

3. Probability of a Correct Result with a Certain Rounding-off Procedure.

W. S. LOUD, University of Minnesota.

Consider the problem of the addition of n numbers expressed in the base B of numeration. Supposing each number known to arbitrary accuracy, to obtain the sum accurate to k places, one may round off each number to $(k + 1)$ places, add, and round the sum to k places. If the numbers are assumed uniformly distributed, the probability that the above procedure gives the correct result may be found explicitly by use of characteristic functions. If the base B is odd, the result is $2(\pi B)^{-1} \int_0^\infty \sin^{n-1} u \sin^2 B u u^{-n-1} du$, and if the base B is even, $2(\pi B)^{-1} \int_0^\infty \sin^2 B u \cos u u^{-n-1} du$. Both formulas have the asymptotic formula $6^{1/2} B (\pi n)^{-1/2}$ as n becomes infinite.

4. Analysis of a One-person Game. (Preliminary Report). W. M. KINCAID, University of Michigan.

The problem of allocation of supplies is one which arises in many military and economic connections. The present report discusses a game constructed as a model of a simple situation of this type. The player is given a supply of cards, and receives payments for giving these up when certain random events occur during the period of play.

The optimal strategy, which maximizes the expected value of these payments, is governed by certain critical times such that the player's response to a particular event depends on whether it occurs before or after one of these times.

NEWS AND NOTICES

Readers are invited to submit to the Secretary of the Institute news items of interest

Personal Items

Dr. Leo A. Aroian, on leave from Hunter College, is acting as a Research Physicist in charge of computations at the Hughes Aircraft Co., Department of Electronics and Guided Missiles, Culver City, California.

Dr. Ralph A. Bradley from McGill University, Montreal, Canada will join the staff as Associate Professor in the Department of Statistics at Virginia Polytechnic Institute on July 1, 1950. He will devote the majority of his time to research on rank order statistics.

Dr. E. R. Dalziel has relinquished his post as Assistant Master at Technical School, New Zealand, to become Senior Engineer with the Overseas Telecommunication Commission, Australia.

On September 1, Dr. David Duncan from the University of Sydney, Sydney, Australia, will join the statistical staff of Virginia Polytechnic Institute as Associate Professor of Statistics. He will devote the majority of his time to teaching.

Dr. C. H. Fischer has been promoted to the rank of Professor of Actuarial Mathematics in the Department of Mathematics and Professor of Insurance in the School of Business Administration, University of Michigan, Ann Arbor, Michigan.

Dr. E. J. Gumbel, Professor of Statistics at the New York New School for Social Research, has been appointed Consultant to the National Bureau of Standards and has been awarded a Guggenheim fellowship for finishing a book on the theory of extreme values.

Dr. Eugene Lukacs, who has been on leave from Our Lady of Cincinnati College and working as a Statistician for the U. S. Naval Ordnance Test Station, Inyokern, California, is transferring to the Statistical Engineering Laboratory, National Bureau of Standards, Washington, D. C.

Dr. R. B. Leipnik, formerly a member of the Institute for Advanced Study, has accepted a position as Assistant Professor of Mathematics at the University of Washington, Seattle.

Mr. Harold C. Mathisen, Jr., of the Kaiser-Frazer Corporation has been transferred from Willow Run, Michigan where he was an Assistant to the Director of Sales, to Buffalo, New York, as Regional Credit-Distribution Supervisor.

Mr. Jack Moshman has resigned from the U. S. Atomic Energy Commission at Oak Ridge, Tennessee, to accept a position as Statistician with the Mathematics Panel of the Oak Ridge National Laboratory.

Dr. D. N. Nanda is now acting as Senior Scientific Officer in statistics at the Technical Development Estt. Laboratory at Kanpur, India.

Mr. Shanti A. Vora was awarded at the commencement June 5, 1950, the degree of Doctor of Philosophy in Mathematical Statistics from the University of North Carolina, Chapel Hill. His dissertation, entitled "Bounds on the Distribution of Chi-Square," won the William Chambers Coker Award in Science for 1950 granted by the Elisha Mitchell Scientific Society for excellence in research in all the scientific departments of the university. He has been appointed Acting Assistant Professor in the Department of Statistics at Stanford University, California, effective July 1, 1950, where he will be principally employed in research on sampling inspection.

Professor Abraham Wald, Chairman, Department of Mathematical Statistics, Columbia University, gave a series of lectures on the theory of statistical decision functions at the Naval Ordnance Test Station, Inyokern, California, April 3-7, 1950. Representatives from several organizations and educational institutions on the Pacific coast attended the lectures.

A copy of the bulletin of the Graduate School of Public Health, University of Pittsburgh, has been received at the Secretary's office. The program of the Department of Biostatistics will be of particular interest to readers of the *Annals*. The teaching and research activities of the Department of Biostatistics are aimed primarily at the development of methods for the statistical appraisal of the health problems of groups: the community, the family, and the special aggregates such as the population in industry and in school.

The Educational Testing Service is offering for 1951-52 its fourth series of research fellowships in psychometrics leading to the Ph.D. degree at Princeton University. Open to men who are acceptable to the Graduate School of the University, the two fellowships each carry a stipend of \$2,375 a year and are normally renewable. Fellows will be engaged in part-time research in the general area of psychological measurement at the offices of the Educational Testing Service and will, in addition, carry a normal program of studies in the Graduate School. Competence in mathematics and psychology is a prerequisite for obtaining these fellowships. Information and application blanks may be obtained from: Director of Psychometric Fellowship Program, Educational Testing Service, 20 Nassau Street, Princeton, New Jersey.

Preliminary Actuarial Examinations Prize Awards

The winners of the prize awards offered by the Society of Actuaries to the nine undergraduates ranking highest on the score of Part 2 of the 1950 Preliminary Actuarial Examinations are as follows:

First Prize of \$200

Mattuck, Arthur P..... Swarthmore College

Additional Prizes of \$100

Dempster, Arthur P.....	University of Toronto
Haslam, M. Brent.....	University of Buffalo
Hudek, Paul R.....	University of Minnesota
Jamieson, J. Rae.....	University of Toronto
Leff, Milton M.....	University of Western Ontario
Milnor, John W.....	Princeton University
Reynolds, William F.....	College of the Holy Cross
Walter, John R.....	University of Toronto

The Society of Actuaries has authorized a similar set of nine prizes for the 1951 examinations on Part 2.

The Preliminary Actuarial Examinations consist of the following three examinations:

Part 1. *Language Aptitude Examination.*

(Reading comprehension, meaning of words and word relationships, antonyms, and verbal reasoning.)

Part 2. *General Mathematics Examination.*

(Algebra, trigonometry, coordinate geometry, differential and integral calculus.)

Part 3. *Special Mathematics Examination.*

(Finite differences, probability and statistics.)

The 1951 Preliminary Actuarial Examinations will be prepared by the Educational Testing Service and will be administered by the Society of Actuaries at centers throughout the United States and Canada on May 18, 1951. The closing date for applications is March 15, 1951.

Detailed information concerning the Examinations can be obtained from:

The Society of Actuaries
208 South LaSalle Street
Chicago 4, Illinois

New Members

The following persons have been elected to membership in the Institute

(March 1, 1950 to May 31, 1950)

- Ard, Everett E.**, B.S. (Kansas State Teachers College), Student, University of Michigan, *1657 Monson Court, Willow Run, Michigan.*
- Bainbridge, T. R.**, B.S. (Clemson College, S. C.), Supervisor, Koda Quality Inspection Group, Tennessee Eastman Corporation, Kingsport, Tennessee.
- Bankier, James D.**, Ph.D. (Rice Institute), Associate Professor, Mathematics Department, McMaster University, Hamilton, Ontario, Canada.
- den Broeder, Jr., George G.**, B.S. (Wayne Univ.), Student, Wayne University, *459 East Grand Boulevard, Detroit 7, Michigan.*
- Casas, Luis T.**, Ph.D. (Univ. of Bogota, Colombia), Professor of Statistics, Universidad de los Andes and Facultad de Economía Industrial y Comercial del Gimnasio Moderno, also Statistician, Compania Colombiana de Seguros and Companie Colombiana de Seguros de Vida, *Apartado Nacional No. 2088, Bogota, Colombia.*
- Clark, Charles R.**, B.S. (Univ. of Michigan), Student, University of Michigan, *1215 West Cross Street, Ypsilanti, Michigan.*
- Dolby, James L.**, M.A. (Wesleyan Univ.), Mathematical Physicist, Belding-Heminway, Inc., *66 Grove Street, Putnam, Connecticut.*
- Elfvig, Gustav**, Ph.D. (Helsingfors, Finland), Professor of Mathematics, University of Helsingfors, Finland, now visiting Professor, Mathematics Department, Cornell University, Ithaca, New York.
- Embody, Daniel R.**, M.S. (Cornell Univ.), Staff Statistician, The Washington Water Power Company, *P.O. Drawer 1445, Spokane 6, Washington.*
- Frazier, David**, Ph.D. (Stanford Univ.), Research Chemist, Chemical and Physical Research Division, The Standard Oil Company (Ohio), *2127 Cornell Road, Cleveland 6, Ohio.*
- Graf, Herman S.**, B.A. (Alfred Univ.), Student, Department of Mathematical Statistics, University of North Carolina, *58 Winans Drive, Yonkers 2, New York.*
- Greenberg, Bernard G.**, Ph.D. (N. C. State College), Associate Professor and Acting Head, Department of Biostatistics, School of Public Health; Associate Professor, Institute of Statistics, Raleigh, North Carolina.
- Grenander, Ulf**, Ph.D. (Stockholm Univ.), Department of Mathematical Statistics, Norrtullsgatan 16, Stockholm, Sweden.
- Grosh, Jr., Louis E.**, M.S. (Purdue Univ.), Research Assistant, Mathematics Department, Purdue University, W. Lafayette, Indiana.
- Hoffman, Walter**, M.A. (Wayne Univ.), Statistician, Research Laboratory, Childrens Fund of Michigan, *2903 Elmhurst, Detroit 6, Michigan.*
- Hoffman, Robert G.**, A.B. (Stanford Univ.), Student, University of Michigan, *420 Thompson Street, Ann Arbor, Michigan.*
- Hopkins, George D.**, B.S. (Ohio State), Statistician, Sylvania Electric Products, Inc., Ottawa, Ohio, *404 N. Jameson Avenue, Lima, Ohio.*
- Horowitz, Jacob**, B.S. (Columbia Univ.), Graduate Student, Department of Mathematical Statistics, Columbia University, *552 Riverside Drive, New York 27, New York.*
- Huntsberger, David V.**, M.S. (West Va. Univ.), Graduate Student, Iowa State College, Ames, Iowa, *224 Pammel Court, Ames, Iowa.*
- Kempff-Mercado, Rolando**, Lic. en Ciencias Econ. (Univ. Mayor de San Andres), Secretary General of Yacimientos Petroliferos Fiscales Bolivianos (Bolivian Oil Field Authority), *P.O. Box 1283, La Paz, Bolivia.*
- Kennedy, Muriel E.**, B.Sc. (University of Alberta), Statistician, Special Surveys Division, Dominion Bureau of Statistics, *128 Mason Terrace, Ottawa, Ontario, Canada.*
- Lander, Elmer L.**, B.A. (Western Reserve Univ., Cleveland), Student, University of Michigan, *13312 Chapelside Avenue, Cleveland 20, Ohio.*

- Li-Min, Tang**, M.S. (Univ. of Mich.), Student, University of Michigan, *1109 Willard, Ann Arbor, Michigan.*
- Lin, Shao-kung**, M.A. (Louisiana State Univ.), Student, Department of Economics, University of Illinois, *1202½ W. University Avenue, Urbana, Illinois.*
- Mandelson, Joseph**, B.S. (College of City of New York), Mathematical Statistician, Chief, Quality Assurance Branch, Inspection Division, Office of Chief, Army Chemical Center, Maryland, *80 Cedar Street, Edgewood Heights, Maryland.*
- Marthens, Arthur S.**, B.S. (Carnegie Inst. of Tech.), Mathematical Statistician, Bureau of Ships, Navy Department, Washington, D. C., *1320 Montier Street, Wilkinsburg, Pennsylvania.*
- Masel, Marvin**, A.M. (Columbia Univ.), Engineering Statistician, Goodyear Aircraft Corp., Akron, Ohio, *Y.M.C.A., Room 809, 80 Center Street, Akron, Ohio.*
- McCune, Duncan C.**, B.A. (College of Wooster), Graduate Assistant, Mathematics Department, Purdue University, Lafayette, Indiana.
- Meyer, Paul L.**, B.S. (Univ. of Washington), Research Fellow, Laboratory of Mathematical Statistics, University of Washington, *9200-5th, N.E., Seattle 5, Washington.*
- Milberg, Stanley**, M.A. (Columbia Univ.), Statistician, *220 Turrell Avenue, So. Orange, New Jersey.*
- Miser, Hugh J.**, Ph.D. (Ohio State Univ.), Operations Analyst Headquarters, United States Air Force, *2713 Blaine Drive, Chevy Chase 15, Maryland.*
- Morrison, Milton**, M.A. (Columbia Univ.), Instructor of Mathematics, Stevens Institute of Technology, Hoboken, New Jersey.
- Mulholland, Hugh P.**, Ph.D. (Cambridge Univ., England), Associate Professor of Mathematics, American University of Beirut, Beirut, Lebanon.
- Nelson, A. Carl**, M.S. (Univ. of Delaware), Instructor in Mathematics, University of Delaware, Newark, *Marshallton, Delaware.*
- Neuwirth, Sidney I.**, B.A. (N.Y. Univ.), Statistician, Biological Research Laboratories, Schering Corporation, *36 Orange Street, Bloomfield, New Jersey.*
- Pierce, James A.**, B.A. (Westminster College, Fulton, Mo.), Graduate Assistant, Purdue University, *205 Sylvia, West Lafayette, Indiana.*
- Powell, Claude J.**, B.S. (Univ. of Tennessee), Quality Control Engineer, North American Rayon Corp., *615 Hattie Avenue, Elizabethton, Tennessee.*
- Rojas, Basilio A.**, B.S. (National College of Agriculture, Mexico), Graduate Student, Iowa State College, Statistical Laboratory, Ames, Iowa.
- Roseboom, John H.**, M.S. (Dartmouth College), Instructor, Department of Economics, Indiana University, Bloomington, Indiana.
- Sandlin, William T.**, A.B. (Marshall College, Huntington, W.Va.), Independent Sales Engineer, *20 Fairfax Drive, Huntington, West Virginia.*
- Schmitt, Samuel A.**, B.S. (Univ. of Chicago), Research Analyst, Department of Defense, Washington, D. C., *1410 N. Rhodes Street, Arlington, Virginia.*
- Shaw, Richard H.**, M.S. (Purdue Univ.), Research Fellow, Purdue University, *F.P.H.A. 513-1 Airport Road, West Lafayette, Indiana.*
- Smith, Hugh F.**, M.S.A. (Cornell Univ.), Professor of Experimental Statistics, Institute of Statistics, University of North Carolina, *Box 5457, College Station, Raleigh, North Carolina.*
- Sommers, Lysle D.**, B.S. (Bowling Green State Univ.), Sampling Assistant, Survey Research Center, University of Michigan and Graduate Student, *1532 Leeds Court, Willow Run, Michigan.*
- Springer, Clifford H.**, M.Sc. (Purdue Univ.), Instructor, Department of Mathematics, Research Assistant, Statistical Laboratory, Recitation Building, Purdue University, West Lafayette, Indiana.
- Stearman, Robert L.**, M.S. (Oregon State College), Teaching Fellow, Department of Mathematics, Oregon State College, Corvallis, Oregon.

- Tingey, Fred H.**, M.S. (Univ. of Washington), Research Associate, University of Washington, 3310 Goldendale Place, Seattle 5, Washington.
- Tipton, Lamar B.**, M.A. (Columbia Univ.), Statistical Clerk, Standard Oil Co. of New Jersey, 6 W. 604th Street, Shanks Village, Orangeburg, New York.
- Topp, Chester W.**, M.A. (Univ. of Illinois), Associate Professor of Mathematics, Fenn College, 1524 Comton Road, Cleveland Heights 18, Ohio.
- Vora, Shanti A.**, M.Sc. (Bombay), Student, Department of Mathematical Statistics, University of North Carolina, 210 A, Phillips Hall, Chapel Hill, North Carolina.
- Willis, Myron J.**, A.M. (Indiana Univ.), Instructor of Mathematics, Purdue University, Statistical Laboratory, Lafayette, Indiana.

REPORT OF THE CHICAGO MEETING OF THE INSTITUTE

The forty-third meeting and the first regional Mid-western meeting of the Institute of Mathematical Statistics was held on the campus of the University of Chicago, Chicago, Illinois on Friday and Saturday, April 28 and 29, 1950. The morning session on April 29 was held jointly with the American Mathematical Society. The following forty-six members of the Institute were registered as present:

K. J. Arnold, Max Astrachan, Reinhold Baer, Alvin G. Brooks, I. W. Burr, P. G. Carlson, Herman Chernoff, P. S. Dwyer, H. P. Evans, J. S. Frame, Mary Goins, R. D. Gordon, John Gurland, P. R. Halmos, P. C. Hammer, W. L. Hart, M. A. Hatke, P. E. Irick, Howard L. Jones, Leo Katz, J. P. Kelly, W. M. Kincaid, L. A. Knowler, Tjalling Koopmans, F. C. Leone, F. W. Lott, W. G. Madow, A. M. Mark, John W. Mauchly, Kenneth May, Duncan C. McCune, Cyril G. Peckham, G. B. Price, P. R. Rider, Norman Rudy, L. J. Savage, G. R. Seth, Richard H. Shaw, Jack Sherman, M. D. Springer, Robert G. D. Steel, Z. Szatrowski, J. V. Talacko, R. M. Thrall, L. M. Weiner, M. E. Wescott.

Professor Lloyd A. Knowler of the University of Iowa presided at the Friday afternoon session. The program consisted of the following invited papers:

1. *Why and Where Should Courses in Statistics Be Offered to Engineering Students?* M. E. Wescott, Northwestern University.
2. *What and How Statistics Should be Taught to Engineering Students.* I. W. Burr, Purdue University.

Following this session a tea was given by the Department of Mathematics of the University of Chicago.

Professor John Gurland of the University of Chicago presided at the Saturday morning session. This session was held jointly with the American Mathematical Society. The program was as follows:

1. *The Distribution of the Quotient of Ranges in Samples From a Rectangular Population.* Paul R. Rider, Washington University, St. Louis, Missouri.
2. *A Geometric Method for Finding the Distribution of Standard Deviations when the Sampled Population Is Arbitrary.* (Preliminary report). Paul Irick, Purdue University.
3. *Probability of a Correct Result with a Certain Rounding-off Procedure.* W. S. Loud, University of Minnesota.
4. *Analysis of a One-person Game.* (Preliminary report). W. M. Kincaid, University of Michigan.