



NUCLEAR DIVISION NEWS

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 3 — No. 11

Thursday, August 3, 1972

QUESTION BOX

QUESTION: Is it against company policy to make public a list of job duties for each job title for typists, stenographers, etc.? And, also, is there anyone you can contact about a salary scale for clerical occupations? According to our Division Director there is no such information available.

ANSWER: For salary jobs, there are broad position descriptions describing the duties of various classifications such as the ones you mention. These are used primarily as a basis for job evaluation. In most cases, individuals will not perform all of the duties listed in the general description. If an employee has a question regarding his own job duties, he should discuss this with his supervisor.

Salary scales are not published, but an individual interested in the range for his own job should be able to obtain it. Again, he should contact his supervisor regarding this.

QUESTION: Why are there no organized sports for women except bowling?

ANSWER: Sponsorship of Recreation activities are determined by the following: (1) facilities available; (2) number of participants; and (3) costs, etc.

Requests of this nature have been received in the past by the Recreation Departments in the four Nuclear Division plants, and attempts made to initiate such programs. However, insufficient interest has been shown to organize leagues strictly for women to justify the costs involved.

Now that the programs of the three Oak Ridge facilities have been consolidated, perhaps there are sufficient numbers to begin new programs. We are open to your suggestions. Extension 3-5833.

QUESTION: A recent issue discussed the pension plan — the statement was made that some significant changes in the plan in 68-69 were made. Would you please list these changes, the new and as

to the old, and let us decide if the changes were "significant"?

Example: Old Plan, average of last 10 years . . . New Plan, average of best five of last 10 years.

ANSWER: As you indicated, the average earnings used in the "years of service X average earnings" formula was changed from the "final ten." The net effect of this change was an increase of approximately 10 percent in the pension benefit. Other changes were:

(1) A minimum pension benefit was established, the effect being higher pensions for short service and/or lower paid employees.

(2) An automatic pre-retirement surviving spouse benefit was established for employees age 55 with 10 years' service. Previously, such an employee's spouse had no benefits under the pension plan when the employee died before retirement.

At the time these changes were made, UCC also increased benefits of employees previously retired.

Graphite reactor hours extended at laboratory

Beginning last week, the Graphite Reactor was opened to the public for longer hours each day — from 9 a.m. to 4 p.m., Monday through Saturday. Previously it was open only during the afternoons and on Saturday. The longer hours will better accommodate the large number of travelers who have been visiting the reactor this summer.

The Graphite Reactor operated from November 4, 1943, to November 4, 1963. In recognition of the significant contributions made by the facility, the U.S. National Park Service designated the reactor a National Historic Landmark on September 13, 1966, and on August 29, 1968, the reactor was opened to the general public.

(Continued on Page 8)

Three new superintendents appointed at Paducah Gaseous Diffusion Plant

George T. Hull, A.J. (Gus) Legeay and A.M. (Al) Tuholsky have assumed new positions at the Paducah Gaseous Diffusion Plant. Plant Superintendent Clyde C. Hopkins announced the promotions for the three long-time Carbide employees.

Gus Legeay is now Superintendent of the Planning and Technical Support Division. He joined Union Carbide in 1952 when the Paducah Plant was under construction. A veteran of World War II, he served aboard mine sweepers in the Caribbean and Pacific.

Notre Dame graduate

Legeay attended Notre Dame University where he received his B.S. and M.S. in chemical engineering. Prior to his promotion, he was head of the Operations Engineering Department.

A native of McCracken County, Legeay is married to the former Marion Riley, also of Paducah. They have three sons, Michael, Gus Jr., and Stephen. He and his wife reside in the Lone Oak area on Ridgemoor.

Improvements noted in hospitalization, effective August 1

Improvements in the hospitalization program became effective August 1 for all employees in the Nuclear Division. Included are:

- Payment for hospital room and board charges has been changed from a maximum dollar amount to the regular charge made by the hospital for semiprivate accommodations.

- At Oak Ridge, the allowance for a physician's visit during hospital confinements is increased from \$4 to \$5 per visit, starting the fifth day of hospital confinement. Paducah's plan already provides for the \$5 payment.

- The allowance shown in the Surgical Schedule for physician's charges for obstetrical delivery is increased from \$90 to \$125.

In addition to these improvements, changes have been made to bring about more uniformity in administration of the various plans in the Nuclear Division. The most significant of these will permit any Nuclear Division employee who retires early or is totally disabled to continue participation in the hospitalization and/or the major medical plans by paying the full premium.

Agreements concerning these changes have been reached with the various bargaining units in the Nuclear Division. New booklets showing these improvements will be available to Oak Ridge employees within the next few weeks.



Hull

Legeay

George Hull was promoted to Cascade Operations Division Superintendent from Cascade Operations Department head.

In SAM laboratory

Hull is a native of Easton, Penn. He is a graduate of Ohio State University with a B.S. in pharmaceutical chemistry. He came with Carbide in 1944 after working as a chemist at the Elwood Ordnance Plant in Joliet, Ill.

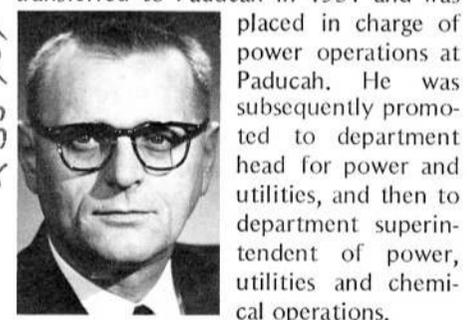
Hull spent six months in gaseous diffusion research in the SAM program at Columbia University before transferring to ORGDP. He came to Paducah in June, 1951.

Before assuming his present position, Hull held positions such as assistant process area supervisor, process area supervisor, process department superintendent, cascade control department head, shift superintendent coordinator and cascade operations department head.

He and his wife live at 3307 Buckner Lane, Paducah. They have three children, Curt, Tina, and Judy.

Al Tuholsky has been promoted to Superintendent of Power, Utilities and Chemical Operations Division.

He joined Union Carbide at Oak Ridge in 1944 and was assigned to vacuum testing operations as a shift foreman. He transferred to Paducah in 1951 and was



Tuholsky

placed in charge of power operations at Paducah. He was subsequently promoted to department head for power and utilities, and then to department superintendent of power, utilities and chemical operations.

Tuholsky is a graduate of Pennsylvania State University with a B.S. degree in electrical engineering. He resides at 400 Buckner with his wife, the former Lois Sammans. They have two children, Robert and Donna.

NUCLEAR DIVISION SAFETY SCOREBOARD

Time worked without a lost-time accident through July 28:

ORGDP	36 Days	462,000 Man-Hours
ORNL	28 Days	479,541 Man-Hours
Paducah	128 Days	798,000 Man-Hours
Y-12	283 Days	10,469,000 Man-Hours.

Safety is everyone's concern!

Next Issue

The next issue will be dated Aug. 24. The deadline is Aug. 15.

Elected ASM fellow

Carl J. McHargue of Metals and Ceramics Division has received word that he is one of 49 members of the American Society for Metals elected to the rank of Fellow in 1972. He is the third such honoree in the Laboratory, the other two being Division Director John H. Frye and his associate director, John E. Cunningham.



McHargue

McHargue, a section chief in the division with long experience in the study of defects and mechanical properties of metals, was selected, according to ASM Director Allan Ray Putnam, in recognition of his "distinguished contribution in the field of metals and materials." This has expressed itself in the publication of over 60 technical papers, occasioning frequent references in metallurgical textbooks.

The honored metallurgist received the Ph.D. in metallurgical engineering from the University of Kentucky, where he also completed his undergraduate studies. He has been a member of ASM for 24 years. McHargue lives at 4629 Robindale Road in Knoxville.

'Cleaner than clean' talk by Schreyer in Capital

James M. Schreyer, head of Y-12's Chemistry Development Department, has addressed the annual convention of the International Platform Association meeting in Washington, D.C., July 13-August 4.



Schreyer

His talk, "Cleaner than Clean," described the operation of Y-12's ultra-clean room system and its possible application in American homes, business offices and industrial plants.

His audience of I.P.A. members consisted of widely-known celebrities from throughout the entertainment, business and political worlds, recognized for their abilities to make entertaining and informative speeches. Schreyer was invited to join the exclusive organization in 1971.

Two ORNL, one ORGDP secretaries pass certified professional secretary tests

Three Oak Ridge secretaries in the Nuclear Division have passed the arduous hurdles to become Certified Professional Secretaries. Two are from the Oak Ridge National Laboratory and one works in the Oak Ridge Gaseous Diffusion Plant. They are Lindy F. Norris, Neutron Physics Division; Dessie B. Stewart, Isotopes Division; and Helen M. Truett, Industrial Relations Division at ORGDP.

Lindy Norris, the former Lindy Floberg, a native of Wisconsin, graduated from William Woody Junior College, Fulton, Mo., and attended evening classes at The University of Tennessee. She was a former legal secretary and worked with the State Department in Israel from 1965 until 1967, both in Jerusalem and Tel Aviv. She was in Tel Aviv during the six-day war. "We never got out of the Embassy and I was scared to death," she says.

Her husband, Ronnie S. Norris, works in Process Maintenance in Y-12. They live in their new home on Melton View Lane, Knoxville. Mrs. Norris enjoys playing softball and at home sews quite a bit.

Dessie B. Stewart

Dessie Ball Stewart came from Whitley City, Ky. She is a graduate of Rogers

Silver Beaver honors go to four ORNLers

Four ORNL men were recently selected to receive the Silver Beaver award by the Great Smoky Mountain Council of Boy Scouts.

Jack Russell, Roy Shipp and John Goan, all of the Instrumentation and Controls Division, and Charlie Haun, of the Plant and Equipment Division, received this award which is the highest awarded to volunteers by the council. The award is based on several years of continuing effort and is not restricted to any particular phase of volunteer leadership.

Indeed, the efforts of these four include being board members, commissioners at various levels, advisors and scoutmasters.



Lindy F. Norris



Dessie B. Stewart

Business College, Somerset. She came to ORNL May 20, 1963, after working in several secretarial positions, the most recent one the Robertshaw Controls Company, Knoxville. She also participated in many of the National Secretaries Association-sponsored courses at UT, as well as other classes in the evening school.

Her husband, William G. Stewart, works with Harriman Motor Company. They live at 100 Paint Road Road, Kingston. They have two children, Sue, a senior at Carson-Newman College; and Ray, a sophomore at Roane County High School.

Her hobbies, which have suffered recently because of studies, are sewing and photography.

Helen M. Truett

Helen Maher Truett, a native of Lenoir City, attended Tennessee Wesleyan College, and also participated in the NSA-sponsored courses at UT, as well as other courses.

Mrs. Truett came with Union Carbide February 23, 1948, and has worked in



Helen M. Truett

training, safety, mechanical inspection, fire department, security, and most recently Industrial Relations. She is married to Jerry W. Truett, in Construction Services with the Tennessee Valley Authority. They have a daughter Jerrene, a social worker in Hyattsville, Md. They live at Route 4, Lakeside Drive, Lenoir City.

An active sportsman, Mrs. Truett is an avid water sports fan, and says she once participated in basketball and softball play.

CPS certificates will be presented all three of the UCC secretaries in seminars scheduled for September in Oak Ridge.



GREETING FIRST LADY — Jana Kay Adkins greets Mrs. Pat Nixon at the recent National Conference of Future Business Leaders of America (FBLA) in Houston, Texas. Jana, the daughter of Glen Adkins, Y-12's Accounting and Budget, is a senior at Clinton High School, and attended the conference as Miss FBLA of Tennessee. The Adkins family lives in the Claxton community.

New materials magazine features ORNL authors

The Institute of Nuclear Materials Management published the first issue of its new magazine Nuclear Materials Management in April with ORNL authors featured. Roy G. Cardwell of Metals and Ceramics Division wrote "Control of Materials in Research: A Special Management Problem." Ronnie A. Bradley and John D. Sease also of Metals and Ceramics Division authored "The Design and Operation of a Plutonium Laboratory."

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COMMUNITY INVOLVEMENT — What do we do next? That is the question this group of Nuclear Division men are asking themselves, after completing a 600-person questionnaire among Oak Ridge blacks. The survey dealt with educational material on sickle cell anemia. Of immediate concern was the sickle cell trait present in about one in every 10 American Negroes. From left are Frank Gethers, James Barnes, Charles Hinton, Chalmers Wilson and Martin Perrote.

Oak Ridge group engaged in sickle cell anemia war

A group of young men from the Nuclear Division in Oak Ridge have combined their talents to combat sickle cell anemia, an inherited blood disease that causes premature death in black children and young black adults.

The Atomic City Sportsmen's Club has already blanketed the black community in Oak Ridge with a questionnaire on the malady. "Education is our main objective," says Chalmers Wilson, president of the ACSC.

"What we have tried to do is to determine how many people have heard of sickle cell anemia and how they found out," Wilson explained. "Our next move is to find an active testing program. The money is there, if we can show interest, we can set up the facilities to have everyone in the community tested. Then we can go from there. We can pin-point parents who both have the genetic trait of sickle cell and advise them not to have children. This is the only manner in which sickle cell can be permanently eradicated."

The club is in the process of sorting the data out now, and is seeking a simple method to have the community blood-tested. The blood-test is relatively simple, according to Wilson, and health officials have stated an interest in establishing a local examining program.

The organization has also enlisted the aid of Dr. Thomas A. Lincoln, director of the medical division of Oak Ridge National Laboratory. Dr. Lincoln wrote an article on sickle cell anemia in his May 11 column in the Nuclear Division News.

"The voluntary work being done in the program definitely has merit," Lincoln states.

Nuclear Division men active in the sickle cell fight include Quentin Long, Joe Gray, Frank Gethers, John Purnell, James Barnes, Gene Hawkins, Larry Gibson, Albert Wilkins, Marvin Scott, John Mayo, Bill Huff, E.H. Upton, Charley Hinton, Wilbert Minter, Martin Perrote, Horace Miller, as well as Wilson.

While the data is being digested, the next step has not been determined.

"We are not putting all our eggs in one basket," president Wilson pointed out, "Sickle cell is just one of the projects ACSC is involved in. Right now, however, it is our most important activity."

Y-12ers author paper for microscopy society



Ammons

Johnson

D.H. Johnson and Aubrey M. Ammons, Y-12's Development Division, have authored a report to be presented at the Electron Microscopy Society of America meeting in Los Angeles, August 14-18.

The title of their study is "Hardening Effect and Electron Metallography of Precipitation in Uranium with Small Additions of Titanium."

QUESTION BOX

QUESTION: Can we advertise items for sale in the Nuclear Division News?

ANSWER: Space limitations prohibit personal-type want ads in the pages of Nuclear Division News. With 14,500 plus employees to serve, a classified want-ad section would occupy a great deal of space. The News, does, however, accept ride wanted or car pool type advertisements.

Administrative changes announced in ORNL divisions and functions

A number of administrative and organizational changes have been made recently at ORNL.

Wilbur D. Shults, who headed the methodology department of Research and Development of Analytical Instrumentation Section of Analytical Chemistry Division, has been appointed assistant director of that division. Doyle M. Davis, former chief of the Safety Engineering and Special Projects Section of Health Physics Division, is a new assistant director of that division. William D. Burch, formerly an assistant section chief in Chemical Technology Division, has been named project director of waste management improvements. H.C. McCurdy, director of space programs, is the new manager of the LMFBR High Temperature Structural Design Methods Program.

The Civil Defense Research Project has been transferred to Health Physics Division. The civil defense activities are reconstituted as the Civil Defense Research Section, with Eugene P. Wigner as senior research advisor and Conrad V. Chester, former coordinator for engineering research for the project, as section chief; the Urban Growth Patterns Research Section is established with R.C. Taeuber, former director of these studies, as section chief. The Urban Technology Research Program will continue under the leadership of Reactor Division Director Sam E. Beall.

The Ecological Sciences Division has been renamed Environmental Sciences Division and assigned new research areas. Edward G. Struxness, former assistant director of Health Physics Division, has been appointed assistant director of



Shults

Davis

Environmental Sciences Division. The Waste Disposal Research and Engineering Section of Health Physics Division has been reassigned with part joining Chemical Technology Division and the remainder joining Environmental Sciences Division.

J. C. Pigg ends 26 years with reserves

J.C. Pigg, ORNL Solid State Division, has retired from the Naval Reserve after 26 years of active and reserve duty. During WW II he served with the Amphibious Forces in the Pacific. During much of his reserve duty he served with the Naval Reserve Intelligence Unit 614 in Knoxville. He retires with the rank of commander.

Pigg came to ORNL in 1948. He is a senior scientist currently researching radiation effects on insulators. He lives at 130 Euclid in Oak Ridge.



FORTUNATE ARE THOSE WHO SEE FLOWERS AND CRITTERS INSTEAD OF WEEDS AND VARMINTS AS THEY GO BY THIS WAY

NH

ORNL ARTIST SHOWS WORK — The work of Nancy Hennon, Biology Division, will be displayed through August 31 at the Oak Ridge Public Library at the Civic Center. The one-man show features landscapes, nature subjects and "Li'l Creatures" such as the photo above. Mrs. Hennon who designs note cards for "Earth Craft," a Minnesota printing firm, is the wife of Gary Hennon of ORNL's General Engineering Division.

Frances Hamilton new woman of year in Paducah's business women's group

Frances Hamilton, Engineering Services Department at the Paducah Plant, has been selected "Woman of the Year" by the Paducah Duchess Chapter of the American Business Women's Association (ABWA).

Annually, each ABWA chapter selects one of its members for this award. Selection is based on the progress the member has made in her chosen field, the extent of her education background, and other interests including community and character building areas.

Mrs. Hamilton began her employment with Union Carbide in July, 1967, as secretary-receptionist in the Industrial Relations Division. She has worked in the Finance and Materials Division and presently is secretary to V.A. Smith, Engineering Services in the Fabrication and Maintenance Division. Prior to joining Union Carbide she was employed at Pennsalt Chemicals, as a receptionist and switchboard operator for two years.

Mrs. Hamilton has served as treasurer, banquet chairman, and is presently social chairman of the Paducah ABWA. She will represent the chapter in the competition



Mrs. Hamilton

for the nation title of "American Business Woman of the Year." Announcement of the winner will be made at the Association's convention October 13-15 in Miami Beach, Fla.

The ABWA was founded in Kansas City, Mo., in 1949. It now has more than 60,000 active members throughout the United States. Primarily educational in nature, ABWA encourages women to pursue continued education which will qualify them for advancement.

Over \$350,000 in scholarships was awarded by ABWA chapters throughout the country during the past year. The Association's national educational fund provided an additional \$70,000 for students.

ATTEND CONFERENCE

Four Oak Ridge Gaseous Diffusion men recently attended a plant supervisors course at Georgia Institute of Technology, Atlanta. Attending were John H. Purnell, technical assistant training coordinator; Lavere C. Wrights, Henry H. King, and Lawrence M. Case, all supervisor trainees at ORGDP.

Foreign assignments

Two ORNL staff members are slated for foreign assignment.

Peter F. Dittner, Chemistry Division, will begin a 12-month assignment in August with the Institut für Anorganische Chemie und Kernchemie, Johanna Gutenberg-Universität Mainz, Mainz, Germany. He will collaborate with his colleagues there on rapid chemical separation techniques and nuclear spectroscopy of short-lived, neutron-rich transition elements. Further he will work with the heavy ion accelerator (UNILAC) group at Darmstadt in a cooperative program to develop physical techniques to identify the atomic number and mass of new elements.

George P. Smith, Metals and Ceramics Division, will become a visiting research professor in the Chemistry Department of the Technical University of Denmark, Lyngby, Denmark, for one year beginning September 1. While at the Technical University he will conduct research on unusual coordinations and oxidation states of metal ions in halide systems.

J. J. Turnbull, Receiving, died in Knoxville hospital

James J. Turnbull, Y-12's Receiving Department, died July 12 in a Knoxville hospital.

A native of the Wheat community (where ORGDP now stands), Turnbull lived on Lawnville Road, near Kingston. He came to Y-12 February 9, 1959, after working at Rose Brothers Garage, Kingston, and at ORGDP.

Survivors include his wife Mrs. Elya Dean Turnbull; daughters, Cheryl Jahnke, Diane Trammell, Brenda and Mildred Turnbull; sons, Jim and Howard Turnbull; two sisters, and seven grandchildren.

Funeral services were held at the Calvary Baptist Church with the Revs. Ray Bearden and John Ward officiating. Burial followed in the church cemetery.



Mr. Turnbull



Y-12 PLANT

RIDER from West Hills, Cedar Cluff area, Knoxville, to West Portal, straight day. J.R. Stephens, plant phone 3-5465, home phone Knoxville 693-9116.

RIDER from North Knoxville, vicinity of Whittle Springs Road and Washington Pike, or Clinton Highway, to East, North or Central Portal, straight day. J.F. Baker, plant phone 3-5935, home phone Knoxville 523-4542.

ORNL

JOIN CAR POOL from Alder Lane in Oak Ridge to either portal, 8:15 a.m. Gurmukh Gill, plant phone 3-1322 or home phone 483-1794.

JOIN CAR POOL from Fairview Hills (near Timbercrest and Papermill Road exit in Knoxville) to East Portal, 8 a.m. Mina Daniels, plant phone 3-1466.

RIDERS from Cedar Bluff and Walker Springs Road area to West Portal, 8:15 a.m. Jackie Sims, plant phone 3-1732 or Knoxville 588-7569.

CAR POOL MEMBER from eastern Oak Ridge from the Florida Avenue - Taylor Road area to East Portal, 8:15 a.m. Bonny Talmi, plant phone 3-1466 or Oak Ridge 483-6029.

Harry King son honored for school performance

Harry G. King III, son of Harry G. King, Y-12's Laboratory Development, has been made a member of Phi Eta Sigma, the highest scholastic honor a freshman can attain at The University of Tennessee.

King is following a premedical curriculum, majoring in microbiology and plans to continue with his education at UT in Memphis. He hopes to specialize in cardio-surgery. A 1971 graduate of Oak Ridge High School, he was a member of the American Field Service, the National Honor Society, and the French Club.

Additional power units planned to up capacity

During the first half of 1972, electric utilities made known plans for 18 nuclear power generating units with a total capacity of about 19,413,000 kilowatts to be located at 12 power stations. Reactor supplies were selected for seven of these units and for seven previously announced by the Atomic Energy Commission.

In the first half of 1971, utilities made known plans for 16 nuclear power generating units with a total capacity of 16,046,000 kilowatts for locations at eight power stations.

To date, 26 nuclear power plants are operating with a capacity of 11,817,900 kilowatts, with 51 being built and 66 planned for a total operating capacity of 121,694,000 kilowatts.



SCOUTS VISIT OVERLOOK — 98 Boy Scouts with nine adult leaders visited the Overlook at the Oak Ridge Gaseous Diffusion Plant recently. The Scouts, from Morris and Sussex Counties of New Jersey, had just returned from a 12-day visit in the hills of the Far West, near Philmont Scout Ranch, Cimmaron, N.M. Major Howard Killiam, from the Picatinny Arsenal, Dover, N.J. was the head Scoutmaster for the group.

William D. McCluen, ORGDP's Operations Division, welcomed the group to the Overlook. (They are seen discussing the group's schedule in the center of the photo.) While in Oak Ridge, the Scouts also visited the Graphite Reactor at ORNL and the AEC's Atomic Energy Museum. They spent the night in Radford, Va. before heading home.

Many ORNL staffers attend foreign meetings

Many ORNL staff members will be participating in international meetings during August.

The meeting evoking the greatest ORNL participation is the IV International Biophysics Congress in Moscow, USSR, August 7-14. James E. Donnellan Jr., Biology Division, will present "Repair of DNA in the Absence of Normal DNA Replication." Donald E. Olins, biologist and associate professor in the graduate school of Biomedical Sciences, will chair a session on "Desoxyribonucleoproteins" and will present a paper "Biophysical Studies of Nuclear Chromatin Condensation." Gerald L. Vaughan, postdoctoral trainee in Biology Division, will present "Replacement of Electrolyte Transport Sites Following Ouabain-Blockade in Human Cells." Dorothy Skinner, Biology Division, will present "The Diversity of Crustacean Satellite DNAs." William L. Carrier, Biology Division will present "Action of a UV Endonuclease on Irradiated Bromouracil-Containing DNA." Ronald O. Rahn, Biology Division, will present "The Influence of Heavy Metal Ions on the Actophenone Sensitization of DNA." Jane K. Setlow, Biology Division, will present "Molecular Basis of Transformation Defects in *Haemophilus Influenzae*." James W. Longworth, Biology Division, will present "Energy Transfers within Proteins." He is coauthor of a contributed paper "Energy Transfers within Trypsin." Malcolm L. Randolph, Biology Division, will present "Radiobiological Implications of Microscopic Spatial Distributions of Energy Deposited by Ionizing Radiations."

Longworth will also present a paper "Late Pulsing in Photomultipliers" at the International Symposium on Relaxation Methods in Copenhagen, Denmark, August 15-17.

To Bochum, Germany

Several ORNL staff members will present papers at the VIth International Congress on Photobiology at Bochum, Germany, August 21-25. Jane K. Setlow will discuss "Evidence for the Involvement of a Specific UV Endonuclease and a Recombination Gene in DNA Maintenance by *Haemophilus Influenzae*." Ronald O. Rahn will present a paper on "Alterations in the Photochemistry and Luminescence of DNA Induced Heavy Ion Binding." William L. Carrier will talk on "Ultraviolet Sensitivity of DNA Containing Bromodeoxyuridine," coauthored by R.B. Setlow. Paul A. Swenson, Biology Division, will present a paper "Death through Respiratory Failure in a Fraction of UV-Irradiated *Escherichia coli* Cells."

Norman G. Anderson, director of the Molecular Anatomy Program, will serve as an official delegate to the Moscow Congress and as chairman of the United States National Committee to the International Union of Pure and Applied Biophysics. In addition he will give several lectures while in the Soviet Union.

J.R. McGuffey will attend the III Inter-American Conference on Materials in Rio de Janeiro, Brazil, August 14-17. He will present "The ASME Quality Assurance Program for Nuclear Reactors" and, for John H. Frye, director of Metals and Ceramics Division, "Radiation Damage in Structural Materials." McGuffey is superintendent of Inspection Engineering.

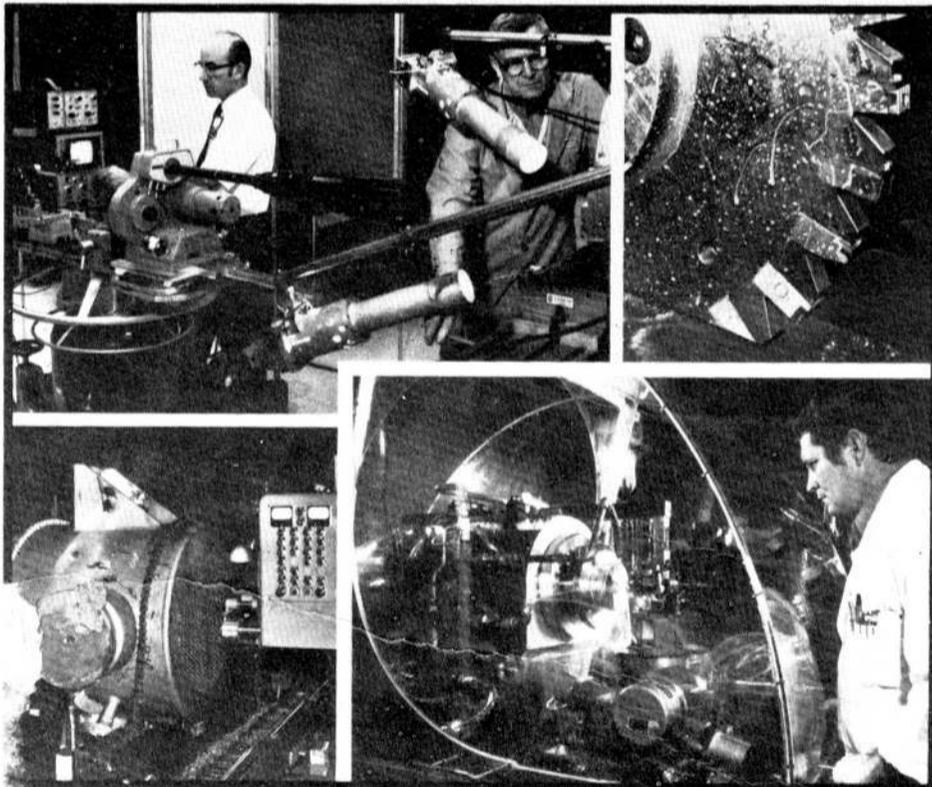


OUTSTANDING SCHOLAR — Ricky Spears, son of Richard Spears, Assembly Technical Staff in Y-12, was recently awarded the "Outstanding Scholastic Schievement" award at Farragut School. He was also awarded the Math Award, and represented Farragut in the Knox County Spelling Bee. Active in football circles, Ricky also plays little league baseball.

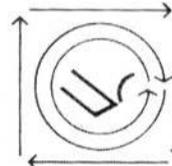
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MAY/JUNE 1972

CUTTING TOOL ENGINEERING



Computer's Memory Relies on Diamonds
Tube Sheet/Screw Machine Work
Inspection of N/C-Machined Parts—Part 2



MAGAZINE COVER — Y-12 Plant technology has made another magazine cover. The May/June issue of "Cutting Tool Engineering" published a photograph of the experimental rig used by Fabrication Systems Development Department to make high speed motion pictures of cutting tool problems. The photo, made by William N. Shipley of Photographic Services, shows Roy L. Williams and John E. Clemons at work with the equipment. The magazine also published a feature story on the experiment.

Ultraviolet absorption method determines organic molecules found in sewage effluents

A method for determining organic molecules in sewage effluents, and a suggested way for eliminating the discharge of chromate corrosion inhibitor to lakes and streams are included in the latest Industrial Cooperation Bulletins being mailed to industries throughout the nation.

Each bulletin describes a specific item, reports on the stage of development, the potential industrial application and patent status. In addition, the bulletins give the names of those persons from whom additional information can be obtained.

Now being elevated

The determination of organic molecules in sewage effluents is made by ultraviolet absorption. This method, originally developed for the analysis of body fluids, was selected as one of the 100 most significant new technical developments of 1970 in a competition sponsored by Industrial Research, Inc. The method is now being tested for possible use with sewage effluents which have been concentrated by low-temperature distillation and freeze drying.

The method, now being elevated, is considered useful in elevating new sewage-treatment techniques and in measuring or monitoring the concentration of

stable organic compounds released from any plant that is discharging large volumes of aqueous wastes.

Other items listed

The method of eliminating discharges of chromate corrosion inhibitor has been successfully demonstrated in full-scale equipment for over a year. The process is adaptable to any industrial complex with heat-exchange problems using cooling towers.

Other items included in the Industrial Cooperation Bulletins are:

- An improved plasma-arc welding torch.
- High-speed photography for metal-cutting analysis.
- An improved method for producing oxide crystals having internal fine metallic lamellae.
- Welding machine safety devices.
- A precision welding torch positioner.
- A method for determining tool-patch accuracy.
- A computer program for heat exchangers.
- A device for lifting chemical drums.
- An apparatus for separating particles of different degrees of sphericity.
- A sleeving device for electrical wiring.

The Industrial Cooperation Bulletins are issued on a quarterly basis.

Visit Cape to assist in sampling equipment

Two Y-12 men recently visited Cape Kennedy Space Center to assist the Apollo-17 astronauts in learning the correct procedures for handling the Apollo lunar sampling equipment made by Union Carbide Nuclear Division plants in Oak Ridge and to discuss changes in equipment packing procedures.

They are Ward E. Wampler, new Y-12 coordinator for Apollo fabrication projects, and Fredrick D. Mundt, a physicist in the Y-12 Physical Testing Department.

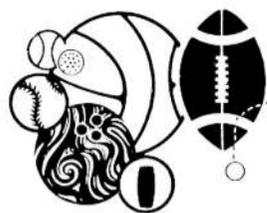
The Apollo-17 astronauts are Eugene Cernan, Ron Evans and Harrison Schmitt. Schmitt, who is scheduled to be the first civilian to explore the moon's surface, visited in Y-12 earlier this year.

Treasury man will visit Paducah for flag-raising

A representative of the United States Treasury Department will present a Minuteman Flag to Paducah Plant employees on August 18, recognizing the employees' participation in the United States Savings Bond program.

Roger F. Hibbs, President of the Nuclear Division will accept the flag along with Robert A. Winkel, former Paducah Plant Superintendent. Representatives from throughout the plant will be present for the ceremony which is to be held in front of the C-100 Building near the flag pole, weather permitting.

The Paducah Plant won the award because of the outstanding record of its employees in signing up for the savings bonds. More than half of the employees are having deductions made from their checks purchasing bonds. In the whole plant, 73 percent are purchasing bonds.



SPORTS NOTES

Tee-Off Time Application for July 22

(Check Appropriate Plant)

- Y-12 CEDAR HILLS, LENOIR CITY, AUGUST 26
- ORNL - SOUTHWEST POINT, KINGSTON, AUGUST 26
- ORGDP - GATLINBURG, SEPTEMBER 9

LEADER

Phone

Bldg.

Time Preferred

COMPLETE AND RETURN TO YOUR RECREATION OFFICE

Entries must be received prior to drawing on August 23, 2 p.m. and September 6, 2 p.m.

ORGDP—Building K1001—C-Wing—Room 136

ORNL/Y-12—Building 9711-5

Tee-off times for all tournaments will be drawn on Wednesdays prior to each Saturday's tournament. Other than at Gatlinburg, golfers are responsible for reserving their own carts by contacting the pro shop following drawing for tee-off times.

ALL CARBIDE

Softball standings through July 20:

Team	W	L
All Stars	13	0
Snakes	13	1
Colts	11	2
Buccaneers	11	3
Computes	11	3
Knights	8	3
The Gang	10	4
Bio-Rejects	8	5
Enerjetics	8	5
Hornets	7	6
Supersonics	9	7
Red Barons	8	7
Losers	4	7
Centaur	4	9
Thermos	5	9
Trojans	4	9
Bombers	3	8
Ecology	5	10
Underdogs	3	10
Playmakers	3	11
Ridge Runners	2	8
Raiders	2	10
A-Wingers	0	12

The final golf tournament for Oak Ridge-based sportsmen will be held August 26, (Southwest Point, Kingston, for ORNL and Cedar Hills, Lenoir City, for Y-12) and September 9 (Gatlinburg for ORGDP). The combined coupon application appears above. It will not appear again. ORGDP golfmen are requested to fill out the application promptly and indicate whether a golf cart is desired.

Meanwhile, the Recreation Department announces that vacation literature is available from Building 9711-5, Y-12. It may be mailed to employees, also. Just call 3-5833.

Y-12 GOLF

Benny Crass capped honors in Y-12 Southwest Point golf tournament, carding an even par 72 score. George Dorsey took handicap honors with a fine 75. Harold Alvey captured honors in division two with a 79 score, while Fred Marshall took an 82 handicap tally. Division three went to Jim Shoemaker, with an 84; and Bill McManus with a 93.

ORNL GOLF

Al Gillen put a 75 card into the winning circle to take first honors in the Cedar Hills golf race. Joe Deatherage carded a 78 for handicap honors. J. Amburgey put a 78 up for division two honors, and D. Lee handicapped his way to honors with an 87. Division three went to Charley McGinnis with a 90, and Mario Fontana scored a 92 handicap low.

ORGDP GOLF

Alvin Boatwright parred the Whittle Springs course to win there last month, an even 72. Russ Shugarts' handicap score of 77 was low in division one. John Cobb's 76 scratch score was low in division two, and John Sharpe's 84 was handicap low. In division three it was Carl Peterson, with an 87 scratch score, and Art Mallard with a 94 handicap total.

Y-12 FISHING RODEO

Y-12 announces winners in its 11-category semi-annual fishing contest, with prizes going begging in the muskie category for lack of entries.

Top winners in their respective categories are: Carl E. Oakes, largemouth bass; Monte C. McDonald (Linda's husband), smallmouth bass; Charles Asmanes, striped bass; Shane Burris (Charlie's son), rock fish; Charlie Russell, walleye pike; Albert Buck (Oren's son), trout; Robert Jackson, crappie; Gerald Watson, sauger; Janet Wyatt (Lloyd's daughter), bream; and Michael Lawson, buffalo. Family members are now eligible to participate in plant rodeos.

ALL CARBIDE SKEET

Y-12ers swept the July Skeet firings, as Joe Comolander fired top round with a 49.407 score. He was followed by

COMPANY SERVICE 20-25-30

Y-12 PLANT 25 YEARS

Wallace Humphrey, Bruce B. Coulter, Arthur B. Seabolt, and Elizabeth B. Johnson.

20 YEARS

Robert P. George, Johnnie J. Lynn, L. Irons, William J. Hatcher, William T. Mee, Lonnie Wright, Alvin C. Smith, John M. Mills Jr., Georgia A. Gregory, Giles C. Gregory, Thomas H. Ebert, D.C. Morrison, and William E. Weaver.

PADUCAH 20 YEARS

Alvin A. Plewke, Andrew G. Slaughter, Paul E. Park, Joe A. Ross, Fred H. Joiner, James K. Williams, Charles H. Mason III, James S. McKinney, Lennis B. Robertson, Elbert A. Colson, Robert L. Mullins, Joseph F. Conroy Jr., and Bobby A. Abell.

ORGDP 30 YEARS



Hanig

Murray Hanig joined Union Carbide in 1942, at what eventually became SAM Laboratories, Columbia University. He is a graduate of Cooper Union, and has done graduate work at NYU and UT. He lives at 835 West Outer Drive, Oak Ridge, and is presently in Operations Analysis and Long Range Planning. He transferred from Columbia to the Oak Ridge area in June, 1946.

Tommy Webber, 48.649; and Leon Bray, 48.100. Almost half the competitors were under penalty from previous highs.

ALL CARBIDE HI POWER RIFLE

Jack Mrochek, ORNL, won the fifth match of the All Carbide League Hi Power Rifle Match with a 477 out of a possible 500. Y-12's Jack Huff came in second with 471, and Carl Brewster, also of Y-12, finished third with 463. Eleven other riflers participated in the July match.

ORGDP FISHING RODEO

Ernest Randolph caught the largest fish entered in ORGDP's first half of '72 fishing contest... a 15 pound plus rock fish. Other first class winners in their categories were: Larry E. Brasel, smallmouth bass; Richard Abbott, largemouth bass; Harold E. Walters, sauger; William E. Brown, striped bass; Joe Fletcher, wall-eyed pike; Albert D. Reeder, trout; Howard J. Rash, crappie; Don W. Lynch's son, bream; Duane Counts, son of Gene Counts, drum; and Eli Y. Kimmerly, muskie.

25 YEARS

Karl E. Rapp Jr., Bill I. Wyatt, Robert J. Barnard, John H. O'Brien, James M. Allen, and Helen C. Hobson.

20 YEARS

John H. Lawhorn, Samuel A. Thompson Jr., William B. Luzader, Millard D. Manry, Robert L. Greer, Billy P. Campbell, John L. Petty Jr., Gene Payne, and Graham E. Johnson.

ORNL 25 YEARS

Ted C. Russell, George K. Werner, Hubert N. Wilson, William A. Bird, Leroy D. Vest, Walter C. Brown, Ernie P. Griggs, Hubert N. Cole, Eugene Lamb, Alma J. Soard, Dorothy M. Soard, Edwin P. Taylor, Charles C. Shelton, Mary V. Long, Audra L. Southern, Elmo D. Hillon, Charles C. Rains, Alvin D. White.

20 YEARS

William R. Warren, James P. Jarvis, Frank L. Layton, Alex H. Anderson, Norval F. Zeigler, Joseph G. Scarborough, Floyd H. Watson, Robert A. Francis, Jr., Ellison G. Price, William E. Rogers, Kenneth O. Seiber, John T. Walker, A.J. Smith, Victor A. Amert, Charles W. Collins, Betty F. Maskewitz, Lawrence Landau.



CHAMPION TWIRLER — Tracey Hackney, daughter of John Hackney, Paducah Maintenance Division, recently won the city wide championship baton contest sponsored by the Paducah Parks, Playground and Recreation Department. Tracey has participated in the city baton program for the past three years and has won several awards.

'Sickness' absence among workers

By T. A. Lincoln, M.D.

In most large manufacturing industries in recent years there has been steadily improving medical insurance and care, both in the plant and at home, yet sickness absence rates continue to rise, requests for medical retirement seem to come sooner, and the death rates from cancer and heart disease remain depressingly high. The cost and demand for medical care increase each year. Does this necessarily mean a decreased effectiveness in health care delivery?

Although most people's "gut" reaction would probably be a resounding "yes", it is worth looking at the many social causes which influence health. A favorable impact by medical and paramedical personnel may be overwhelmed by unfavorable nonmedical factors.

Before becoming discouraged, it is worth noting that there has been a considerable increase in the working life expectancy in most developed Western nations during the past 30 years. Although more workers are electing to take early retirement, the ability to work still remains remarkably good until age 65, and sometimes much beyond. Unfortunately, the psychological stresses of modern work, the increasingly rapid obsolescence rate of those with narrow specialties and the higher and higher labor costs have taken their toll of older workers. Tolerance for diminished performance, regardless of cause, after age 55 appears to be decreasing. Early retirement is now becoming attractive both to employers and employees.



Better care, more absence

Sickness absence rates seem to go up with better medical care. In Great Britain, the average number of spells of absence per person under age 45 has increased 80 percent and the average number of days has risen 90 percent during the past 15 years. This alarming increase has occurred in spite of a National Health Service which provides comprehensive medical care. The most distressing fact is that most of the increase has been in the young while there has been little change in those over 45.

In this country, absenteeism in large manufacturing and assembly plants, especially in large cities, is a major contributing factor to increased costs, and therefore prices, of many products. "Poor" health therefore is a significant inflationary force in our economy.

Most of the increase in sickness absences has been in short-term illnesses. These include headaches, indigestion, gastroenteritis, colds, nervousness, hangovers, fatigue, and miscellaneous "bad" feelings without serious illness. It then becomes not so much what one can do about the illness medically, but how the worker reacts to his "sickness."

Satisfaction a factor

Dr. Philip E. Enterline, of McGill University of Montreal, summarized the situation in an article in the Archives of Environmental Health in April, 1966. "If

when a worker is feeling slightly ill, staying away from work involves little risk of losing his job, little or no economic loss, little or no disapproval by his superiors or co-workers, or disruption of their work, and if the only rewards of his work are monetary, he is likely to stay at home. If, on the other hand, there is a labor surplus, he receives no income while away from his job, his job and co-workers require his work attendance, and if he takes personal satisfaction in his job, he is likely to go to work."

Note Enterline's emphasis on job satisfaction as a motivator. George Teeling-Smith, Director of the Office of Health Economics of Great Britain, believes there are four possible explanations for the trend toward greater illness absences among the young. Better diagnostic techniques uncover abnormalities earlier and treatment begins sooner. There is a greater awareness on the part of the public of different types of illness, both physical and mental. Young people are less tolerant of illness and the "process of becoming ill is increasingly the consequence of a social decision rather than the result of specific medical events." He concluded: "The real cause for concern is the impression that the pattern of sickness absence seems increasingly to reflect a pattern of job dissatisfaction, frustration, and anxiety."

TV conditioning

And where do young people become conditioned to health responses? A major influence is television. In a survey made on one channel during a typical 130 hour week, 7.2 percent of the material presented was health related. While 6 percent of the "entertainment" time was devoted to health related items, 19 percent of commercial time was devoted to health. In the opinion of the investigators, 70 percent of the health information on television was inaccurate or misleading.

Children and adults are constantly being conditioned to the universality of indigestion, headaches, insomnia, sinusitis and "the blahs." No wonder people are "sick" more. It is acceptable behavior. Even though drug manufacturers have generously provided us with a fantastic battery of nostrums to relieve our "miserias," young people don't hesitate to take a day or two of rest to recover.

People who find their work challenging and satisfying tend to have far fewer sickness absences. Here then is the real challenge for industry. Constantly improving medical care is essential but keeping people at work will require much more.

Patents granted

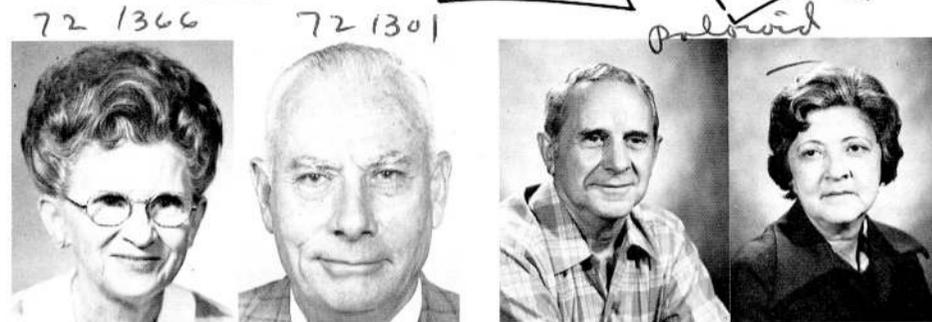
To Joseph J. Asbury, Y-12, for "Method for Producing Porous Uranium."

To Henry D. Bewley, Paducah, for "Aluminum Alloy."

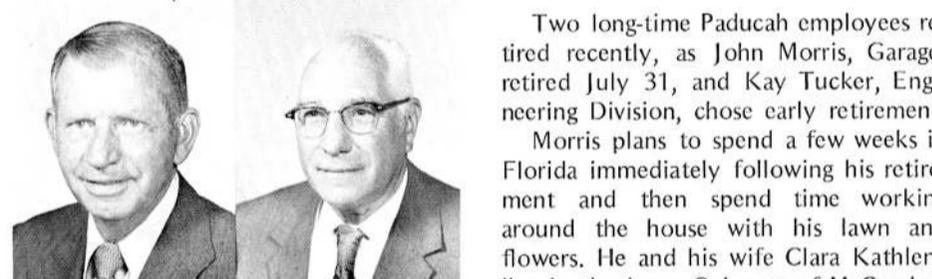
To George S. Petit and Ralph R. Wright, ORGDP, for "Process for Plating Uranium with Metal."

To George S. Petit, Ralph R. Wright and Calvin C. Wright, ORGDP, for "Method of Conditioning Aluminous Surfaces for the Reception of Electroless Nickel Plating."

DIVISION Retirees



Mrs. Burchard 72 1366, Goddard 72 1301, Morris, Mrs. Tucker



Justice 72 1394, Ryder 72 1383

Two long-time Paducah employees retired recently, as John Morris, Garage, retired July 31, and Kay Tucker, Engineering Division, chose early retirement.

Morris plans to spend a few weeks in Florida immediately following his retirement and then spend time working around the house with his lawn and flowers. He and his wife Clara Kathlene live in the Lone Oak area of McCracken County. They have two sons, also living in this area.

Mrs. Tucker has been at Paducah more than 17 years. Prior to her move to Kentucky, she was at ORGDP for eight years. She and her husband will return to Hendersonville, Tenn. They have two daughters, Mrs. Carol Rodgers, Savannah, Ga., and Pamela, a student at Paducah Community College.

Two Oak Ridge Gaseous Diffusion Plant veterans retired August 2, and three more are set to retire at the end of this month.

Charles G. Justice retired to his Route 1, Oliver Springs, home recently. He hired in on October 16, 1944 and has served in many areas including utilities, toll enrichment facility, and others, most recently in operations.

H.M. Hale, whose picture was unavailable also retired August 1. He lives at 111 Temple Road, Oak Ridge, with his wife Clara. He came with ORGDP more than 27 years ago.

Mrs. Josephine Burchard (nee Everett), a library assistant in the Laboratory Division, retires September 1. A native of Union City, she came with ORGDP more than 28 years ago. She lives at 3828 Nathaniel Road, Knoxville. Her husband died in 1964.

Volney B. Goddard Jr., a superintendent in the general maintenance department, retires also September 1. He lives at Route 4, Kingston, and came with Union Carbide May 1, 1944.

Sterling C. Ryder, an accounting leader in Finance and Materials, retires September 1. He came with ORGDP October 9, 1944, and lives at 129 East Tennessee Avenue, Oak Ridge.



Miss Swayze 2352-72, Hawley

Gertrude G. Swayze took early retirement from ORNL's Information Division on July 14. She came to ORNL in July of 1957 after retiring from the Finance Division of AEC. At ORNL she was a library assistant in the acquisitions department of the Central Research Library.

She has returned to her native Mississippi where she plans to visit relatives and play golf.

John C. Hawley will retire from Information Division at the end of August. Hawley has been a photographer at ORNL and more recently located at Y-12 for almost 26 years. He plans to loaf first and is considering doing some free lance photography in the future. He says he "cut his teeth playing drums" and would like to start a combo. He and his wife Cary live at 118 Bradshaw Garden Drive in Knoxville.

Lengthy illness claimed Charles C. Cox, ORNL

Charles C. Cox, mechanical instrument maker in ORNL's Plant & Equipment Division, died at St. Mary's Hospital July 17 from a lengthy illness.

A native of Sullivan County, Mr. Cox joined Union Carbide in November of 1946.

Survivors include his wife Mrs. Gladys R. Cox; sons Charles Jr. and Richard, all of Knoxville; and a daughter, Mrs. Karen C. Krum of Newport News, Va. Eight brothers, one sister and his mother also survive.

Funeral services were held July 20 at Mt. Holston Baptist Church in Bluff City with burial at Crumley Cemetery.



Mr. Cox

BLOODMOBILE VISIT

Nuclear Division employees in the Oak Ridge area are reminded to save a few minutes either September 6 or 7. The Bloodmobile will be at the Armory from 4 p.m. until 10 p.m. September 6, and from noon until 6 p.m. on September 7. The quota will be 532 pints for this visit. Mark your calendar now!

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CALENDAR of EVENTS

TECHNICAL August 4

Physics Division Seminar: "Studies of the Structure of Shell Model Wave Functions," K.H. Bhatt, Physical Research Laboratory, Ahmedabad, India. East Auditorium, Building 4500N, 3 p.m.

August 7-8

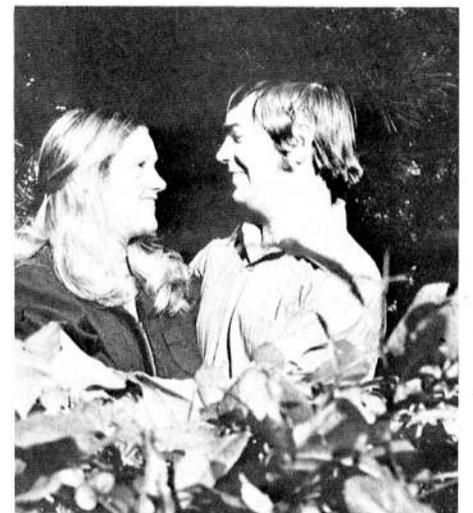
Neutron Physics Division Information Meeting: Central Auditorium, Building 4500N, 9:30 a.m.

COMMUNITY August 4

Beginning Friday, 8 p.m. Oak Ridge Folk Dancers, beginning classes in English Country, Israeli, Balkan, European and many other types of folk dancing. Each Friday for eight weeks. \$4 for eight-week-course. Oak Ridge Civic Center.

August 5-6

Smoky Mountain Gun Collectors Association. Summer Show - Kerbel Shrine Temple, Knoxville. \$1. Saturday 9 a.m. - 9 p.m. - Sunday 9 a.m. - 4 p.m. Shriners with fez admitted free. Free parking. 20-25 tables featuring "Kentucky" longrifles in addition to the usual trade and display tables, all kinds of weapons.



YOUNG LOVERS — Nancy Holmberg and David Billingsley play the leading roles in "The Fantasticks" at the Oak Ridge Playhouse August 11, 12, 18, 19, 25 and 26. Miss Holmberg is the daughter of Robert W. Holmberg, ORNL, and Billingsley is the son of Wallace Billingsley, ORGDP.

Rollicking 'Fantasticks' opens summer Playhouse

"The Fantasticks," the longest running show in theatrical history, will be performed by the Oak Ridge Playhouse August 11, 12, 18, 19, 25 and 26.

Playing lead roles are Nancy Holmberg and David Billingsley. Miss Holmberg is the daughter of ORNL's Robert W. Holmberg; and Billingsley is the son of Wallace Billingsley, ORGDP.

The Oak Ridge production is under the direction of Dodie Quist, wife of Arvin Quist, ORNL. Production manager is Jim Williams, ORNL.

Both Miss Holmberg and Billingsley are highly trained singers. She is a student at UT and he is a Tennessee Wesleyan senior, where he has played leading roles in college productions. He will also participate in regional auditions for the Metropolitan Opera Company next month.

The Playhouse boxoffice with tickets for "Fantasticks" will open August 11.

Graphite reactor hours extended at laboratory

(Continued from page 1)

Constructed as part of the secret Manhattan Project, the Graphite Reactor is the world's oldest nuclear reactor and the only U.S. Atomic Energy Commission-owned reactor to be opened to the public on a routine basis.

It served as the pilot for the plutonium production reactors at Hanford, Washington, and produced the world's first gram quantities of plutonium used in developing a nuclear weapon. As military demands slackened, it became the prime producer for the world's supply of radioisotopes as well as a valuable research tool for studying the nature of matter.



RECEIVING CERTIFICATES — BEIP participants from Operations Division at ORNL are (l-r) James E. Walker, Operations Superintendent James A. Cox, Benjamin J. Hardin, Jessie Inman, Boss Davidson, Oscar J. Harmon, Walter C. Elkins, William R. Blocker, Curtis Gibson, Nathan B. Carr Jr., and James A. Barker, Personnel Division director. Seated (l-r) are Audrey M. Smith, Alvin L. Bradley, Othello Wilson Jr., Paul M. Nelson and J.C. Grove.



ALWAYS IMPROVING — During recent certificate ceremonies at ORNL, employees who had been engaged in year-long studies received certificates for their work. Representing the technical support program are (l-r) George Scott, Billy Fair, Bobby Ford, Paul Parker, W.G. Wilson and Plant and Equipment Director Harry Seagren. Twenty employees participated in this program. Eighteen participated in the office management program. At center, Helen Atchley, ORNL Patent Section receives certificate from G. Wilson Horde, Union Carbide Nuclear Division attorney.

At right, 48 employees participated in the Basic Education Improvement Program with these pictured receiving high school equivalency certificates. L-R, Program Coordinator Truman H. Freeman, Russell C. Owsley, Benjamin J. Hardin, Boyd F. Edgemon, Frank E. Morris, Vernon R. Bolden and Bert G. Catron, Personnel Development and Systems department head. Seated are teacher-instructors Mrs. Constance Anthony and Mrs. Rose Robbins. Sam L. Poston also participated. Fall programs will be starting soon. Contact Personnel Services.