5, pp. 267-274, May 1966.
- PR-66b Pritsker, A.A.B., and Whitehouse, G.F., "GERT: Graphical Evaluation and Review Techniques, Part II, Probabilistic and Industrial Engineering Applications", The JI. of Industrial Engineering, Vol. XVII, No. 6, pp. 293-301, June 1966.
- SA-66 Samek, C., and Pike, H.S., "A Precision Electronic Navigation System Using Omega and Synchronous Satellite Network", Navigation, Vol. 13, No. 2, Summer 1966.
- SH-66 Shapiro, A.H., and Marx, H.F., "A Navigation Satellite Concept Using One-Way Range Measurements", A Paper Presented at the Inst. of Navigation Annual Meeting, Cedar Rapids, Iowa, June 1966.
- SH-66a Sheftel, D.J., "Some Considerations in Determining the Role of Satellites in Air Navigation", Navigation, Vol. 13, No. 2, Summer 1966.
- ST-66 Steadman, R.H., "A Comparison of the Performance of an Auto-Tracking System With A Rate-Aided Manual-Tracking System", AD-386268, October 1966.
- VI-66 Vignali, C., "Airborne Inertial Updating by Navigational Satellite Data", A Paper Presented at the Inst. of Navigation Annual Meeting, Cedar Rapids, Iowa, June 1966.

1967

- AB-67 Abella, E.L., "Remarks Concerning the Automation of Air Traffic Control", Ingeniera Aeronautica Y Astronautica, Vol. 19, pp. 1-8, Sept.-Oct. 1967 (Span)
- AN-67 Anderson, R.E., "Satellite Navigation and Communication for Merchant Ships", Navigation, Vol. 14, No. 2, Summer 1967.
- AT-67 Atwood, V.W., "Separation Criteria for Supersonic Transports and Other Aspects of Traffic Control", Proceedings of the Inst. of Navigation, National Air Meeting on Supersonic Navigation, pp. 101-109, 1967.
- BA-67 Basou, L.L., "Anglo French ATC Preparations for the Concorde", 1967 IEEE International Convention Record, Vol. 15, Part IV, Aerospace Systems, pp. 89-91.
- BA-67a Battell, W.J., "V.H.F. Satellite Communication for Air-Traffic Control", G.E.C. Journal of Science and Technology, Vol. 34, No. 3, pp. 90-97, 1967.
- BE-67a Benning, G.L., "Avionics Systems for the SST Era", Proceedings of the Inst. of Navigation, National Air Meeting on Supersonic Navigation, pp. 184-198.
- BL-67 Blatt, J.D., "USA-FAA ATC Preparation for the SSTs and Jumbo Jets", 1967 IEEE International Convention Record, Vol. 15, Part IV - Aerospace Systems, pp. 100-103, 1967.
- BR-67 Bright, C.B., "Floating Airport - Key to Inter-City Traffic", Astronautics and Aeronautics, Vol. 5, pp. 46-51, September 1967.
- BR-67a Broxmeyer, C., "Terminal Phase Navigation", Proceedings of the Inst. of Navigation, National Air Meeting on Supersonic Navigation, pp. 242-255, 1967.
- BR-67b Brennan, J.L., "Airborne Collision Avoidance System Program", Proceedings of Inst. of Navigation, National Air Meeting on Collision Avoidance, pp. 12-18, 1967.
- BU-67 Burt, C.R., "A Selected Bibliography on the Uses of Navigation Satellites", S67-13, AD-821230, Oct., 1967.

- CA-67 Casserly, G.W., and Colling, D., "The Use of a Single Satellite in a Range-Range Position Finding System", Report No. 7657-7-T, Institute of Science and Technology, University of Michigan, May 1967.
- CA-67a Casserly, G.W., Filkins, L.D., and Hall, W.K., "Satellite Navigation Studies", Report No. 7657-5-P, Inst. of Science and Technology, University of Michigan, May 1967.
- DE-67d De Bayser, P., "The Current State of the SUD-LEAR Programme to Reduce Landing Minima and Develop an All-Weather Landing System", Trans. into English from Tech. Sci. Aeronaut. Spatial, Paris, Vol. 1, pp. 19-32, 1967.
- DE-67 Degroot, L.E., and Polhemus, W.L., "Navigation Management: The Integration of Multiple Sensor Systems", Navigation, Vol. 14, No. 3, pp. 285-294, Fall 1967.
- DO-67 Dodington, S.H., "Ground Based Radio Aids to Navigation", Navigation, Vol. 14, No. 4, pp. 383-387, Winter 1967.
- DR-67 Drogin, E.M., "Steering a Course to Safer Air Travel", Electronics, Vol. 40, pp. 95-102, November 27, 1967.
- FA-67 Fang, B.T., "Kalman-Bucy Filter for Optimum Radio-Inertial Navigation", IEEE Trans. on Automatic Control, Vol. AC-12, No. 4, pp. 430-431, August 1967.
- FA-67a Fan, L., Wang, C.S., Tillman, F.A., and Hwang, C.L., "Optimization of Systems Reliability", IEEE Trans. on Reliability, September 1967.
- FE-67b Fellingner, J.G., "Automatic Map Displays for Supersonic Navigation", Proceedings of the Inst. of Navigation, National Air Meeting on Supersonic Navigation, pp. 199-215, 1967.
- FI-67a Finch, D.M., "Ground Guidance and Control in Poor Visibility", Selected Working Papers of the Major Airport and Terminal Area Problems, International Air Transport Assn., Technical Conf. 17th, pp. 391-407.

- FO-67 Fombonne, P., "The CSF Landing System for STOL Aircraft", Annales de Radioelectricite, Vol. 22, pp. 387-397, October 1967 in French.
- FR-67 Freiesleben, H.C., "Navigation and Traffic Control
FR-67a of Ships and Aircraft with the Aid of Satellites", VDI Zertschrift, Vol. 109, No. 30, pp. 1421-1425, 1967. In German, "Navigation and Traffic Control of Ships and Aircraft with the Aid of Satellites", VDI Zeitschrift, Vol. 19, No. 35, pp. 1675-1679, 1967, in German.
- GI-67 Gilbert, G.A., "Navigation for General Aviation", Navigation, Vol. 14, pp. 398-415, Winter 1967-1968.
- GI-67a Gierhart, G.D., "Frequency Sharing with Air Traffic Control Satellites", IERTM-ITSA-26 J52361427, Jan., 1967.
- GR-67 Graham, W., "The Application of Time/Frequency Techniques to the Collision Avoidance Program", Proceedings of Inst. of Navigation, National Air Meeting on Collision Avoidance, pp. 151-173, 1967.
- HU-67 Hu, T.C., "Recent Advances in Network Flows", AD-660 505, June 1967.
- HO-67 Holt, J.M., "Fundamental Concepts Required for Collision Hazard Reduction", Proceedings of Inst. of Navigation, National Air Meeting on Collision Avoidance, pp. 117-137, 1967.
- HO-67b Houska, N.A., "T Racon Modular Automation Program", Selected Working Papers of the Major Airport and Terminal Areas Problems, International Air Transport Assn., Technical Conf. 17th, Vol. 2, pp. 163-171, October 1967.
- HO-67b Holden, P., "The Contribution of Advanced Navigation Computers and Displays to TMA System Capacity", Selected Working Papers of the Major Airport and Terminal Area Problems, International Air Transport Assn., Technical Conf., 17th pp. 229-238, 1967.

- HO-67e Hollm, E., "Precision Vor.", Vol. 1 - Development and Flight Test Program, RD-67-58, V. 1, Aug., 1967.
- HU-67 Huck, "Pilot Proficiency and ATC", Journal of Air Traffic, Vol. 10, pp. 9-11, 1967.
- JA-67 Jaycox, R.L., "Some Characteristics of Collision Avoidance Systems", Proceedings of Inst. of Navigation, National Air Meeting on Collision Avoidance, pp. 138-150, 1967.
- JO-67 Johnson, E.A., "Touch Displays - A Programmed Man-Machine Interface", Proceedings of the Conf. in Human Operator in Complex Systems, University of Aston, pp. 171-177, 1967.
- KA-67 Karsten, P., "Field Appraisal of the Advanced Radar Traffic Control and Final Report", RD-67-3, Oct., 1967.
- KA-67a Karsten, P., "Field Appraisal of the Advanced Radar Traffic Control System", Final Report, RD-67-2, October 1967.
- KE-67 Keane, L.M., "Satellite Navigation Systems", Proceedings of the Inst. of Navigation, National Air Meeting on Supersonic Navigation, pp. 173-183. "Recent Progress in Navigation Satellites", Proceedings of the Inst. of Navigation, National Air Meeting on Supersonic Navigation, pp. 226-241, 1967.
- KE-67a
- LE-67 Lederer, J., "Opening Comments", Proceedings of Inst. of Navigation National Air Meeting on Collision Avoidance, pp. 7-11, 1967.
- LE-67a Levy, L.L., and Moore, A.H., "A Monte Carlo Technique for Obtaining System Reliability Confidence Limits From Component Test Data", IEEE Trans. on Reliability, September 1967.
- MC-67 McIntosh, F.B., "Requirements for a Common System of Collision Avoidance Equipment in the Modern Day Airspace", Proceedings of Inst. of Navigation, National Air Meeting on Collision Avoidance, pp. 12-18, 1967.
- MC-67a McLeod, B.F., "An International Airline Views SST Navigation Requirements", Proceedings of the Inst. of Navigation, National Air Meeting on Supersonic Navigation, pp. 152-157, 1967.

- MC-67 McDonald, W.T., and Stern, R.G., "Space Navigation", Navigation, Vol. 14, No. 4, pp. 416-433, Winter 1967-68.
- ME-67 Mellinger, G.R., "Pilot Warning Indicators", Proceedings of Inst. of Navigation, National Air Meeting on Collision Avoidance, pp. 114-116, 1967.
- MO-67 Moody, A.B., "Air Navigation, A Status Report", Navigation, Vol. 14, No. 1, pp. 74-81, Spring 1967.
- NE-67 Newton, R.E., "Everyman's Doppler Satellite Navigation System", IEEE Trans. on Aerospace and Electronic Systems, Vol. AES 3, No. 3, pp. 527-554, May 1967.
- PA-67 Pawlak, R.J., "Future Aspects of Supersonic Transport Navigation", Proceedings of the Inst. of Navigation, National Air Meeting on Supersonic Navigation, pp. 216-225, 1967.
- PE-67 Perkinson, R.E., "The Issues and the Answers", Proceedings of Inst. of Navigation, National Air Meeting on Collision Avoidance, pp. 194-203, 1967.
- PO-67 Portman, P.A., "Notes on Civil Navigation and Traffic Control Technology", AD-659999, October 1967.
- PR-67 Proctor, J.D., "How to Avoid Collision with Other Aircraft", Inst. of Navigation, Journal, Vol. 20, pp. 388-396, October 1967.
- RA-67b Rapaso, J. Hernandez, "Automatic Air Traffic Control", Ingeniera Aeronautica Y Astronautica, Vol. 19, pp. 1-8, September-October, 1967.
- RA-67
RA-67a Ratcliffe, "Aircraft Sequencing, Parallel Landing and the TMA Route Structure", Selected Working Papers of the Major Airport and Terminal Area Problems, International Air Transport Assn., Technical Conf. 17th, Vol. 2, pp. 163-171, October 1967. "Automatic Solution of TMC-ATC Assignment Problems", pp. 195-204.
- RI-67 Ridenour, A.R., "Rush Hour - Standard Operating Procedure", AIIA Paper 67-398.
- SF-67 Sfatosu, S., "The Automation of the OSP Aircraft Landing Facility", Revista Transporturilor, Vol. 14, pp. 351-355, August 1967. In Rumanian.

- SL-67 Sluka, A.L., "ATC Concepts for Supersonic Vehicles", Part 2-2, Interim Report, RD-67-47, pt. 2-2.
- SL-67a Slack, R.M., "The Keystone System of Anti-Collision Radar Navigation", Navigation, Vol. 14, No. 2, Summer 1967.
- SP-67 Spencer, D.F., "Navigation Satellites", Navigation, Vol. 14, No. 4, pp. 378-382, Winter 1967-1968.
- SZ-67 Szymkowica, J.S., "Altimetry", Proceedings of Inst. of Navigation, National Air Meeting on Collision Avoidance, pp. 36-42, 1967.
- TH-67 Thomas, D.D., "Collision Avoidance in Air-Traffic Control", Proceedings of Inst. of Navigation, National Air Meeting on Collision Avoidance, pp. 12-18, 1967.
- TH-67a Thompson, J.K., "Operational Meteorology for the SST Operations", Proceedings of the Inst. of Navigation, National Air Meeting on Supersonic Navigation, pp. 23-25, 1967.
- VI-67 Vickers, T.K., "Navigation of V/STOL Aircraft in High-density Urban Areas", 23rd Annual Meeting of Institute of Navigation, Paper, June 29, 30, 1967.
- VI-67a Vickers, T.K., "Navigation of V/STOL Aircraft in High-density Urban Areas", Navigation, Vol. 14, pp. 288-397, Winter 1967-1968.
- VI-67b Vickers, T.K., "Navigation of V/STOL Aircraft in High-density Urban Areas", Navigation, Vol. 14, No. 4, pp. 388-397, Winter 1967-1968.
- WH-67 White, F.C., "The Airline Search for a Collision Avoidance System", Proceedings of the Inst. of Navigation, National Air Meeting on Collision Avoidance, pp. 71-79, 1967.
- WI-67 Winick, A.B., "Area Navigation and the Relationship to Terminal Area Capacity", Journal of Air Traffic Control, Vol. 10, pp. 14-17, March 1968. "Area Navigation and the Relationship to Terminal Area Capacity", Selected Working Papers of the Major Airport and Terminal Area Problems, International Air Transport Assn., Technical Conf. 17th, pp. 229-238, 1967.

1968

- BE-68e Bencivenga, V.L., "Advanced Scanning Beam Guidance System for All Weather Landing", Summary Report, RD-68-2, February 1968.
- BE-68 Benning, G.L., Bergemann, G.T., Holt, J.M., and Schwlighofer, H.M., "Avionics Systems for the SST ERA", Navigation, Vol. 15, No. 3, Fall 1968.
- BL-68 Blasbalg, H., Najjar, H.F., D'Antonio, R.A., and Haddad, R.A., "Air-Ground, Ground-Air Communications Using Pseudo-noise Through a Satellite", IEEE Trans. on Aerospace and Electronic Systems, Vol. AES-4, No. 5, pp. 774-791, September 1968.
- CA-68 Carter, W.R., "Classified Title", Royal Naval Sci. Serv. J. of the Roy. Naval Sci., Serv., Vol. 23, No. 1, pp. 14-15, January 1968.
- CH-68 Chu, J.W., "Use of Satellites for Navigation", IEEE Trans. Aerospace and Electronic Systems, Vol. AES-4, No. 5, pp. 799-800, September 1968.
- CR-68 Crook, W.G., "Simulation and Analysis of Over Ocean Separation Assurance Procedures and Displays", Final Report, RD-67-43, February 1968.
- DE-68 DeJong, K.H., "Current State of Development of All-Weather Landing", Luftfahrttechnik Raumfahrttechnik, Vol. 14, pp. 39-42, February 1968, in German.
- DE-68b DeJong, H.M., "The Provision of Meteorological Information to Airline Operators for Computerized Flight Planning", Paper of the World Meteorological Organization, Commission for Aeronautical Meteorology, Scientific and Technical Conf., London, March 18-29, 1968.
- FE-68 Ferguson, F.H., "Mass Transportation - A Systems Concept", Lockheed-Georgia Quarterly, Vol. 5, pp. 17-24, February 1968.
- FI-68 Finger, F.G., "Provision of Meteorological Information for the Planning of SST Flights", Paper of World Meteorological Organization Commission for Aeronautical Meteorology, Scientific and Technical Conf., London, March 18-29, 1968.

- FI-68a Filkino, Lyle D., "Elements of Satellite Navigation Systems", University of Michigan 1968 Summer Conf. on Modern Navigational Systems.
- FR-68 Freiesleben, H.C., "Navigation and Traffic Control of Ships and Aircraft with the Aid of Satellites", VDI Zeitschrift, Vol. 110, No. 2, pp. 51-56, 1968. "Navigation and Traffic Control of Vessels and Aircraft with the Aid of Satellites", VDI Zeitschrift, Vol. 110, No. 5, pp. 173-176, 1968, in German.
- GA-68 Gaffney, J.E., and Ross, D.C., "Aircraft Position Determination: A Modern View of Requirements", Navigation, Vol. 15, No. 1, Spring 1968.
- HA-68 Haeberli, H.R., "Control of Airspace and the Danger of Collisions During ATC Flights", Aero-Revue, Vol. 43, pp. 118-119, March 1968, in German.
- HO-68 Holt, J.M., and Anderson, R.M., "Analysis of Warning Times for Collision Avoidance Systems", IEEE Trans., Vol. AES-4, No. 2, pp. 305-314, March 1968.
- IS-68 Ishmael, P.C., and Pritsker, A.A.B., "User Manual for GERT EXCLUSIVE-OR Program", NASA/ERC, NGR 03-011-034, July 1968.
- IS-68a _____, "Definitions and Procedures Employed in the GERT EXCLUSIVE-OR Program", NASA/ERC, NGR 03-001-034, July 1968.
- JA-68 Jaycox, R.L., "Collision Avoidance System Synchronization", IEEE Trans., Vol. AES-4, No. 2, pp. 257-264, March 1968.
- JA-68a Jarvis, E.C., "Time and Space Variations of Visibility and Low Cloud within the Approach Control Area - An Operational Method for Predicting the Height of the Planetary Boundary Layer in a Stable Atmosphere", Paper of the World Meteorological Organization, Commission for Aeronautical Meteorology, Scientific and Technical Conf., London, March 18-29, 1968.

- J0-68 Jones, R.F., "Time and Space Variations of Visibility and Low Cloud Within the Approach Control Area - Introductory Paper", Paper of the World Meteorological Organization, Commission for Aeronautical Meteorology, Scientific and Technical Conf., London, March 18-29, 1968.
- JU-68 Junek, F.F., "Cartographic Design for Navigation of High Performance Aircraft", Papers of the 28th Annual Meeting of the American Congress on Surveying and Mapping, pp. 202-207, 1968.
- OD-68 O'Day, James, "Test and Evaluation of Navigational Systems I & II", University of Michigan 1968 Summer Conference on Modern Navigational Systems.
- PE-68 Perkinson, R.E., "CAS Message Format", IEEE Trans., Vol. AES-4, No. 2, pp. 273-277, March 1968.
- PO-68 Polhemus, W.L., "The Navigation Task in a Civil Jet Aircraft", University of Michigan 1968 Summer Conf. on Modern Navigational Systems.
- PO-68a Poritzky, S.B., "Navigation for the First Generation Supersonic Era", Vol. 15, No. 2, Summer 1968.
- PO-68b Powell, C., "HARCO-A Computer Cased Air Navigation System", Aircraft Engineering, Vol. 40, pp. 30-34, February 1968.
- PR-68 Pritsker, A.A.B., "User's Manual for GERT Simulation Program", NASA/ERC, NGR 03-001-034, July 1968.
- PR-68a _____, "Definitions and Procedures for GERT Simulation Program", NASA/ERC, NGR 03-001-034, July 1968.
- PR-68b Pritsker, A.A.B., Whitehouse, G.E., and Gallaher, "Solution of Finite Queeneing Problems by Graphical Means", Submitted for Publication, October 1968.
- RE-68 Reid, J.H., "Phase Comparison Distance Measuring Techniques in Navigation Satellite Systems", University of Michigan 1968 Summer Conference on Modern Navigational Systems (from Arbic Corporation).
- RO-68 Rosenshine, M., "Operations Research in the Solution of Air Traffic Control Problems", Jl. of Industrial Engineering, March 1968.

- SH-68 Shooman, M.L., "Probabilistic Reliability", McGraw Hill Book Company, New York, 1968.
- SH-68a Shear, W.G., "Elements of the ATA Collision Avoidance System", IEEE Trans., Vol. AES-4, No. 2, pp. 295-304, March 1968.
- SP-68 Spangler, R.M., "Flight Simulation Study of Air-to-Air Ranging Displays for Separation Assurance", Interim Report, RD-66-83, February 1968.
- ST-68 Stansell, T.A., Jr., "The Navy Navigation Satellite System: Description and Status", Navigation, Vol. 15, No. 3, Fall 1968.
- SU-68 Sullivan, J.E., "Navigation: A Statistical Process", University of Michigan 1968 Summer Conference on Modern Navigational Systems.
- SU-68a Sullivan, J.E., "Several Aspects of Statistics in Navigation", University of Michigan 1968 Summer Conference on Modern Navigational Systems.
- SW-68 Swanson, E.R., "VLF Radio Navigation Systems", University of Michigan 1968 Summer Conference on Modern Navigational Systems.
- VI-68 Villiers, J., "Prospects for Air Traffic Control in the Advanced Phases of Automation - the 'Filter M Method'", Navigation (Paris), Vol. 16, pp. 15-39, January 1968, in French.
- WH-68 White, F.C., "Airborne Collision Avoidance System Development - Introduction", IEEE Trans., Vol. AES-4, No. 2, pp. 234-237, March 1968.
- WI-68 Winick, A.B., "Air Navigation Trends", Navigation, Vol. 15, No. 1, Spring 1968.
- WI-68a Winick, A.B., "Area Navigation and Relationship to Terminal Area Capacity", Inst. of Navigation, Journal, Vol. 21, pp. 53-58, January 1968.

1969

- GR-69 Gray, C.F., and Reiman, R.E., "PERT Simulation: A Dynamic Approach to the PERT Technique", Journal of System Management, March 1969.

AUTHOR AND ADDRESS LISTING

A

- AB-67 Abella, E.L., Spain.
- TR-62 Algranti, Joseph S., NASA, Langley Research Center,
Langley Station, Virginia.
- AN-65 Anderson, R.G., Royal Aircraft Establishment,
Farnborough, England.
- AR-65 Aronson, R.L., Jervis B. Webb Co., Control Engineering
Division, Detroit, Michigan.
- AT-65 Atwooll, V.W., Ministry of Technology, Royal Aircraft
Establishment, Farnborough, Hants., England.

B

- BA-67 Basou, L.L., Aviation Civile, Paris, France.
- BA-67a Battell, W.J., General Electric Company, Ltd., Applied Electronics Labs, Communications Systems Div., Data Links Group, Stanmore, Middx., England.
- BE-68e Bencivenga, V.L., Federal Aviation Agency, Washington, D.C., Navigation Development Div.
- BE-67a Benning, G.L., Collins Radio Corp., Cedar Rapids Div., Cedar Rapids, Iowa.
- BE-67a Bergemann, G.T., Collins Radio Corp., Cedar Rapids Div., Cedar Rapids, Iowa.
- BL-66 Blake, N., Federal Aviation Administration Systems Research and Development Service, Systems Analysis Div., Washington, D.C.
- BL-67 Blatt, J.D., Federal Aviation Administration, Washington, D.C.
- BL-68 Blasbalg, Najjar, and D'Antonio, IBM Center for Exploratory Studies, Rockville, Maryland.
Haddad, IBM Space Systems Center, Rockville, Md.
- BO-66 Bohannon, R.R., Project Electronic Engineer of Pan American World Airways, Inc., Miami, Florida.
- BR-67 Brennan, J.L., Federal Aviation Administration, Washington, D.C.
- BR-67 Bright, C.B., Rutgers University, Eagleton Inst. of Politics, Center for Transportation Studies, New Brunswick, New Jersey.
- BR-67a Broxmeyer, C., MIT, Department of Aeronautics and Astronautics, Instrumentation Lab., Cambridge, Mass.
- BU-67 Burt, C.R., General Motors Corporation, Santa Barbara, California, Defense Research Lab.

C

- CA-60 Calvert, E.S., Royal Aircraft Establishment, Farnborough, England.
- CA-68 Carter, W.R., Admiralty Surface Weapons Establishment, Portsmouth, England.
- CA-67 Casserly, G.W., Institute of Science and Technology, University of Michigan, Ann Arbor, Michigan.
- CH-68 Chu, J.W., Aeronautics Navigation Services and Maintenance Office, CCA, Taipei, Taiwan.
- CR-64 Cruz, J.B., Department of Electrical Engineering, University of Illinois, Urbana, Illinois.
- CR-68 Crook, W.G., Federal Aviation Agency, Atlantic City, New Jersey.

D

- DE-67d DeBayser, Royal Aircraft Establishment, Farnborough,
England.
- DE-68 DeJong, K.H., Germany (no address given)
DE-68b
- DE-67 DeGroot, L.E., Lear, Seigler, Inc., Grand Rapids,
Michigan.
- DO-67 Dodington, S.H., ITT Federal Laboratories, Nutley,
New Jersey.
- DR-67 Drogin, E.M., Cutler-Hammer, Inc., Airborne Instru-
ments Lab. Div., Radar Techniques and Advanced
Development Department, Deer Park, New York.

E

- EH-65 Ehrlich, E., Navigation Program Manager, Communication and Navigation Programs Office, NASA, Washington, D.C.
- EL-64 Elmaghrably, S.E., Department of Industrial Engineering, North Carolina State, Raleigh, North Carolina.

F

- FE-67b Fellinger, J.G., Lear Siegler, Inc., Grand Rapids, Michigan.
- FE-68 Ferguson, F.H., Lockheed Aircraft Corp., Lockheed-Georgia Co., Advanced Studies Div., Advanced Concepts Department, Marietta, Georgia.
- FI-67a Finch, D.M., California University, Institute of Transportation and Traffic Engineering, Berkley, California.
- FI-68 Finger, F.G., (no address given).
- F0-67 Fombonne, P., (no address given).
- FR-67 Freiesleben, H.C., Deutsches Hydrographisches Institut,
FR-67a Hamburg, West Germany.
FR-68
FR-68b

G

- GI-67a Gierhart, G.D., Environmental Science Service
Administration, Boulder, Colorado, Institute for
Environmental Research.
- GI-67 Gilbert, G.A., Glen A. Gilbert and Associates,
Miami, Florida.
- GR-67 Graham, W., Control Data Corporation, TRG Division,
Melville, New York.

H

- HA-68 Haeberli, H.R., Germany.
- HA-64 Happ, W.W., Electronics Research Center, NASA,
PR-66 Cambridge, Massachusetts.
- BL-66 Hilsenrod, A., Federal Aviation Administration,
Systems Research and Development Service, Systems
Analysis Division, Washington, D.C.
- HO-67d Holden, P., General Precision, B Systems, Ltd.,
Aylesbury, Bucks., England.
- HO-67e Hollm, E., Airborne Instruments Lab., Deer Park,
New York.
- HO-67 Holt, J.M., Collins Radio Corp., Cedar Rapids, Iowa.
BE-67a
HO-68
- HO-67b Houska, N.A., Federal Aviation Administration,
Washington, D.C.
- HU-67 Huck, M.V., Aircraft Owners and Pilots Association,
Washington, D.C.
- HU-67 Hu, T.C., University of Wisconsin, Madison, Wisconsin.

J

- JA-68 Jarvis, E.C., (no address given).
- JA-67 Jaycos, R.L., Collins Radio Corp., Cedar Rapids, Iowa.
JA-68
- JO-67 Johnson, E.A., Ministry of Technology, Royal Radar
Establishment, Great Malvern, Worc., England.
- JO-68 Jones, R.F., (no address given).
- JU-68 Junek, F.F., ESSA, U.S.Coast Guard and Geodetic
Survey, Silver Spring, Maryland.

K

- KA-67 Karsten, P., Federal Aviation Agency, Atlantic City,
KA-67a New Jersey. Test and Evaluation Division.
- KE-67 Keane, L.M., NASA, ERC, Cambridge, Massachusetts.
KE-67a
- KI-62 Kim, W.H., Columbia University, New York.

L

- LE-67 Lederer, J., Flight Safety Foundation, Inc., New York, New York.
- DE-67d Lepers, J., Royal Aircraft Establishment, Farnborough, England.

M

- BR-67a MacKinnon, D., MIT, Department of Aeronautics and
Astronautics, Instrumentation Lab, Cambridge, Mass.
- MC-67 McDonald, W.T., Experimental Astronomy Laboratory,
MIT, Cambridge, Massachusetts.
- MC-67 McIntosh, F.B., National Business Aircraft Assn.,
Washington, D.C.
- FI-68 McInturff, R.M., (no address given).
- MC-67a McLeod, B.F., Pan American World Airways, Inc., New
York, New York.
- ME-67 Mellinger, G.R., North American Rockwell Corp.,
Los Angeles, California.
- HO-67e Mesard, R., Airborne Instruments Lab., Deer Park,
New York.

P

- PA-65 Papoulis, A., Department of Electrical Engineering,
Polytechnic Institute of Brooklyn, New York.
- PA-67 Pawlak, R.J., NASA, ERC, Cambridge, Massachusetts.
- PE-68 Perkins, R.E., McDonnell-Douglas Corp., St. Louis,
Missouri.
- CR-64 Perkins, W.R. Department of Electrical Engineering,
University of Illinois, Urbana, Illinois.
- DE-67 Polhemus, W.L., Polhemus Associates, Ann Arbor,
Michigan.
- PE-67 Perkinson, R.E., McDonnell-Douglas Corp., St. Louis,
Missouri.
- PO-67 Portman, P.A., Institute for Defense Analysis,
Arlington, Virginia.
- PO-68 Powell, C., Decca Navigator Co., Ltd., London, England.
- PR-67 Proctor, J.D., (no address given).
- PR-66 Pritsker, A.A.B., Arizona State University, Tempe,
PR-68 Arizona.

R

- HE-67 Raposo, J. Hernandez, Spain.
- RA-67 Ratcliffe, S., Ministry of Technology, Royal Radar
RA-67a Establishment, Great Malvern, Worcs., England.
- AN-65 Reich, P.G., Royal Aircraft Establishment, Farn-
borough, England.
- RE-68 Reid, J.H., Cubic Corporation.
- RI-67 Ridenour, A.R., Federal Aviation Agency, ATC System
Requirements Div., Washington, D.C.

S

- BE-67a Schweighofer, H.M., Co-lins Radio Co., Cedar Rapids Div., Cedar Rapids, Iowa.
- SF-67 Sfatosu, S., Rumania.
- SH-68 Shear, W.G., Avionics Division, Bendix Corp., Fort Lauderdale, Florida.
- SH-68 Shooman, M.L., Polytechnic Institute of Brooklyn, New York.
- BL-66 Shoemaker, L., Federal Aviation Administration, Systems Research and Development Service, Systems Analysis Div., Washington, D.C.
- SL-67 Sluka, A.L., Federal Aviation Agency, Atlantic City, New Jersey, Test and Evaluation Division.
- SP-68 Spangler, R.M., Federal Aviation Agency, Atlantic City, New Jersey, National Aviation Facilities Experimental Center.
- SP-67 Spencer, D.F., Chief, Avionics and Guidance Division, Office of the Director of Research and Engineering, Washington, D.C.
- BE-68e Spinner, L.N., Federal Aviation Agency, Washington, D.C., Navigation Development Division.
- ST-66 Steadman, R.H., Royal Radar Establishment, Malvern, England.
- GR-67 Steinberg, H., Control Data Corp., TRG Div., Melville, New York.
- MC-67 Stern, R.G., Experimental Astronomy Laboratory, MIT, Cambridge, Massachusetts.
- SP-68 Sultzer, R.L., Federal Aviation Agency, Atlantic City,
CR-68 New Jersey, National Aviation Facilities Experimental Center.
- SZ-67 Szymkowicz, J.S., Federal Aviation Administration, Washington, D.C.

T

- TH-67 Thomas, D.D., Federal Aviation Administration,
Washington, D.C.
- TH-67a Thompson, J.K., Federal Aviation Administration,
Washington, D.C.
- TR-62 Trant, James P., NASA, Langley Research Center,
Langley Station, Virginia.
- DE-67 Turcat, A., Royal Aircraft Establishment, Farn-
borough, England.

V

- VI-67 Vickers, T.K., Decca Navigator System Inc., Air
Traffic Advisory Unit, Washington, D.C. .
- VI-68 Villiers, J., France.

W

WH-67 White, F.C., Air Transport Assn. of America,
WI-67c Washington, D.C.
WH-68

WH-65 Whitehouse, G.E., Lehigh University, Bethlehem,
PR-66 Pennsylvania.

WI-68 Winick, A.B., Federal Aviation Administration,
WI-67 Washington, D.C.
WI-67c

WO-65 Wollmer, Richard, University of California, Berkeley,
California.

Z

H0-67e Zeltser, M., Airborne Instruments Lab., Deer Park,
New York.