

NUCLEAR DIVISION NEWS

UNION
CARBIDE

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

Vol. 1 — No. 10

OAK RIDGE, TENNESSEE

Thursday, June 18, 1970

Paducah Plant Set to Change To Gas Usage

The Atomic Energy Commission and the Western Kentucky Gas Company, Owensboro, have signed a contract under which the utility will supply the Paducah Gaseous Diffusion Plant with natural gas.

The cost under the agreement will be approximately \$2.25 million for the duration of the contract which extends through late 1975.

Approximately 1.1 billion cubic feet of gas will be purchased annually, beginning about October 1. The Paducah installation is in the process of converting its existing coal-fueled heating equipment to natural gas and oil-burning equipment as an anti-pollution measure.

Under normal conditions, the installation's steam plant will operate on natural gas. During extremely cold weather, or other periods of heavy gas consumption in the Paducah area, the facility's boilers will be oil-fired.

ORGD's 'Overlook' Offers New Exhibit On Toll Enrichment

The Visitor's Overlook at the Oak Ridge Gaseous Diffusion Plant has added a new exhibit on the Toll Enrichment Program for this year's tourist season.

The Overlook, located just across the highway from the gaseous diffusion plant, also offers several other improved exhibits which graphically describe the role of the atomic energy program in the defense of the nation and in providing enriched uranium for civilian nuclear power plants throughout the free world.

Open Daily

Visitors may take photographs of the plant from the Overlook, which is open from 8 a.m. to dusk, seven days a week. Parking and picnic facilities are also provided.

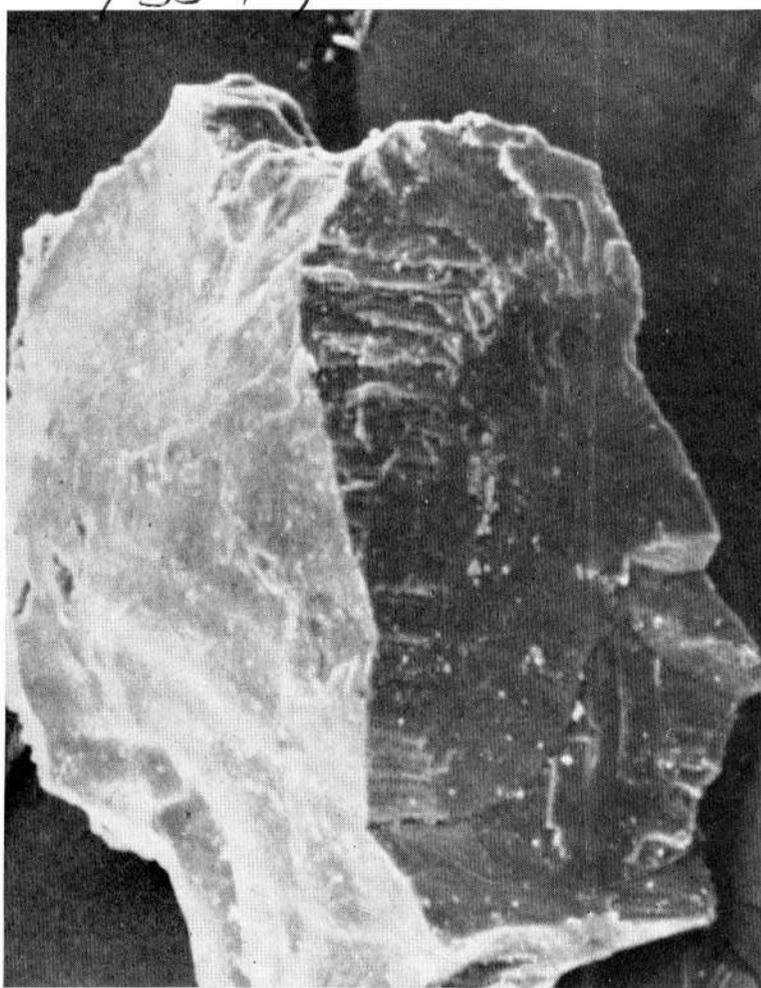
The toll enrichment exhibit includes several photographs illustrating the process through which privately-owned uranium is enriched in government plants. The customer furnishes uranium feed material to the U. S. Atomic Energy Commission, pays an enriching charge, and in return receives uranium enriched in the U-235 isotope.

Earlier this month the AEC announced that agreements had already been made to perform approximately \$1.2 billion in toll enriching services over the next 30 years. The Toll Enrichment Program was begun January 1, 1969.

(Continued on Page 6)

SAVINGS BONDS

If you are a participant in the Personal Savings Account and are investing in U.S. Government Bonds through the Savings Plan, you may be interested in knowing that the trustee does not cash the bonds as they become due. The bonds continue to earn interest even after they become due because, so far, the Government keeps extending the interest payment on them.



A 'MAN IN THE MOON'?—A speck of moon dust magnified some 700 times by a scanning electron microscope at the Oak Ridge Y-12 Plant revealed this cameo profile labelled "Man in the Moon," "Indian Chief," or even "Woman with Bonnet." The dust speck, smaller than the period at the end of this sentence, was being examined by Y-12 research chemist R. K. Bennett when he discovered the surprising resemblance to a human head. The dust specimen was obtained during the Apollo-11 mission.

New Technique Unravels Old Mystery

Neutron radiography, a key performer in the conquest of space and the harnessing of nuclear energy, has turned its probing eye on the secrets of a 2,000-year-old Chinese bronze ceremonial urn.

Neutron radiography, one of science's new techniques for seeing the insides of opaque objects or materials, is a modern complement to X ray. Its high intensity beam of neutrons penetrates solid materials like metal and bone and reveals less compact substances like rubber, plastics, nylon and many liquids which don't show up on X-ray film.

Versatile Technology

The new see-through technol-

ogy's versatility was used to examine the urn owned by the Los Angeles County Museum of Art. The urn, buried with the body of a Chinese aristocrat during the late Chou dynasty (1000 to 500 B.C.), probably contained articles valued by the deceased nobleman.

The decoratively etched vessel, 20 inches in diameter and weighing about 40 pounds, was brought to Atomics International at Canoga Park by Dr. Thomas Cairns of the museum's conservation center to learn how it was made and what materials were used in its fabrication.

Using an Atomic Energy Commission nuclear reactor as a neutron source, technicians made neutron radiographs of the urn. "We

wanted to see if neutron radiography would reveal anything exciting about the urn," said Dr. Cairns, "and it did. It showed the inner structure of the legs which we had not seen before." He explained that the legs appear to be packed with clay, along with some straw and small pieces of wood. As a matter of fact, Dr. Cairns believes the neutron radiographs show that the legs are filled with two different kinds of clay.

Nuclear Detachment

In other art applications, neutron radiography can be used as a nuclear detective to determine the authenticity of paintings.

Neutron radiography, which is also available commercially, played an important role in the Apollo space missions, examining more than 200 types of devices ranging from those used to separate the massive booster stages to those which trigger the release of re-entry parachutes. The technology is playing an increasingly important role in nondestructive testing of industrial products and equipment and inspecting fuel elements and control rods used in nuclear reactors to insure safe operation.

It is expected that in the future neutron radiography can be important as a medical diagnostic technique, and more widespread industrial applications will become routine, filling the voids now left by the limited capabilities of the X-ray technique.

Carbide Plans New Plastic Films Plant

Plans for the construction of a multimillion dollar plastic films plant in Rogers, Ark., have been announced by Birny Mason, Jr., chairman of the board of Union Carbide Corporation.

The plant will produce polyethylene film and bags for the corporation's well-known line of Glad household plastic products. Special ceremonies welcoming Union Carbide to Rogers, which is in the northwest part of the state, were held earlier this month with Governor Winthrop Rockefeller of Arkansas attending.

The new plant will be operated

by Union Carbide's Films-Packaging Division. It will employ approximately 400 people with an annual payroll of nearly \$3 million. The plant represents the fourth expansion of the corporation's plastic films capacity announced this year.

Mr. Mason stated that these expansions are necessary to meet unusually heavy demands for Glad products in both domestic and overseas markets. The Glad line is the brand leader in the household plastic wrapping materials market. Glad products are also being used widely for refuse

(Continued on Page 6)

Bundle of Borrowed Bullion Brings Big Batch of Bucks

Nearly 14,700 tons of silver that was borrowed during World War II for use in the Manhattan Project at the Oak Ridge Y-12 Plant has been returned to the U. S. Treasury.

The final shipment, delivered recently to the Treasury's Assay Office in New York City, consisted of about 69 tons valued at \$3.4 million on the current market.

At the time the Army's Manhattan Engineer District obtained the bullion from the Treasury's West Point Depository, it was worth more than \$400 million. The first shipment from West Point was made in October, 1942, just a few days before construction of the Oak Ridge facilities began.

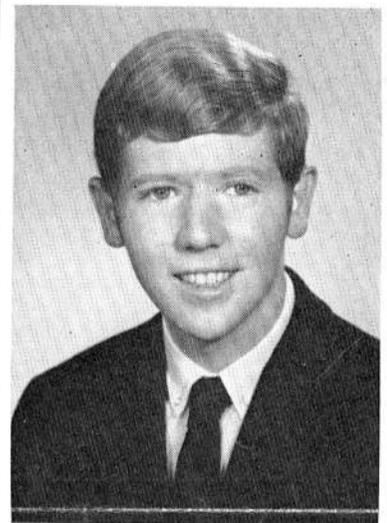
Because of its high electric conductivity, the silver was substituted for war-scarce copper in making huge magnets at the Y-12 Plant.

The magnets were used in devices called "calutrons," part of the electromagnetic process for the enrichment of uranium in the U-235 isotope.

With the advent of gaseous diffusion, a more efficient method of producing enriched uranium, the Atomic Energy Commission directed the dismantling of most of the calu-

tron units and made arrangements with the Treasury for returning the silver. The first in a series of return shipments was made in the late 1940's.

Snyder Chosen Carbide Scholar



James F. Snyder, son of Mr. and Mrs. Arthur H. Snyder, 117 Tabor Rd., Oak Ridge, has been selected to attend a Washington Congressional Workshop as a Union Carbide Scholar.

Snyder was recommended for the honor by the faculty at Oak Ridge High School. The recommendation was supported by Union Carbide Corporation's Nuclear Division.

As a recipient of the honor, the Oak Ridge High School senior will participate in a seminar from August 2-13. Participants will be housed at Mount Vernon Junior College where most of the seminar sessions will be conducted.

The program will include lectures and discussions with various representatives of government, including members of Congress.

Snyder, whose school average is 3.8, is a member of the National Honor Society, Student Council, International Relations Club and Model United Nations Program.

As a Union Carbide Scholar, the full cost of Snyder's participation in the program is being defrayed by the Corporation.

Two Firms Elect to Use New Steelmaking Process

Armco Steel Corporation and British Steel Corporation have both chosen to use a new stainless steelmaking process developed and patented by Union Carbide Corporation.

The process will be employed by British Steel at a new steel plant at the Panteg Works in Pontypool, South Wales, for the production of wide stainless steel coil and sheet. Armco will use the process at its Baltimore, Md., mill for the production of a majority of its chrome and chrome-nickel grades of stainless steel.

AEC Research

'Is Salt A Culprit?' Asks Brookhaven Lab Scientist

Dr. Lewis K. Dahl, Senior Scientist and Chief of Staff in the Research Hospital at the AEC's Brookhaven National Laboratory reports in the April issue of the Proceedings of the Society for Experimental Biology and Medicine the results of his latest work, confirming earlier findings which led him to conclude that mothers who feed their babies commercially produced baby foods may be pre-conditioning the genetically hypertension-prone baby to contract high blood pressure in later years. The culprit in commercially produced baby foods appears to be the excess sodium chloride (salt), which is an additive and is unnecessary for giving any taste satisfaction or nutritional benefit to the baby.

According to Dr. Dahl, there is no sure way to determine whether or not a baby is genetically prone to contracting high blood pressure in later life, possibly in the late teens, but more commonly in the late twenties or early thirties. However, Dr. Dahl's research with rats, which have blood pressure characteristics similar to man, show that one sure way to develop hypertension is to feed the genetically prone individuals a high salt diet. Conversely, one way to avoid the development of hypertension is to avoid foods to which an excess amount of salt has been added.

Feed Baby Food

Dr. Dahl's group first reported in 1963 that commercial baby foods had induced severe hypertension in a strain of white rats known from extensive investigations to develop the disease only if exposed to certain external environmental stresses. These rats, when fed commercial baby foods exclusively, developed hypertension, and the excess salt present seems to be the cardinal cause.

The present work confirms, extends and amplifies the earlier findings. In the currently reported experiments, 25 genetically hypertension-prone rats were fed an exclusive diet of commercial baby foods bought in several local food markets. All 25 developed significant hypertension, ranging from 180 to 240 millimeters of mercury (mm Hg) at from three to eight months following the start of the baby food diet. Of these, 12 died.

In contrast, 15 control rats

from the same genetically hypertensive strain were fed a low-salt diet and all remained alive and well, with blood pressure that ranged from slightly over 100 to 160 mm Hg, (average of 141 mm Hg) after eight months. The threshold of high blood pressure for man is around 140 mm Hg.

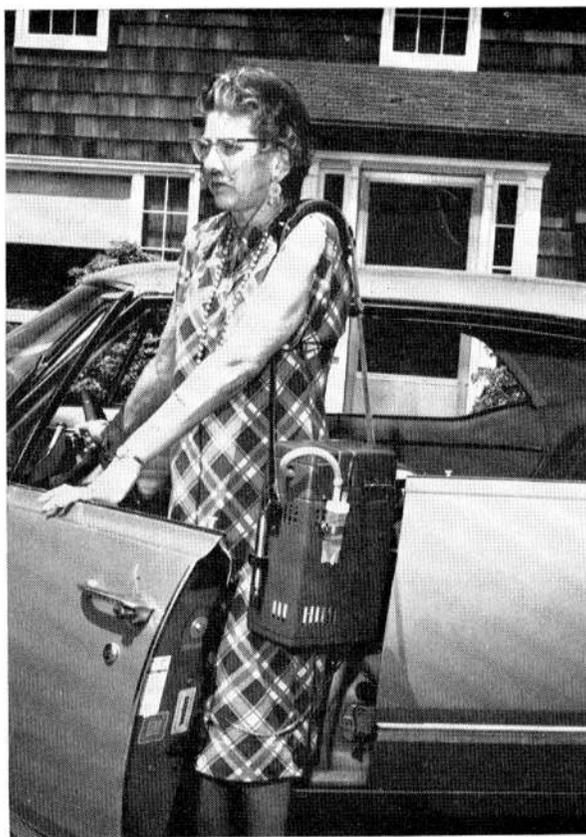
Do Not Add Salt

The authors stress that the fatal hypertension which can be induced in these rats by baby foods is a significant finding relevant to the rearing of American children. The probability is high that the noxious agent in the baby foods is the excess salt added during the manufacture of these foods. Table salt is in the GRAS (Generally Regarded As Safe) list of chemicals in the Federal Drug Administration (FDA) list and no license is necessary for its addition to baby foods.

The most plausible reason for the addition of salt is that the mother tastes the food and if the taste is flat (no salt), she rejects it. The baby, in any event, will have had no choice in the matter. Human milk, on which untold generations of infants have been reared, is a low salt food. Natural foods of all kinds, according to Dr. Dahl, have low salt contents but have more than enough to satisfy the body's daily requirement. He feels, therefore, that food processors should be encouraged to make, and mothers urged to feed their babies, foods without added salt.

The importance of these experiments is two-fold: first, they identify a factor which in the rearing of children may make the difference between health and serious disease in later life for the genetically hypertension-prone person. Second, they indicate that even if one is born with a genetic propensity for hypertension, there exist environmental factors which, if avoided, may prevent or at least decrease and delay the emergence of the disease. This is a very hopeful situation because one cannot choose one's ancestors, but one can always control environmental factors after they have become identified.

The medical team which conducted this research was headed by Dr. Lewis K. Dahl and included medical technicians Martha Heine, George Leidl and Lorraine Tassinari.



EASY TO USE—Filling the Oxygen Walker (right photo) takes just three minutes. The Walker is turned upside down and connects to the mouth of the Reservoir. Once the lever is depressed, the fill process becomes automatic; the system shuts off when the Walker is full. Patients (left photo) using the device can do normal chores such as driving a car with no problem. The Walker is placed on the seat next to the patient or on the floor, and secured with a special belt.

Treatment for Emphysema

Carbide Develops Portable Oxygen Unit

A major breakthrough in the treatment of patients suffering from, and often bedridden with, emphysema and other chronic respiratory diseases has been announced by Union Carbide Corporation. An easy-to-carry liquid oxygen unit, part of the Linde Oxygen Walker System, permits many patients to return to all or much of their daily activities, increases their longevity, and offers sizeable economies as compared with in-hospital therapy.

After several years of testing, Union Carbide is now taking steps to make the Oxygen Walker available nationwide. This novel system for oxygen therapy, which can be obtained only by a doctor's prescription, is currently available at over 40 locations, including many of the major metropolitan areas in the United States.

Cites Value of System

In pointing up the importance of this development, William S. Gray, Jr., executive vice-president of Union Carbide's Linde Division, said, "The need for such

a system becomes all too apparent when you consider that chronic respiratory diseases, such as emphysema and chronic bronchitis, constitute the fastest rising cause of death in this country. The Oxygen Walker helps alleviate the disability of such diseases and may reverse many secondary complications.

"Recognition by Medicare in 1967 and continued acceptance by doctors and their patients in clinical tests and in extended treatment situations led to our decision to make the Oxygen Walker available nationally."

Some Can Work Again

For the first time, patients who require continuous oxygen therapy can truly be up and about for prolonged periods. Under conventional methods, the patient with an advanced case of emphysema is restricted to the immediate vicinity of his stationary oxygen supply. Since the Oxygen Walker patient carries his treatment with him, many are able to assume such activities as household chores and recreational interests and some patients are even able to return to work.

Dr. Thomas L. Petty, associate professor of medicine and director of the respiratory care unit at the University of Colorado Medical Center stated, "Patient education, good bronchial hygiene, breathing training, and graded exercises constitute the now generally practiced rehabilitation program. The Linde Oxygen Walker System provides a new dimension of activity for respiratory cripples.

"Representatives of the patients treated at Colorado Medical Center is one who led a bed-to-chair existence and had been hospitalized for two months. After ten months of therapy with the Oxygen Walker, the patient had achieved full independence and was able to climb 80 stairs with the help of the system."

Economics a Factor

Treatment with the Linde oxygen system offers another significant benefit — considerable sav-

ing over hospital oxygen therapy. For example, bedridden patients who are treated in the hospitals with conventional methods of oxygen therapy average monthly bills of about \$2,100. With the Linde portable system, it is not uncommon for these same patients to become out-patients and return to useful lives at less than one-tenth the cost.

The use of liquid oxygen is the key to the system's portability. The Oxygen Walker's supply of 0.6 liter of liquid oxygen is equivalent to 550 liters of gaseous oxygen, which can provide relief in typical cases for four hours when inhaled continuously and up to several days when inhaled intermittently. As oxygen is required, a built-in vaporizer instantaneously converts the liquid oxygen to gas.

Consists of Two Parts

The oxygen therapy system consists of two parts: The "Walker" and the "Reservoir." The Walker, a small, lightweight unit, is worn suspended from the patient's shoulder — much like a camera carrying case. Oxygen is supplied from the Walker to the patient through a clear polyethylene tube. The Reservoir is a liquid oxygen storage unit that remains in the patient's home for refilling the Walker and for supplying gaseous oxygen when the patient does not have to be ambulatory or during sleep if prescribed by his doctor.

The system can be leased through a Linde authorized distribution organization, which is responsible for maintaining an oxygen supply in the patient's home and for servicing the Oxygen Walker. The organization's personnel has also been specially trained to instruct patients in the proper use of the system. In an effort to extend the availability of the Walker, Union Carbide is accelerating its efforts to select and train new representatives. It is expected that these efforts will result in doubling the number of locations where the Walker is available by the end of 1970.

Paducah 3883 7



READY TO LEARN—Drafting trainees in the Functional Industrial Training (FIT) Program at Paducah, Ky., listen intently to Training Director Hugh Vantreese, at left, during an orientation which preceded the first class sessions last month. FIT is being conducted by the Paducah Gaseous Diffusion Plant in cooperation with Federal, Kentucky State, and area educational resources. Similar to the Training and Technology Program, FIT's basic idea is to recruit, train, and help to find employment within area industry for disadvantaged individuals in the Paducah area. The Paducah Plant's Bill Penry is Program Director.

Off-the-Job Accidents Still Target For Y-12 Safety Department in June

Last year, some 1,614 boaters were arrested in Tennessee for violating the state's boating safety law. More than half of these arrests were concerned with the lack of and the use of life preserver equipment.

A current quiz shows that hardly any employee in Y-12 keeps his auto in 'track' condition, ready for vacation on a moment's notice. During the month before you take that long-awaited vacation, plan some time to give your car the attention it needs to withstand the vigor of highway driving on that long vacation. The Safety Department has an excellent checklist of what to do before taking that vehicle off to the beach or the mountains.

A recent publication in the Safety Office reveals a new menace to the vacationing employee, the motel swimming pool. Needless drownings occur each year, particularly in the age bracket under 12 because some parent did not keep proper supervision over those toddlers playing either in or near the motel pool.

This particular season brings about an unusual number of requests for information on bites... insects, snakes and what-have-you. Snakes are more afraid of people than vice versa, says the Safety Department... a point that can be argued in some quarters. Actually, more people die in this country from bee-stings than from snake bites, Safety points out. Usually the first encounter with an allergic sting is not fatal, says Safety; but the second can be. Avoid being stung if possible, they say. If stung, get medical attention at once if you are allergic to stings.

Auto safety is a constant topic among safety-minded Y-12ers. During the entire month of June, OTJ (or off-the-job) accidents are the target for the Safety Department's educational efforts. An excellent film—"There's No Place Like Home—For an Accident," is being shown throughout the plant at safety meetings.

An average of 6,800 people drown annually in the United States, warns the National Safety Council, many needlessly. The

Red Cross says first of all, learn to swim; then swim intelligently... always with a "buddy." With water in every direction in this area (there are about five huge lakes within an hour or two drive from here) it is of particular importance that water safety gets a huge share of our attention. Hardly any employee in the plant doesn't swim, ski, fish, or just plain boat ride during the summer months. It's as natural as breathing the Tennessee air!

Y-12ers lost some 9,402 days in off-the-job disabling injuries last year alone! And it isn't the time off, or the money lost that causes the most difficulty; it's the pain of injury, the mental anguish of worry and the nagging fear of our own safety that really make the price of an accident very high.

The Safety Department says call them if you want to schedule the film... Their number is 3-7741.

Meanwhile, watch those thousand "natural shocks that flesh is heir to." Watch those household dangers that lurk in the workshop, in the kitchen, in the lawn, at the beach, or park, on the highway, or in that easy chair in the shade. Sometimes danger lurks where it is least expected.

And an injury that isn't your fault hurts just as bad as those that are!

Hunting-Fishing Tags Are On Sale in Tennessee

Some 1,200 stations across the state have received the 1970-71 Hunting and Fishing licenses from the Tennessee Game and Fish Commission. These agents are authorized to sell these licenses immediately... which means a sportsman may buy a license to be effective immediately which will not expire until June 30, 1971, for 13 months of hunting and fishing.

The fee is the same \$5 for both hunting and fishing. Prices of special licenses, permits and big game stamps also remain unchanged.

This year's license is the same color as last year's.



Early summer finds more Y-12ers crossing important landmarks with Union Carbide Corporation. Congratulations.

25 YEARS

John L. Waters, Engineering Division, June 18.

Helen L. Hicks, Production Assay, June 20.

Harley R. Johnson, 9212 Rolling Department, June 22.

Mary K. Mattingly, Production Assay, June 26.

Adam J. Lewand, Process Maintenance, June 28.

Charles F. Blaha, Alpha Five Processing, June 30.

20 Years

Gerald W. Lankford, Product Engineering, June 18.

Richard M. Chapman, General Machine Shop, June 19.

Lamon B. Keith, General Machine Shop, June 19.

Willie B. Kirk, Jr., Buildings, Grounds and Maintenance Shops, June 19.

Billy L. Miller, Alpha Five East Shop, June 20.

Charles A. Blake, Jr., General Industrial Relations Administration, June 20.

Idus D. Conner, Criticality Studies, June 20.

Daniel C. Lasley, Salvage Department, June 22.

William D. Newman, Jr., General Can Fabrication Shop, June 22.

Hugh D. Campbell, General Shop Job Liaison, June 22.

Wilbur K. Martin, Beta Two Forming, June 23.

Frank J. Blair, Area Five Maintenance, June 26.

Donald E. Lane, Electrical and Electronics, June 26.

James W. Howard, Process Maintenance, June 28.

Andrew C. Hutchins, Civil and Architectural Engineering, June 20.

15 Years

Ray F. Wilson, Beta Four Heavy Machine Shop, June 18.

David H. Stephens, Jr., Dimensional Inspection, June 18.

Donald Branson, General Machine Shop, June 18.

Harry L. Hunter, Machine Maintenance, June 24.

10 YEARS

Frank G. Jinks, Dispatching Department, June 20.

Paul W. Turner, Metallurgical Development, June 20.

W. R. Burrell, A-2 Shops, 9212, June 20.

Hubert C. Boyd, Research Services, June 25.

James D. Griffin, General Metal Fabrication Shop, June 27.

Badge Exchange Begins New Quarter for Y-12

The Badge and Pass Office in Y-12 advises that new quarterly badges go up in the self-service racks on the day shift Wednesday week, July 1. The summer badges will be solid blue, in contrast to the yellow-bottomed badges now in effect.

The old Spring quarter badges will be honored until midnight July 15. After then, employees will have to exchange their badges at the guard post nearest their "home rack."



NEW LIGHTWEIGHT DURABLE MATERIAL—A new and improved thermal insulation material has been developed in Y-12 for aerospace applications. A. W. Maxey, one of the material's developers, holds a sample of the fabric processed from a dilute water slurry containing silica fibers and starch.

Improved Thermal Material For Aerospace Applications

A new and improved thermal insulation material for aerospace applications has been developed at Y-12.

The material, named Palarite, is composed of carbon-bonded silica fibers. It is lightweight, easily machined to close tolerances and maintains structural and dimensional integrity under high temperature, shock and vibration.

The fabrication process entails vacuum forming, from a dilute water slurry containing silica fibers and starch, a fibrous molding on a mandrel of the desired shape. The molding then is processed through a curing, drying

and furnace-heating operation to obtain a rigid carbon-bonded fibrous structure. Palarite can be prepared in densities from seven to 30 pounds per cubic foot by varying the process techniques.

The Palarite process was invited by C. D. Reynolds, Z. L. Ardary and A. W. Maxey of Materials Engineering Department in support of the U.S. Atomic Energy Commission programs.

Details of the Palarite fabrication process are contained in the Y-12 report, Y-1716, "Palarite Thermal Insulation," which soon will be available from the U. S. Clearinghouse for Federal Scientific and Technical Information, National Bureau of Standards, U. S. Department of Commerce, Springfield, Va., 22151.

Y-12 Paper Scheduled For Nuclear Society

An Oak Ridge Y-12 Plant physicist will present a technical paper at the annual meeting of the American Nuclear Society in Los Angeles, Calif., June 28-July 2.

Mrs. Elizabeth B. Johnson's paper is entitled "Criticality of Uranium (3.85) Rods and Cylindrical Annuli in Water."

The report describes experimental work involving partially enriched uranium fuel rods performed at the Y-12 Plant's Criticality Experiments Facility in support of U.S. Atomic Energy Commission programs.



Riders wanted from Deane Hill, Kingston Woods, West Hills sections, Knoxville, to any portal, straight day. Jim George, plant phone 3-7277, home phone Knoxville 588-6474.

Ride wanted from Sutherland Avenue, UT Apartments section, Knoxville, to Central Portal, straight day. Roger Schad, home phone Knoxville 584-0409.

Ride wanted from 2780 Oak Ridge Turnpike, Oak Ridge, to North Portal, straight day. Norman Branch, plant phone 3-7907.



ANOTHER PATENT APPLICATION—Harry C. Francke, Materials Engineering Development, is notified of another patent application filed in the U. S. Patent Office. His patent, 'Improved Method for Hydriding Uranium Alloy,' brought him the customary Dollar Letter. It is presented above by George Marrow, superintendent of the department.

Bowling Association Tags Roy Roberts, Y-12 Retiree, Ridge Bowler of the Year



'Bowler-of-the-Year'

Bowling in Oak Ridge owes a lot to its "1970 Bowler of the Year!" In fact, almost any sport going owes a lot to Roy Roberts, retired Y-12er. For Roy is always in there giving healthy recreation a boost, whether it be as a spectator or a participant. That's how he keeps his youthful figure, he'll tell you.

The Oak Ridge Bowling Association named Roy man of the year after almost 50 years of activities on the lanes. It all started back in Centralia, Mo., Roy's home town, when he threw his first strike . . . and he's been at it ever since.

Softball Manager

Coming to Oak Ridge back in the war years, Roy immediately took up his foot-work on the hardwood lanes here (or just as soon as the old Jefferson Lanes were constructed). He refused an office in the founding ORBA because he was on shift work at the time. But he hasn't shirked being their "good right arm" since then, according to Y-12er Bill Ladd, current president of ORBA.

The Y-12 retiree managed a softball team for 20 years, and was himself a semi-pro baseball player back in his youth. He knows more averages, more records, more statistics about baseball than almost anybody else, too.

League Secretary

Last year alone Roy served as secretary of two Y-12 bowling leagues . . . the C League, and the Classic League. Retiring in October didn't slow him down one whit. He bowled on the Has Beens team in the Classic; and they took the crown as champs of the big 16-team league. Roy has been secretary of the Classic League for a good many years, and has been a director of ORBA for the past 10 years.

The affable Y-12er has bowled in seven American Bowling Congress Tournaments through the years, and has rolled in all major tournaments staged in the Southeast.

They tell the story a few years back that Bowler Roberts injured his finger in a sawmill accident, but bowled that night anyway. He rolled a 255 game . . . a 676 series . . . good for a man without an injured finger!

Career Highlights

Roy has been a winner in the Invitational Tournament locally, posting scores of 265-694. He won both scratch and handicap game series, but could win only two events according to the tournament rules.

The highlight of his career came a couple of seasons back when he rolled a 277 high game, a 689 high series.

He's still aiming at that 300 perfect game, and his legion of friends both inside and outside the bowling alleys, are betting he will make it one fine day!

Roy and his wife Dorothy live at 112 Dixie Lane, Oak Ridge. They have three married daughters.

1944 Everett Graduates Set Reunion For July 11

If there are any Y-12ers who graduated from Everett High School over in Blount County in 1944 . . . here's news of interest. There will be a reunion July 11, at Green Meadow Country Club, Maryville.

Dress is informal. You may make reservations through Mrs. Heloise (Archer) Jones, 801 Hilltop Dr. Everett Heights, Maryville . . . telephone number 982-6104.

7 Y-12ers Retire Tuesday, June 30



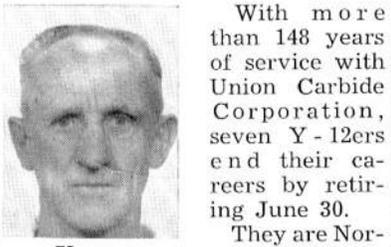
Abbott Garland



Mrs. Faith King



King Roberts



Vann

With more than 148 years of service with Union Carbide Corporation, seven Y-12ers end their careers by retiring June 30.

They are Norman C. Abbott, General Expediting and Auxiliary Services; Lena W. Faith, Chemical Services; Jack W. Garland, Stores Department; Ernest L. King, General Metal Fabrication Shop; Dayton H. Patterson, Guard Department; Edmond Roberts, Process Maintenance; and Ernest G. Vann, General Field Shops.

Best wishes to the plant's June retirees.

Gallman - White Squeak Out Slim Link Lead

R. Gallman and J. D. White hold a scant lead in the South Hills Golf League after three weeks of play. They still sport a clean slate after felling Oakswood-Smith last week.

J. N. Loupe sported a 39 last week . . . F. K. Clabough a 40 the week before that for individual honors.

Gresham-Bell led team scorers both weeks with 86 and 93 respectively.

Team	W	L
White-Gallman	18	0
Ellis-Riding	16	2
Collins-Parker	15	3
Loupe-Phillips	15	3
Sewell-Loveless	12	6
Gresham-Bell	11	7
Sise-Sise	9	9
Joest-Pappas	7	11
Oakwood-Smith	3	15
Jones-Cogswell	2	16
Huber-Parker	0	18
Cabe-Jones	0	18

Southwest Point Golf League Is Teed-Off!

Two belting wins opened the eight-team Southwest Point Golf League in Kingston last week.

Jones - Morgan downed Plemmons-Roberts and Bolt-Pelfrey took Briscoe-Williams apart on the greens.

Team	W	L
Jones-Morgan	6	0
Bolt-Pelfrey	6	0
Henderson-Stanton	5	1
Mee-Wright	4	2
Stark-Wilkey	2	4
Boyd-Bush	1	5
Plemmons-Roberts	0	6
Briscoe-Williams	0	6

Recreation



Monday, June 22
29

SOFTBALL LEAGUE: 6:15, 7:30, 8:45 p.m. Pinewood Field.

Tuesday, June 23
30

GOLF: Melton Hill League, after work.

GOLF: South Hills League, after work.

SOFTBALL LEAGUE: 6:15, 7:30, 8:45 p.m. Pinewood Field.

PISTOL LEAGUE: 6 p.m. Oak Ridge Sportsmen's Association.

Thursday, June 24
July 2

SOFTBALL LEAGUE: 6:15, 7:30, 8:45 p.m. Pinewood Field.

GOLF: Southwest Point League, after work.

Saturday, June 25

GOLF: Southwest Point Golf Tournament, 7 a.m. Kingston, Tenn.

Y-12ers Take High Skeets Shots for May

Three Y-12 riflemen paced the May Skeetshooters, as Carl Brewster, Charley Asmanes and Tommy Webber fired 48,511, 47,774, and 47,706 respectively.

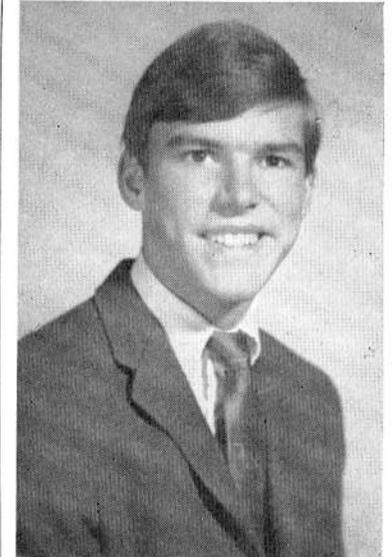
June's meet was scheduled for last Sunday, June 14, and next month's will be held at 1 p.m., July 19. All newcomers are welcomed at the skeet matches, and handicap scores are counted. Penalties are warranted to winners so they cannot repeat on the next firing.

May's scoring was:

Firer	H'Cap Score
B. Etheredge, Y-12	46,440
B. Powers, Y-12	48,337*
W. Davy Jr., ORNL	47,388
B. Weathersby, Y-12	45,919
R. Allstun, Y-12	46,375
P. Bullard, Y-12	47,469
V. Raaen, ORGDP	44,954
C. Asmanes, Y-12	47,774
L. Bray, Y-12	49,377*
J. Comolander, Y-12	47,827
C. Brewster, Y-12	48,511
T. Webber, Y-12	47,706

*Under Penalty. Previous winner.

Foster Son Gleans High Acting Honor



Ernest Foster

A Y-12 son recently received an "Oscar" at Maryville College, where he was tabbed best actor of the year. Ernest Foster, son of E. M. Foster, Materials Engineering Development, earned the title for his portrayal of the character Will Shakespeare in "A Cry of Players."

Young Foster appeared last summer in the Hunter Hills production of "Dark of the Moon" and "Li'l Abner." He previously appeared in high school productions at South High.

He studies liberal arts at Maryville, and hopes to teach when he graduates.

The Fosters live at 828 Tipton Street, Knoxville.

JAMES A. YOUNG Editor



OFFICE
Post Office Box Y
Oak Ridge, Tenn. 37830
Telephone 3-7100 or 3-5345

Greter Engineering Dies Here Tuesday

The Instrument Engineering Department sadly marks the death of William J. Greter Tuesday, June 9.

A native of Charleston, W. Va., Mr. Greter had worked at all three of the Oak Ridge installations, first coming to the Oak Ridge Gaseous Diffusion Plant, then the Oak Ridge National Laboratory, and transferring to Y-12 more than two years ago. He attended Virginia Polytechnic Institute.

An elder at the First United Presbyterian Church, Mr. Greter was also a Mason, and a member of the Model Railroad Club. He was a stamp collector and an ardent bowler.

Survivors include his wife, Mrs. Wanda D. Greter, at home at 506 New York Avenue, Oak Ridge; daughter Mrs. B. J. Howell, Powell; son Richard C. Greter, Oak Ridge; and four grandchildren.

Funeral services were held Thursday, June 11 at the Weatherford Mortuary with the Reverend John Minear officiating. Interment followed in the Oak Ridge Memorial Park.

Fellow workers extend their deepest sympathy to the Greter family.

Brown-Rowland Grab Melton Hill Top Berth

Joe Pryson scored a low 35 at Melton Hill Golf League's June 2 firings, and his teammate Carl Dorr paired with him to turn in the low dual score card of 64 of the week.

The team of Grubb and Braden were undefeated after two weeks of play.

Last week featured the team of Brown-Rowland moving into first place in the league downing Wetzel-Hatmaker for the full count. Benny Crass led the field with a 34 and Steve Babb carded a 33 handicap tally. Carl Dorr finished strong with birdies on the last three holes!

League standings follow:

Team	W	L
Brown-Rowland	16	2
Reed-J. Sherrod	15	3
Dorr-Alvey	13	5
Grubb-Braden	12	6
Crass-Green	12	6
Buxton-Crowder	10	8
Nixdorf-Fox	9	9
Waldrop-S. Babb	8	10
Wetzel-Hatmaker	7	11
Baker-Emery	7	11
W. Sherrod-Wyrick	6	12
Lovett-Lawhorn	6	12
Riggs-McElroy	5	13
R. Thomason-D. Thomason	1	17

Eloquence is a painting of the thoughts.



WELL-KNOWN SECRETARY RETIRES—Nell Parks, Classification and Information Division, receives her retirement plaque above from George Mitchel. Mrs. Parks, well-known secretary in Y-12, retired with more than 26 years company service with Union Carbide. Friends in the plant gave her a retirement dinner at the Alexander Motor Inn recently.

THE CARBIDE COURIER

Thursday, June 18, 1970

Page 3

'Fill Er Up' at 300 mph Says Sumpter On Air National Guard Mile-High Duty

How about having your fuel tank filled while your vehicle is traveling over 300 miles an hour? That's what John Sumpter was doing recently over Western Europe — filling the fuel tanks of U. S. Air Force jet fighters. Sumpter is a member of the 134th Air Refueling Group of the Air National Guard based at McGhee Tyson Air Base.

Sumpter is a boom operator. The jet fighter pulls up below the tail of a KC97L tanker plane so a boom can be lowered to connect with the input opening of the jet fighter. The boom operator, in contact with his own crew and that of the plane he is refueling, is in the tail of the tanker, flat on his stomach on a foam rubber pad, much like a tail gunner. He operates the numerous controls which regulate the flow of the fuel and the movement of the boom to accomplish the connection between the planes while in flight.

In addition to the boom operator, each tanker plane must have a minimum crew of a pilot, who is usually the plane commander, the co-pilot, a navigator and an engineer, all of whom work in the large cockpit in the

nose of the plane.

Why is the Air National Guard refueling Air Force jet fighters? This project was designed to relieve regular Air Force tankers for duty in Southeast Asia during the past several years. The 134th Air Refueling Group alternates with units from other parts of the country in the project known as Operation Creek Party. The Atlantic Ocean is the "creek."

Operation Creek Party is based at Rhein-Main Air Base near Frankfurt, Germany. Six tanker planes are always based at Creek Party. The tankers have four of the largest reciprocal engines made, each producing 3,500 horsepower. Two jet engines, each producing 5,500 horsepower, have been added to the basic C97 cargo plane to give the tanker its speed. Each tanker weighs about 175,000 pounds on takeoff when loaded to capacity with 12,000 gallons of fuel.

Why do jet fighters refuel in the air? Refueling is desirable for several reasons. One is that a jet consumes much larger amounts of fuel in taking off at low altitudes. By necessity a fighter must be smaller, limiting its fuel capacity to maintain its high speed. Thus the air refueling makes it possible to greatly extend the range of the jet fighter and reduce the number of more costly jet facilities needed for high-speed landings. Normally, one tanker can refuel several fighters on each mission.

Sumpter is an instrument mechanic in the Isotopic Analysis Department, Laboratory Division. He has been with Carbide since September, 1951, coming from Wright Patterson Air Force Base at Dayton, Ohio. He has been in the Air National Guard for more than 10 years.

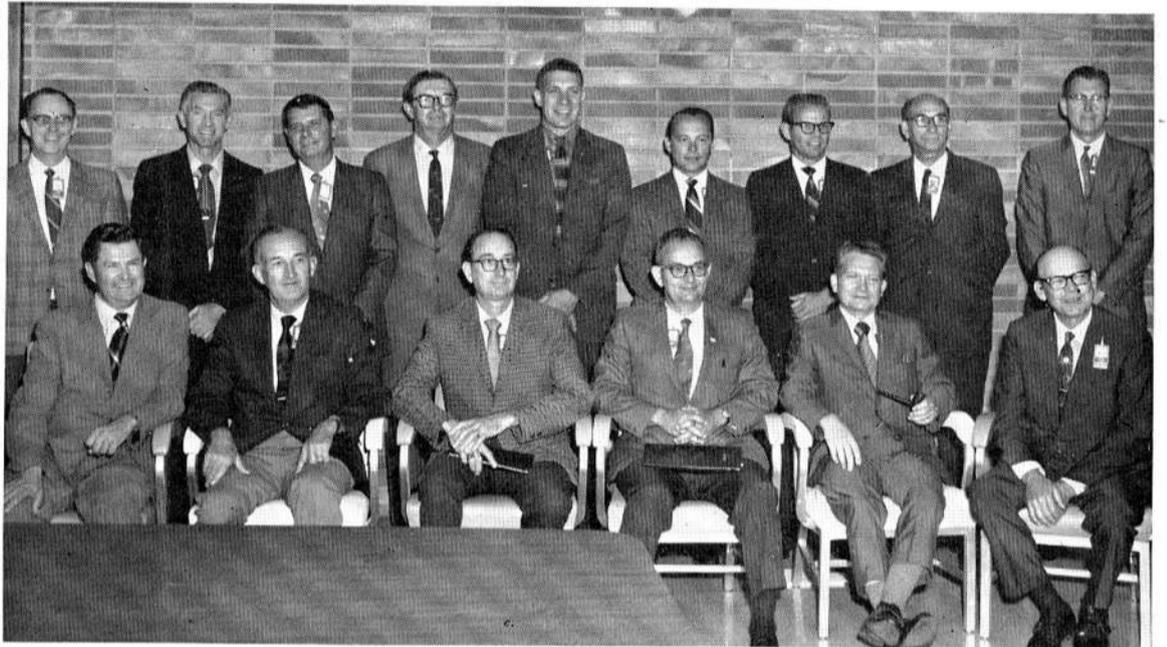
Sumpter, a native of Cumberland, Ky., attended Union College in Barbourville, Ky. He is married to the former Edith Woods of Maryville. The Sumpters have four children: Sherrod, 15; Janet, 13; Dena, 12; and Lisa, 10. They reside on Scenic Drive, Route 5, Maryville.



BOOM VIEW—A boom operator's view of an F-4 Phantom jet during fueling operations. The jet is traveling some three miles high at a speed in excess of 300 miles per hour at the time of the operation!



BOOM OPERATOR—Shown is the normal position of the boom operator during refueling operations, lying flat on his stomach. Also the myriad controls and instruments required for the operation are seen.



PARTICIPATE IN TRAINING MEET—A Nuclear Division training meeting held recently included the participants, front row, from left, G. W. Patterson, UCC Canada Limited; J. M. Ball, General Industrial Relations; L. L. Anthony, Computing Technology Center; H. G. P. Snyder, Y-12 Industrial Relations; R. J. Betts, K-25 Industrial Relations; and P. C. Fourney, General Industrial Relations. Second row: C. A. Blake, General Industrial Relations; W. S. Akers, Jr., Y-12 Industrial Relations; G. K. Bryant, Paducah Industrial Relations; J. M. Bender, K-25 Industrial Relations; M. E. Koons, assistant to the UCC-ND president; T. E. Cressler, K-25 Industrial Relations; J. C. Barton, K-25 Laboratory Division; and B. G. Catron, ORNL Personnel.

ANS Papers

N. M. Greene, F. R. Mynatt, and G. E. Whitesides will present papers at the summer meeting of the American Nuclear Society which starts on June 29 in Los Angeles, Calif. All three are employed in the Scientific Applications Department, Computing Technology Center.

Greene

The title of Greene's paper is "A Calculational Sensitivity Study for a Selected LMFBR Using Sn Theory." W. R. Cobb, also of CTC, is a co-author of the paper.

Greene has been employed by Carbide since June, 1964. He is a native of Sneedville, Tenn., and received B.S. and M.S. degrees in nuclear engineering from UT. Greene, his wife Dorothy, and a son live at 605 Bridgewater Road, Knoxville.

Mynatt

The title of Mynatt's paper is "Neutron Transport in Iron." He has been employed here since March, 1965. A native of Knoxville, he received his Ph.D. in nuclear engineering from UT in March, 1969. Before coming with Carbide, he was the recipient of an ABC fellowship award while working at Oak Ridge Associated Universities.

Mynatt is married to the former Carolyn Grace Hutson. They have two children and reside at 609 Meadcrest Drive, Knoxville.

Whitesides

The title for Whitesides' paper is "The Monte Carlo Method as Applied to Nuclear Criticality Safety Calculations." He received a B.S. in nuclear engineering from North Carolina State University and has been employed here since February, 1960.

Whitesides is a native of Lincolnton, N. C. He is married to the former Linda Joan Dellinger and they have one daughter. They live at 101 Brandon Dr., Kingston.

Nuclear Division Training Meeting Features Corporate Representatives

The annual four-plant training meeting of the Nuclear Division, was held at ORGDP on June 3.

Highlights of the meeting were the presentation by Gordon W.

Patterson, UCC Canada Limited, on a recently installed management development program, and a detailed report by W. R. Marshall, UCC Industrial Relations Department, on what is going on in and around the Corporation in training and development areas.

The meeting was open to all personnel involved in training and development activities at each facility. The morning sessions centered around a prepared agenda, while the afternoon was devoted to round-robin discussions of training and development problems of mutual interest.

Lab Notes



Capt. William C. Kimmerly

William C. Kimmerly, son of Mr. and Mrs. E. Y. Kimmerly, has been promoted to captain in the U. S. Air Force.

Captain Kimmerly is a computer systems programming officer at Luke Air Force Base, Arizona. He is assigned to the 26th Air Division, a unit of the Aerospace Defense Command.

Kimmerly is a 1961 graduate of Oliver Springs High School. He earned his B. S. degree in business administration in 1966 at The University of Tennessee and was commissioned in 1967 through the Officer Training School, Lackland Air Force Base, Texas.

Tennis, Anyone?

How many K-25ers are interested in participating in a tennis tournament starting about mid-July? This could be a very informal arrangement with each round of matches to be played within one week at an agreeable time to the participants. The duration of the tournament would depend on the number of entries.

Charley Frye has volunteered to be the tournament director if there are enough entrees to make an interesting tournament. The Recreation Department will award trophies.

Employees interested in participating in a tennis tournament should notify the Recreation Department, K-1002, telephone 3-3097, giving their name and their plant telephone number. Entries should be received by Tuesday, June 30.

THE CARBIDE COURIER

Published Biweekly
Editor H. J. Mayberry
K-1002 Building, Tel. 3-3097

These Employees Reach 25 Years Service This Month



10 Years' Service

T. L. Morton	6/1/60
C. E. Weaver	6/6/60
J. W. Day	6/6/60
J. C. Bailey	6/20/60
D. B. Long	6/22/60
E. C. Cannon	6/23/60
E. C. Edwards	6/27/60
J. H. Owings	6/27/60

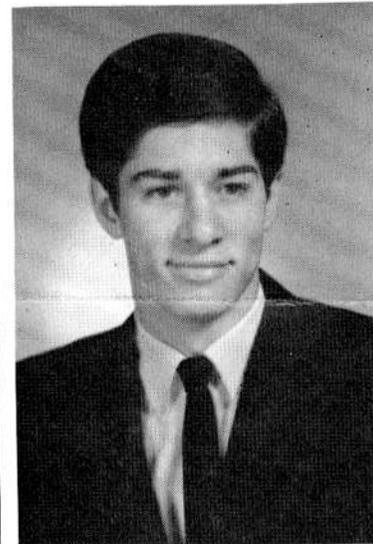
20 Years' Service

J. B. Wilhoit	6/5/50
R. R. Wright	6/14/50

15 Years' Service

G. W. Burgess	6/6/55
R. L. Smitherman	6/13/55
J. D. Simmons	6/14/55
W. T. McCarley	6/15/55

Leadership Award Given To Chapman



Bruce Chapman

Bruce Chapman, son of W. C. Chapman, Operations Division, was recently awarded the Sons of the American Revolution Medal in special ceremonies at The University of Tennessee. He was presented the medal for "demonstrated outstanding leadership qualities, military bearing and all-around excellence in the Air Force ROTC program studies and activities at UT." He was also awarded a three year Air Force ROTC scholarship.

The letter announcing the presentation, to Mr. and Mrs. Chapman, said in part: "I take this medium to inform you of the award, and to tell you we are very proud of Bruce, and to invite you to the ceremony. In this time of crisis on the campus, it is heartening to see and work with young people who are more interested in building our society than in tearing it apart."

Chapman is a 1969 graduate of Roane County High School in Kingston.



Ride wanted from Elm Grove area in Oak Ridge to K-1007, 7:45 to 4:15. Mildred Clark; plant phone 3-3459, home, 482-1272.

Two K-25 Veterans Retire This Month



Harrell Potts

H. C. Harrell and C. L. Potts will retire on July 1, 1970. Harrell observes his 65th birthday this month and Potts has elected early retirement.

Harrell

Harrell has been employed as a carpenter in the Buildings and Grounds Department since November, 1950. Prior to his employment with Carbide, he worked for various construction firms including J. A. Jones, the contracting construction company for building the K-25 plant.

Harrell is a native of Maynardville, Tenn., and attended public schools in Anderson County. He is married to the former Louise Graham and they have two children: Wilma Jean works for the Anderson County Road Department; and Hershel works at the Ford plant in Kansas City, Mo.

Retirement plans for Harrell include working around his home, traveling, and spending time with his grandchildren. Harrell says that he has enjoyed working for Carbide and has met a lot of interesting people.

The Harrells live on Route 4, Clinton.

Potts

Potts has been a development operator in the Gaseous Diffusion Development Division, having been employed since February, 1946. Before coming with Carbide, he worked for the Hercules Powder Company at Tyner, Tenn.

Potts was born in Hixon, Tenn., and attended public schools in Chattanooga. He is married to the former Labell Lane and they have three children: Loretta, who worked at K-25 in the Payroll Department for 10 years; Charlene who is in the Key punch Department; and Debbie, who graduated from Oak Ridge High School this year.

Potts served as Governor of the Oak Ridge Moose Lodge for three years and as President of the Tennessee Moose Association in 1963. He holds the Philgrim degree, the highest degree in the Moose Fraternity.

Boatwright Bests Field of K-25ers On Challenging Gatlinburg Greens

Alvin Boatwright shot a 76 on the challenging Gatlinburg course to win medalist honors in the plant's second golf tourney of the season. He was only eleven inches from the cup on the No. 8 hole-in-one green, birdied the par 5 ninth hole and eagled the par 5 tenth hole. John Boggs had the best handicap score in the first division with a net 74.

Cliff Nunley won second division scratch honors with a 91. A. J. Kessing and J. B. Wilhoit shared handicap laurels, both having 78s.

Bob Orrison had the best



EAGLE SCOUT—Tommy Bowers, son of Francis Bowers, Chemical and Technical Maintenance Department, was recently awarded this coveted rank by Oak Ridge Troop 129. Tommy is also a member of Order of the Arrow. He is a sophomore at Oliver Springs High School and is active in church work at Orchard View Baptist Church.

clude moving to Altona, Fla., where he will spend his time on gardening and a small orange grove. He also plans to do plenty of fishing, hunting, and just resting.

Potts says, "I have really enjoyed working at K-25 for 24½ years. The men I have worked with are the nicest people you could ever hope to meet. I hate to leave but, as you know, time marches on."

SAFETY SCOREBOARD

OUR PLANT
Has Operated
4,132,000 Safe Hours
Through June 11

Since last disabling injury on August 19

scratch score in the third division, a 91. John Goss had a net 71 for the low handicap honors in this division.

Here are all the winners:

DIVISION I

Front Nine		Back Nine	
A. S. Boatwright	36	A. H. Marshall	36
John Boggs	37	John Boggs	37
R. M. Schilling	38	George Wylie	37
Dave Byrd	39	A. S. Boatwright	38
D. M. Papke	39	Bob Lynn	38
Ed Powell	39	W. M. Reynolds	39
E. L. Arnold	40	Dave Byrd	40
George Wylie	40	D. M. Papke	40
J. C. Horton	41	Frank Copeland	41
Bob Lynn	41	C. L. Mathis	41
W. L. McMahan	41	C. S. Patton	41
P. F. Pasqua	41	R. M. Schilling	41
H. E. Shaw	41		

NO. 8 HOLE-IN-ONE

Alvin Boatwright	11 in.
Bob Lynn	1 ft. 4 in.

NO. 12 HOLE-IN-ONE

Steve Cates	9 ft. 4 in.
A. H. Marshall	9 ft. 10 in.

DIVISION II

Front Nine		Back Nine	
C. E. Nunley	38	J. B. Wilhoit	36
L. C. Patrick	38	A. J. Kessing	37
Bob Pyle	38	I. D. Stephens	37
V. E. Houston	39	C. E. Nunley	39
J. C. Qualls	40	Ted McKenzie	40
T. W. Bartlett	41	H. E. Trammell	41
A. J. Kessing	41	W. P. McEvoy	42
C. T. McLaughlin	41	J. C. Qualls	42
L. P. Pasquier	41	T. W. Bartlett	43
A. L. Joiner	42	G. B. Brooks	43
R. O. Meyers	42	R. E. Nier	43
H. E. Trammell	42	D. L. Townsend	43
J. B. Wilhoit	42	R. C. Willoughby	43

NO. 8 HOLE-IN-ONE

Cliff Nunley	5 ft. 10 in.
Gerald Lay	12 ft. 10 in.

NO. 12 HOLE-IN-ONE

John Hill	12 ft. 2 in.
Everett Strunk	13 ft.

DIVISION III

Front Nine		Back Nine	
Bob Orrison	34	Sid Speckter	33
J. R. Goss	36	J. R. Goss	35
E. D. Legg	37	Bob Orrison	35
John Cobb	38	George Harper	37
Lee Bradley	39	E. D. Legg	38
Ron Campbell	39	John Cobb	39
Henry King	39	Bill Lenihan	39
R. E. Ziegler	41	Carl Peterson	39
George Harper	42	Bob Pyle	39
John Tindall	42	Lee Bradley	40
		H. R. Bryan	40

NO. 8 HOLE-IN-ONE

Hardin Bryan	15 ft. 11 in.
L. C. Wrights	32 ft. 6 in.

NO. 12 HOLE-IN-ONE

Bob Pyle	12 ft. 8 in.
John Cobb	18 ft. 6 in.

Wallace Hills June 27

The next tournament will be held at the Wallace Hills course near Maryville on June 27. Starting times may be obtained from the Recreation Office on Monday, June 22.

AGE LIMIT INCREASED

Americans in good health can now be blood donors until they reach age 66 instead of their 60th or 61st birthdays. A joint announcement recently to this effect has been made by the American Association of Blood Banks in Chicago and by the American National Red Cross in Washington, D.C. The need for blood is increasing at a rate of about 12 per cent a year, and Americans are living longer and keeping their health and vigor longer than previously.

Operation Group Names George Miller Foreman



George H. Miller

George H. Miller has been promoted to a power and utilities shift supervisor in the Operations Division. He has been employed at the plant since November 7, 1944. Prior to his transfer to the power and utilities department, Miller worked in the Barrier Plant as inspector and before that as a development and process operator.

Miller is a native of Bybee, Tenn., and was graduated from Cocke County High School. He has taken extension courses from UT. Mrs. Miller is the former Billie Faye Duncan from Little Rock, Ark. They have three children: Judy Dean, who works for the Knoxville News-Sentinel; George H. Jr., a Junior in Oak Ridge High; and John Michael, a third grade pupil at Cedar Hill School.

Miller's outside interests include fishing, boating, and hunting. The Millers live at 102 Malvern Road, Oak Ridge.

Mosquito Secrets

By T. A. LINCOLN, M.D.

Although East Tennessee has comparatively few mosquitoes, residents still complain. If they vacation either in the far North or South, they will quickly realize what a severe nuisance mosquitoes can really be. Understanding some of their intimate habits may help vacationers avoid these pests or at least appreciate how, when, and why they work their deviltry.

When mosquitoes hover about one's ears, their insistent singing is extremely annoying by itself and of course their presence means potential bites.

The responses to bites vary widely in individuals. Reactions to the mosquito saliva consist of primary wheals which develop within 15 to 60 minutes and delayed papular reactions which appear in about 24 hours and sometimes again days or weeks later.

Reactions Are Allergic

Skin reactions to mosquito saliva are not species specific. When a person becomes sensitized as a child to one species he will probably react, though less vigorously, to the first exposure to a different species.



Dr. Lincoln

Both the immediate and delayed reactions are allergic in nature. The immediate reaction is associated with circulating antibodies, while the delayed reaction is not. Some people who have frequent exposure to mosquito bites eventually become relatively desensitized. The immediate reaction disappears first but some rugged outdoorsmen even lose the delayed reaction. Artificial desensitization, like

that used for hay fever victims, is theoretically possible. As yet, there is not a sufficient patient market to justify the development of the mosquito saliva extract.

The female mosquito is the culprit. She must have blood to provide protein for the development of her eggs. Males may be noisy and rowdy and are noted for their swarming, but they eat only plant nectar and honeydew. An aggressive female can ingest 1 to 2 times her body weight in blood during one feeding.

Interesting to Watch

After alighting on the skin, the mosquito searches for a suitable spot for piercing. If you can tolerate the bite, it is fascinating to watch a mosquito search, probe, and then suck blood from your forearm. She inserts a flexible needle device called the fascicle through the skin. She can bend it almost at a right angle after she gets it under the skin and will probe in many directions until she strikes a capillary. She then inserts it and threads it up the vessel, sometimes for as much as a quarter of the needle's length. A full meal usually requires about three minutes.

Mosquitoes tend to bite for a relatively restricted period each 24 hours. However, they will bite anytime when they are disturbed. They exhibit what is called a "biting drive." During such time they are particularly receptive to stimuli such as moisture, heat, and odors arising from a potential victim.

Dr. A. N. Clemens from the University of Southampton in his book, *The Physiology of Mosquitoes*, reports on some interesting observations on the sex life of the mosquito as it relates to biting. The sequence in which biting and mating occurred varied in different species, but biting was often found to precede mating. Five-day-old virgin females of one species bit poorly, although females of the same age kept with males would bite. The biting activity was proportional to the number of males in the group.

Prefer Dark Clothing

Day-flying mosquitoes who are in their biting drive look for their victims. With night-flying mosquitoes, and probably also some day flyers, wind-borne odors are probably the most important stimuli. They are attracted by odors associated with human sweat and the many different animal odors. When females get near a potential victim, they are directed by the heat and humidity which rise above any warm-blooded animal. Emission of 10 percent carbon dioxide, corresponding to the normal human exhalation rate, from a heated dummy

Thwart Auto Theft Urges FBI Head

There's a lot you can do to prevent the theft of autos . . . particularly your own, according to J. Edgar Hoover, director of the Federal Bureau of Investigation.

- DON'T leave your keys in the ignition.
- DON'T leave car doors unlocked or windows open.
- DON'T leave packages, clothing, or articles inside car where they are visible.
- DON'T leave car unattended on expressway or superhighway.
- DON'T be careless just because your car is fully insured. Thefts increase insurance costs, and thieves use stolen cars to commit more serious crimes.
- DO keep a record on your person of your license number and vehicle identification number.
- DO notify police immediately if you believe your car has been stolen.
- DO your duty as a citizen. Help teach young people that "joy-riding" in a stolen car is a serious crime.
- DO be car theft conscious. Avoid mental lapses and habits that make it easier for car thieves to strike.

Environment Forum Set at United Nations

The International Atomic Energy Agency, in cooperation with the U.S. Atomic Energy Commission, will convene a symposium on "Environmental Aspects of Nuclear Power Stations" at United Nations Headquarters in New York from August 10 to 14.

The symposium will provide a forum for exchanging basic information on the health and safety aspects of nuclear power stations in various nations and also discussions of the environmental implications of nuclear power. Papers are expected to be of interest to government representatives, private organizations, and the general public.

head will greatly increase the mosquito landing rate.

Mosquitoes show a distinct preference for humans wearing certain clothing colors. The brighter the surface, the less is its attractiveness. The darker shades are definitely preferred by most species.

There are a few people who do not attract mosquitoes. Several investigators are studying sweat from these people, using molecular distillation and vapor phase chromatography in an attempt to find which specific components are repellent. At least one fatty acid in their sweat has been found to be repellent. In their study of normals they have found that lactic acid is an attractive ingredient. This research may eventually lead to more effective repellents.

Be Prepared

So when on your vacation, there are certain precautions you should follow. Look out for aroused females — mosquitoes, that is! Wear white or light-colored reflecting clothes. Keep clean and cool — if possible. Use an insect repellent in a form which sticks to the skin even during sweating.

For those whose bite reactions are especially severe, a topical steroid cream or ointment, available by prescription only, can be rubbed on vigorously and will offer some relief. Antihistamine and local anesthetic preparation should be used cautiously because they are skin sensitizers themselves.

Y-12 Eagles, K-25 Colts Share Early Softball League Lead

Y-12's Eagles soar high above standings in the Softball League, with five wins, no losses. K-25's Colts, with four and none are up there too.

Action began with the Y-12 Snakes blasting the Gashouse Gang from K-25 8 to 1. Pitcher Chuck Holland gave up only four hits and the Gang committed two errors to take their team down the drain.

The Rangers squeaked by the 9103 Braves 9 to 8 in a good one. Hits were fairly evenly divided, too . . . 16 to 15. The victors' Russ Smith poled the only homer of the game.

Colts Keep It Up

K-25's Colts kept up their perfect record by downing the Devils, also from K-25 16 to 7. The Colts' Jerry Howard, Jim Shoemaker and Bob Seyfried all clipped long four-baggers . . . while the losers saw Trevor Cook and Leroy Thomas knock long ones.

June 8's action saw the Snakes by the All Stars 7 to 2 . . . as the Y-12 Snakes socked out 11 hits. Chuck Holland, Bill Maddux and Hal Conners hit important doubles.

The Rangers ran by the Bat Boys 12 to 10 in a good free-for-all with the BB's actually out-hitting the Rangers 24 to 23.

Jim Bryson, Lynn Story and Jack Cowan hit one into the grass for the losers; and Ron Thomas, Dan Weiger, Russ Smith and Ron Norris all hit homers for the winners.

The Gashouse Gang from K-25 knocked the Buccaneers out of it 13 to 8 in Tuesday's final game. The Gangs' McElhaney and Langenburger hit long ones . . . the loser's Laceyfield did likewise.

The 9103 Braves beat out the Knockers 13 to 2, as Harold Smith socked two homers and Jerry Paret poled one, accounting for three of the 14 hits.

Snakes Barely Win

The Eagles spotted the Beta 2 Miners 19 to 1, as Don Ferree,

Frank Koon and Ron Greene all socked balls over the fence.

The Colts barely made it by the Y-12 Snakes 5 to 4 in hot action. Sam Duncan hit a homer for the winners . . . Hal Conners and Horace Moorman made one each for the losing effort.

Last Tuesday began with the Eagles hitting the NC squad hard 15 to 5.

Don Ferree and Trig Myhre hit homers . . . and on the losing post it was Dave Post with one.

The Gashouse Gang made hash out of Y-12's Beta 2 Miners 36 to 5 in a runaway.

Marshall's Grandslam!

Bruce Marshall's grand slam homer, along with other homers by teammates Langenburg, McElhaney, Carson and Hightower, helped add to the big score of 36.

The Braves beat the Raiders 23 to 9 in action also last Wednesday (made-up games.)

Hal Smith, Tom Wheeler and Dave Daniels got home on one hit.

Last Thursday saw the NC Squad down the Raiders 17 to 14 . . . Bob Birdwhistle helped the winning cause with a big one; Mike Gregg poled a homer for the losers.

All Stars Win

The All Stars put the Devils down 18 to 5, as Horace Miller socked one out of the park . . . for the losers homers were knocked by Larry Brown and Jerry Grooms.

Beta 2 Miners got back into the winning circle by ousting the Knockers 22 to 12. Jerry Petticord clipped a homer to help win; Harry Corey helped the Knockers lose with one.

League standings follow:

Team	W	L
Eagles	5	0
K-25 Colts	4	0
Snakes	4	1
All Stars	4	1
Rangers	3	1
K-25 Gashouse Gang	4	1
K-25 Devils	1	3
NC Squad	2	3
Bat Boys	1	4
Beta 2 Miners	2	4
Buccaneers	1	3
9103 Braves	2	3
Raiders	0	5
Knockers	0	5

FAMOUS ATOMIC SCIENTISTS

THE CARBON-14 METHOD... ONE OF THE "NUCLEAR CLOCKS" ... HELPS ARCHAEOLOGISTS TELL THE AGE OF THEIR DISCOVERIES

... INCLUDING THE FAMOUS DEAD SEA SCROLLS

1908-

LIBBY'S DOG "PEPPER"

A FEW DAYS BEFORE LIBBY WAS AWARDED THE NOBEL PRIZE, PEPPER BIT HIS MASTER... HE HAD EARLIER BITTEN ONLY THREE OTHER PEOPLE... ALL NOBEL PRIZE WINNERS

DR. WILLARD F. LIBBY

DIRECTOR, INSTITUTE OF GEOPHYSICS AND PLANETARY PHYSICS, UCLA
 ... THIS COLORADO-BORN CHEMIST WON 1960 NOBEL PRIZE FOR CHEMISTRY FOR DEVELOPMENT OF CARBON-14 METHOD-- NOW USED TO ACCURATELY DATE ANCIENT ARCHAEOLOGICAL ARTIFACTS. AS WORLD WAR II VOLUNTEER, PARTICIPATED IN THE MANHATTAN PROJECT FOR DEVELOPING THE ATOMIC BOMB. SINCE 1947, HAS SERVED ATOMIC ENERGY COMMISSION AS MEMBER OR ADVISOR.



LONG-TERM STUDY — T. P. O'Farrell, left, manager of Battelle-Northwest's terrestrial ecology section, and J. D. Hudlund, Battelle scientists, hold two of 24 mule deer fawns they tagged during 1969 on the AEC's Hanford Project, Richland, Wash. The helicopter was used to locate the fawns and aided in their capture. The tagging is the first step in a long-term study of the Project's deer population.

Lawn Mower Rifles Missile Into House

(Safety statistics indicate that more accidents occur off-the-job than on-the-job. The Nuclear Division News welcomes personal accounts like the following, with safety messages for fellow employees. Submit your experiences in your own writing, or call us at 3-7100 and we'll be happy to write the story for you. Let others profit from your own errors . . . The Editor).

By JOHN HAFEFY

Accidents are those unfortunate things that happen to someone else.

That's the view many of us seem to take — until it's too late. But I'm lucky. A "near miss" provided a lesson that scores of safety statistics could not have taught.

Weekend before last, while cutting my grass, a nut worked loose from one of my mower's wheel bolts, allowing the wheel bearing to slide into the path of the mower blade.

Like Rifle Shot

The blade whipped the bearing like a rifle shot through the open area where debris and cut grass are normally tossed free. My mower didn't have a safety guard, and the missile traveled some 50 feet in a straight line before going through a screen, window glass, and into a wall inside my house. Luckily, no one was hurt, although glass was splattered all over two rooms.

What could have happened is frightening. The window is just above the kitchen sink. Moments earlier, I had seen my 7-year-old daughter at the window getting a drink of water. My wife spends a lot of time there doing her daily work. If an expert marksman had been shooting for the spot where they had stood only minutes earlier, the path of the missile could not have been more accurate.

Belt and Suspenders

The speed of the bearing was tremendous. About an inch in diameter, it made a hole only slightly larger than that in the

New Plant

(Continued from Page 1)

disposal and in urban clean-up programs throughout the country, including New York City.

Now Operates 4 Plants

The Films-Packaging Division now operates plants at four locations that produce plastic films for consumer and industrial packaging use. Some of the division's best-known film products, in addition to those sold under the Glad brand name, are Zedel polyethylene, Udel polypropylene, Bakelite vinyl, Perflex polyethylene, and Visten vinyl.

At three other locations, the division makes cellulosic casings for the manufacture of sausage and smoked meat products for use all over the world.

Overlook

(Continued from Page 1)

The Overlook is air-conditioned and has tinted, heat-absorbent windows to protect displays and add to the visitor's comfort.

An updated "play-it-yourself" tape supplements a large aerial photograph on which the major buildings are marked. Using the photograph, the visitor can correlate the taped message with plant landmarks from the excellent vantage point within the Overlook.

On the back wall is a collection of photographs illustrating the "chain of nuclear operations" and the gaseous diffusion plant's central mission for the AEC — production of enriched uranium.

screen and only about the size of a half dollar in the glass window.

Next time I'll have a guard on the mower, although they are a little inconvenient. And my children will either stay inside or play with friends somewhere else in the neighborhood. And, needless to say, I've already checked the nuts and bolts on the other wheels.

"Belts and suspenders?" That's right. This time it was only a screen and a window pane. It could have been so much worse.

LIBRARY LISTINGS

Oak Ridge Gaseous Diffusion Plant

The Successful Speaker's Planning Guide. E. Hegarty.

Process Analysis by Statistical Methods. D. M. Himmelblau.

Control Theory and the Calculus of Variations. Workshop on Calculus of Variations and Control Theory, University of California, Los Angeles.

How to Become a Professional Engineer. J. D. Constance.

Mechanical Engineering for Professional Engineer's Examinations. J. D. Constance.

Preventive Maintenance of Electrical Equipment (2nd ed.). C. I. Hubert.

Determination of the Surface Colloidal Conditions Which can Lead to High Salt Rejection Reverse Osmosis Polymer Membranes. W. J. Subcasky.

Second Report on Development of Improved Cellulose Acetate Membranes for Reverse Osmosis. M. E. Cohen.

Oak Ridge National Laboratory

World Population — A Challenge to the United Nations and Its System of Agencies. UNA-USA National Policy Panel on World Population. (Central, 4500).

Science — The Center of Culture. Isidor I. Rabi. (Central, 4500).

Behind the Executive Mask, Greater Managerial Competence Through Deeper Self-Understanding. Alfred J. Marrow and AMA Managements Reports, No. 79. (Central, 4500).

Optimum Utilization of Scientific and Engineering Manpower. William G. Torpey. (Central, 4500).

Mathematics for Biologists. Alan Crowe and Angela Crowe. (Biology, 9207, Y-12 Area).

Research Methods in Plant Science. Richard M. and Deana T. Klein. (Biology, 9207, Y-12 Area).

European Congress on the Influence of Air Pollution on Plants and Animals. 1st, Wageningen, 1968. (Biology, 9207, Y-12 Area).

The Microtome's Formulary and Guide. Peter Gray. (Biology, 9207, Y-12 Area).

World Space Directory. (Technical, 9711-1, Y-12 Area).

Basic Radiation Protection, Principles and Organization. Charles W. Easley. (Technical, 9711-1, Y-12 Area).

Bibliography on Atomic Transition Probabilities, January 1916 through June 1969. B. M. Miles, W. L. Wiese, and U. S. National Bureau of Standards. (Thermonuclear, 9201-2, Y-12 Area).

Oak Ridge Associated Universities

Manual on Safety Aspects of the Design and Equipment of Hot Laboratories. International Atomic Energy Agency.

High Temperature Properties of Gases. A. S. Predvoditelev. Jerusalem, Israel Program for Scientific Translations, 1969.

International Symposium on Atomic, Molecular, and Solid-State Theory and Quantum Biology, Sanibel Island, Fla., 1968.

Employment and Earnings States and Areas. U. S. Bureau of Labor Statistics.

Comparative Guide to American Colleges for Students, Parents, and Counselors. James Cass. Lovejoy's Career and Vocational School Guide (3rd large edition). Clarence E. Lovejoy.

Basic Mechanisms in Photochemistry and Photobiology. Proceedings.

UNION CARBIDE CORPORATION
NUCLEAR DIVISION
P. O. BOX Y, OAK RIDGE, TENNESSEE 37830

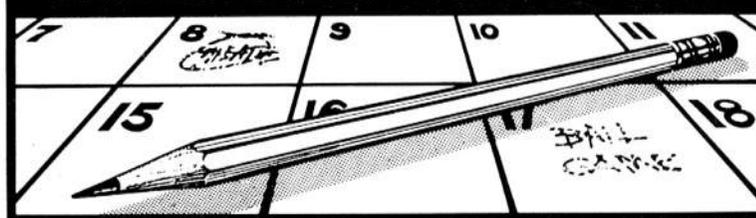
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ENJOYING RAVE REVIEWS—Milt Carey and Paula Gillespie are caught in an excellent scene from 'Don't Drink the Water,' the Oak Ridge Playhouse's final production of the season. Y-12er Carey is dubbed 'one of the few remaining genuine, solid gold Playhouse veterans' by the Playhouse crowd. His stage wife, seen above, is really married to ORNL's Frank E. Gillespie.

CALENDAR OF EVENTS



TECHNICAL

June 18

Physics Division Seminar: "Instrumental Effects on the Performance of Gamma Ray Spectrometers." E. Fairstein, Tennelec, Inc. Central Auditorium, Building 4500N, 10 a.m.

June 19

Joint Neutron Physics Division and Physics Division Seminar: "Calculation of the Induced Activity in the Moon From Solar Cosmic-Ray and Galactic Cosmic-Ray Bombardment and Comparisons with Experiment." T. W. Armstrong. East Auditorium, Building 4500N, 3:15 p.m.

June 19

Biology Division Seminar: "Problems in the Reactivity of Reduced Flavin and Flavoproteins and Oxygen." Vincent Massey, University of Michigan. Large Conference Room, Building 9207, 12:15 p.m.

June 29

Biology Division Seminar: "Aqueous Solutions of Tetraalkylammonium Carboxylates: A Model for Hydrophobic Bonding in

Proteins." S. Lindenbaum, ORNL. First Floor Tower Annex Conference Room, Building 9207, 12:15 p.m.

COMMUNITY

June 18

Oak Ridge Community Playhouse Workshop — everyone welcome. Oak Ridge Playhouse, 7:30-10:30 p.m.

June 19, 20

Two final performances of Woody Allen's comedy, "Don't Drink the Water." Oak Ridge Playhouse, 8:20 p.m. Admission: \$2.

June 23, 25

Oak Ridge Community Playhouse Workshop — everyone welcome. Oak Ridge Playhouse, 7:30-10:30 p.m.

June 28

Oak Ridge Community Art Center's Humanities Workshop, Ridgeway Park, 1-4 p.m., weather permitting. Basic art materials are made available at slight cost. Informal discussions on literature, a drama workshop, occasional folk guitar sessions.