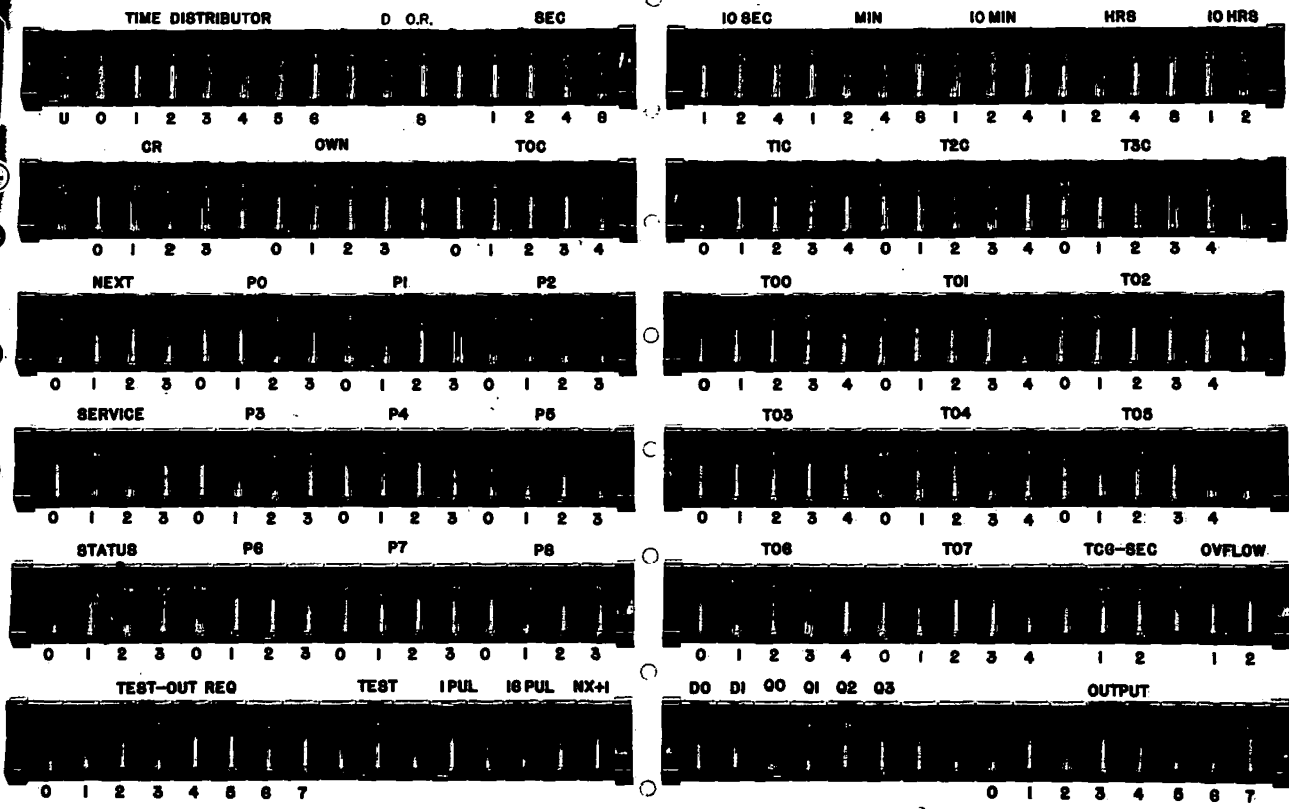


MULTIPLEXER



TEST

TEST-OUTPUT REQUEST

CLOCK CONTROL

RECORD STOP

TEST CLEAR

MANUAL PULSE

EXT 0.5MHZ 1.0MHZ INT 0.5MHZ 1.0MHZ

MANUAL 1/8 PUL 1 PUL NX-H

0 1 2 3 4 5 6 7

0 1 2 3 4 5 6 7

0 1 2 3 4 5 6 7

0 1 2 3 4 5 6 7





NRL LABSTRACTS

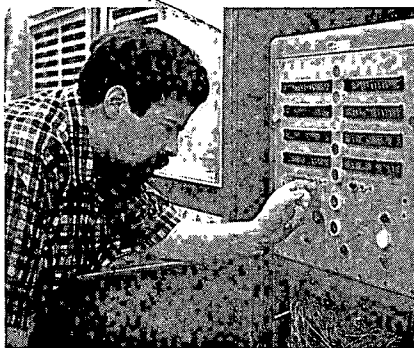
No. 26

NAVAL RESEARCH LABORATORY, WASHINGTON, D.C.

June 30, 1967

Maryland Confers Ph.D. on Edison Fellow

The University of Maryland conferred the Ph.D. degree in electrical engineering on Bruce Wald, Head of the Processing Section, Intercept and Signal Processing Branch, Electronic Warfare Division, on June 3.



Dr. Wald came to NRL in 1953, and at that time began part-time graduate studies in physics at the University of Maryland. He discontinued his studies in 1957 and has explained this action by saying, "My NRL assignment is too exciting to permit distractions."

Nevertheless, counseled by his supervisors, and by the late Drs. Langford T. Bourland and Horace M. Trent, he applied for a Thomas A. Edison Memorial Graduate Training Fellowship in 1964 and resumed half-time studies in electrical engineering, specializing in digital computer and computer operating system analysis. Dr. Wald has been heard to wonder if his 14-year span from matriculation to graduation sets a record for NRL's Science Education Program.

The following quotation is taken from the preface of Dr. Wald's dissertation, which is entitled, "The Throughput and Cost Effectiveness of Monoprogrammed, Multiprogrammed, and Multiprocessing Digital Computers":

"...the author would like to ex-

press his deep gratitude to the Naval Research Laboratory. This laboratory provided the research environment which suggested the investigation, supported the author's graduate studies with a Thomas A. Edison Memorial Graduate Training Fellowship, made available several hundred hours of computer time, and performed the editorial, illustration, typesetting, and reproduction services necessary for the physical production of this dissertation."

**NRL
Enters 45th Year
of Business
on
July 3**

Dr. Hein to Receive Hulburt Award

Dr. Robert A. Hein, Cryogenics Branch, Solid State Division, has been selected to receive the Laboratory's 12th Annual E. O. Hulburt Science Award.



The selection of Dr. Hein for this award was based on his "international leadership in pioneering investigations in the temperature range below 0.1° Kelvin and contributions to knowledge of super-

New Chief of Naval Operations

President Johnson has nominated Admiral Thomas H. Moorer to be the new Chief of Naval Operations, succeeding Adm David L. McDonald who retires August 1.

Admiral Moorer moves up to the Navy's top military post after serving as Commander-in-Chief, Atlantic, and Supreme Allied Commander, Atlantic, with headquarters in Norfolk.

Statements of Employment and Financial Interests Postponed

Information has been received that the submission date of Statements of Employment and Financial Interests, which would otherwise have been required as of June 30, 1967, has been postponed until September 30 in order to allow time for DoD implementation of the recently revised Civil Service Commission regulation on this subject.

conductivity." For a long time it was generally believed that superconductivity was a relatively isolated phenomenon, peculiar to a limited number of materials. Dr. Hein's research has played a significant role in changing this idea to the notion that superconductivity may well be the condition to be expected for most materials if they are cold and pure enough, sufficiently free of magnetic flux, and not already ferromagnetic.

Capt James C. Matheson, Director, will present the award to Dr. Hein at a ceremony to be held on Thursday, July 6, in the Auditorium of Building 28. The ceremony will begin at 12:00 noon, at which time, Dr. Hein will deliver an address on "Ultralow Temperature Research at NRL; Past, Present, and Future."

All interested persons are invited to attend.

Freedom of Information Bill Effective July Fourth

Public Law 89-487 (89th Congress) S. 1160, known as the Freedom of Information Bill, goes into effect on July 4, 1967.

The new law expresses the intent of Congress regarding the right of American citizens to information about their government.

There has been considerable comment in the press concerning the new legislation and how it will be complied with by various government agencies.

Secretary of Defense Robert S. McNamara, in a memorandum to all military departments dated May 1, 1967, reaffirmed that the public information policy of the DoD demands maximum disclosure of information except for that which would be of material assistance to potential enemies. He has instructed the Assistant Secretary of Defense (Public Affairs) to take all actions necessary to implement that policy, assuring that nothing inhibits the flow of unclassified information to the American public.

Detailed instructions for implementing provisions of the new law throughout the Defense establishment are expected soon. In the meantime personnel may continue in accordance with present NRL policies concerning release of information to the public.

All requests for information from news media sources should be referred to the Public Affairs Branch, Ext. 2541.

New Wage Board Policy Just Over the Horizon

The Civil Service Commission will issue a statement of policies for a coordinated wage board system as soon as final agency and union comments on a recent proposal are received and considered.

The new system, which will cover about 700,000 blue-collar employees in the trade, craft, and laboring occupations, is designed to provide the same wage rate for the same job in the same locality, no matter what agency the job is in.

Major policy proposals now under study cover such matters as the job grading system including

descriptions and the ranking of key jobs, reduction in the number of separately defined occupations, coverage of wage surveys, and the relating of average industrial rates to wage board rates.

Provisions are included to assure that any employees adversely affected by the change to the new system, and few should be so affected, will retain their existing pay rates indefinitely, and that they will also receive one-half of future wage increases until new wage scales catch up.

Employees would also be allowed to appeal job classifications to their agencies and then to the Commission.

The proposed policies place special emphasis on providing the maximum employee participation in the program, consistent with program objectives.

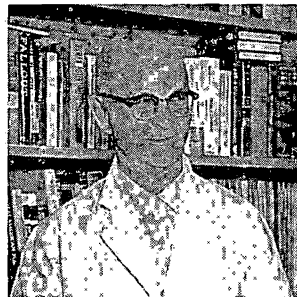
Employee representatives would serve on the Advisory Committee on Wage Policy of the Civil Service Commission and on agency advisory committees at the discretion of the agencies. They would also be consulted on new program developments and job standards.

A Visit With...



Vincent P. Benedetti

Underwater Sound Reference Division; Physicist in Ultrasonics Unit; 22 years at USRD; served 3 years in USNR; B.S. from Rollins College, Winter Park, Fla.; he and his wife, Arline, have 5 girls and 1 boy; enjoys skindiving (he is a qualified Navy diver), gardening, fishing, and photography; member of Acoustical Society of America; originally from Richmond, Va., now lives in Orlando.



Owen R. Gates

Metallurgy Division; he is a Chemist and Head of the Chemical Methods of Analysis Section; with the Laboratory for 16 years and with the Gov't since 1936; has taught school and worked for Office of the Inspector of Naval Material, Pittsburgh; A.B. and M.S. from West Va. U.; he and his wife, Helen C., have two daughters; he lists nature study as his prime outside interest; native of Uniontown, Pa.



Luna M. Boehlert

Office of the Comptroller; she's the Administrative Assistant; has been with the Government and the Laboratory since 1945; her husband, Leonard, is an auditor with GAO; she lists golf as her favorite sport, also enjoys cooking; she says that she likes to meet people and enjoys her job; doesn't have anything that she dislikes; originally from the town of De Leon, Texas, now lives in D.C.



Wilbert J. Dyson

Engineering Services Division; Mechanical Engineer in the Design Engineering and Drafting Branch; with the Laboratory since 1951 and with the Gov't since 1938; received his E.E. degree from Howard University; he and his wife, Marion, have one son; wife teaches kindergarten in a District public school; enjoys swimming, bowling, and listening to his stereo-component hi fi set; born and reared in D.C.

Summer Workshop in Control Theory to be Conducted

From July 31 to August 11, the Office of Naval Research will sponsor a two-week workshop at Colorado State University on "Control Theory, Optimization, and Differential Games." This workshop is one of a series planned for joint participation by academic research mathematicians and Navy laboratory scientists.

Emphasis will be given to sustaining contacts between attendees working on interrelated problems and to promoting the rapid dissemination of research results from the ONR contract program. Considerable attention will be devoted to the importance of keeping the academic mathematicians advised of the requirements for mathematical methods being generated by military problems.

Lecture topics may include Lyapunov functions, nonlinear estimation, stability analysis, servomechanisms, and ship propulsion, automatic flight, and ASW torpedo control systems.

Names of members of the scientific staff who are interested in participating should be submitted to ONR Code 432 for approval as soon as possible. The sessions will be Unclassified. For additional information call Dr. H. A. Hauptman, Mathematical Physics Branch, Ext. 535.

"Mathematics Today" Film

The "Mathematics Today" film for July 5 and 7 is "The Search for Solid Ground; A Panel Discussion with Mark Kac, John Kemeny, Hartley Rogers, and Raymond Smullyan" (62 minutes). It will be shown in the Auditorium, Building 28, at 11:00 a.m.

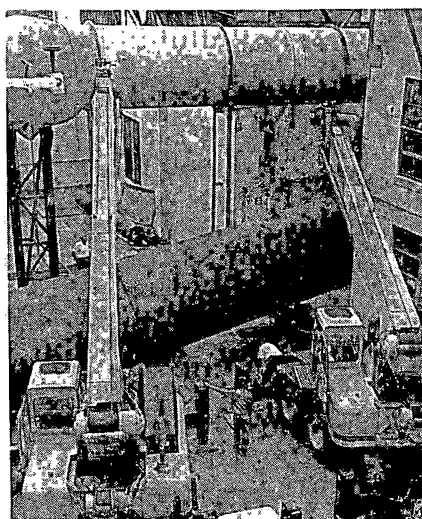
This film is a wide-range panel discussion originally broadcast by the "Science and Engineering Television Journal." The group is here involved with recent developments in logic and their implications for mathematics. Prepared for the scientific lay public, this stimulating discussion provides a valuable introduction to the concerns of modern logic and will be of interest to the professional mathematician as well.

Commemorative Stamps

A 5-cent stamp commemorating the 150th anniversary of the Erie Canal will be first placed on sale on July 4, at Rome, N.Y. Address requests to the Postmaster, Rome, N.Y. 13440. Requests must be postmarked no later than July 4.

A 5-cent Search for Peace commemorative stamp will be issued on July 5, at Chicago. Address requests to the Postmaster, Chicago, Illinois 60607. Requests must be postmarked no later than July 5.

New Addition to Vacuum System Installed



An addition to the Applications Research Division's vacuum system for space simulation was moved into place on June 14. The new 8-foot diameter section will be the casing for two oil jets designed by the Plasma Section, Applied Physics Branch, and to be manufactured by the Engineering Services Division. When the entire structure is complete, it will improve the capability of the space-simulation chamber, which is now limited to altitudes of about 50 miles. Prior to installation of the jets, the new casing will be used for mass spectrometric studies on rocket exhaust at simulated altitude, to further the already intensive investigations of electrical, mechanical, and chemical properties of plasmas and their relation to military systems.

Swim Classes Now Forming

The NRL Recreation Club is offering swim instructions by a qualified Red Cross instructor. In order to provide more thorough instruction, the classes will be limited to 8 persons, and there will also be a minimum age limit of 8 years. Registration may be by telephone (Ext. 491) or by coming to the Rec Club during regular club hours. Extra classes may be formed, depending on the number of people who register.

The order of priority for enrollment in the classes will be: assessed members, non-assessed members, and guests.

Because of the class size limitation, the fees for NRL employees and dependents will be \$5 at registration, and no pool admission fee will be charged at each class. Guests will be charged \$5 when they register, and then they pay the regular pool fee of 50 cents at each class.

Classes will be on Thursday night, starting on July 6. The hours will be:

- 6:30 - 7:00 p.m., beginners class No. 1
- 7:00 - 7:30 p.m., beginners class No. 2
- 7:30 - 8:00 p.m., advanced beginners
- 8:00 - 8:30 p.m., intermediate and swimmers
- 8:30 - 9:00 p.m., adults (the pool will be cleared and reserved for the adult class only at this time)

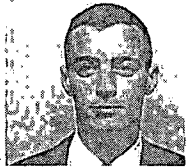
These hours are subject to change, depending on the number of registrants. Also, other classes may be held on a different night of the week.

The NRL Recreation Club is also considering junior and senior life-saving classes. Registration will be open to 12 to 16 year olds, for the junior class, and over 16 years for the senior class. The time and fee will be determined later.

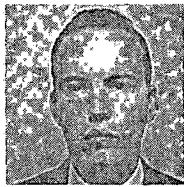
Lost

Mr. Angino, Safety Branch, lost a spiral notebook, 8-1/2 x 11, dark brown, containing 4 pages of notes of an inventory, no identifying marks. If found, please call him on Ext. 423.

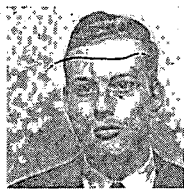
New Faces: Welcome Aboard!



Thomas J. Jesswein
Student Trainee
Electronic Warfare



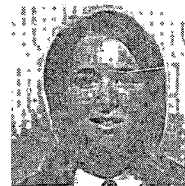
Kenneth J. Johnston
Astronomer
Atmos. and Astro.



David M. Gottlieb
Physicist
Atmos. and Astro.



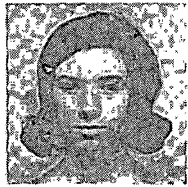
Thomas J. Higgins
Physicist
Electronics



Patricia G. Hollyfield
Clerk Typist
Radio



James H. Hunter, Jr.
Research Astronomer
Atmos. and Astro.



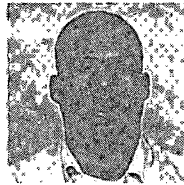
Ann Lanbert
Clerk Typist
Radio



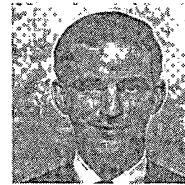
Phillip A. Lange
Mechanical Engineer
OSD



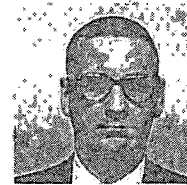
Keith M. Jones
Physicist
Sound



David A. Kaiser
H-L-Truck Operator
Supply



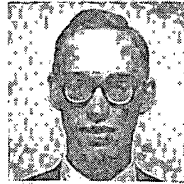
Don L. Klein
Electronic Tech.
Electronics



William S. Kruppa
Metallurgist
Engineering Services



Michael R. Manaker
Mathematician
Optical Physics



Wayne E. Miller
Electronic Engineer
Nuclear Physics



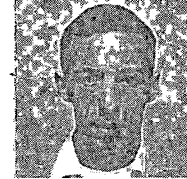
Esther LeBeau
Clerk Typist
Off. Comptroller



Joan A. Linnemann
Clerk Typist
Radio



Richard Margolis
Metallurgist
Metallurgy



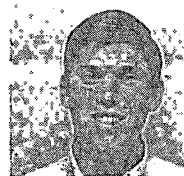
Larry Medsker
Physicist
Nuclear Physics



George E. Price
Electronic Engineer
Electronic Warfare



James E. Quick
Chemist
Chemistry



Christopher Morrow
Photographer (Lab.)
Technical Information



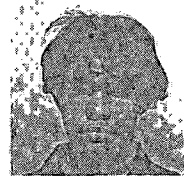
John G. Moyer
Electronic Engineer
Radio



Susan Numrich
Physicist
Nuclear Physics



Linda M. Poole
Astronomer
Atmos. and Astro.



Cheryl D. Reynolds
Working Aid
Public Works



David J. Ritchey
Physicist
Plasma Physics



Gerald Roski
Res. Elec. Engineer
Radio



Nancy V. Roth
Astronomer
Plasma Physics

LABSTRACTS is an official Laboratory medium for communicating with employees about topics of general interest and for publishing news about their work and achievements. It is a weekly publication distributed on Friday. Short notices and announcements should be submitted to the Technical Information Division, Code 2040 (Ext. 2702), by Friday for inclusion in LABSTRACTS one week later. Longer articles should be allowed a two-week lead time.



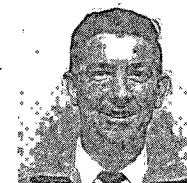
Richard E. Snow
Mathematician
Applications Research



Jack R. Walnes
Trainee
Naval Analysis Staff



Carol C. Ward
Chemist
Chemistry



Billy R. Wilkins
Electronic Technician
Electronics