

# Nuclear Division News



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

Vol. 8/No. 9/April 28, 1977

## Personalized benefit reports mailed to eligible employees

Another "J. Q. Carbide" computer-prepared personalized benefit report is being mailed this week to all full-time employees of the Nuclear Division who had at least one year of credited service on December 31, 1976.

The report, "Your Benefits at Union Carbide," is divided into five sections and is calculated using the personal earnings and credited service of each employee as of December 31, 1976.

It is the sixth such report since it was first distributed in 1958.

Several major improvements have been made in the Company's benefit

program since the last report was mailed in 1975.

### Pension Plan improvements

Changes in the Pension Plan provide for calculating the average final earnings over the last three years rather than five years, early retirement with full benefits when age and service adds to 85, and reduced benefits as early as age 50 for employees who have 10 years' credited service. A new 1.5 percent optional benefit formula has been added and survivor benefits have been expanded to provide automatic

coverage for a deceased employee's spouse after 10 years of credited service. Provisions also are available for employees or retirees to elect to provide a survivor's benefit for unmarried dependent children under age 23 or dependent parents.

Other improvements include a new Dental Expense Assistance Plan, an increase in the maximum benefits available under the surgical schedule of the Basic Hospitalization Plan, and an increase in the allowance for daily charges for physician's visits in the hospital and in the maximum number of visits for each confinement.

### Cost estimates

Two important cost estimates are shown in the report. Each employee is shown how much it would cost at age 65 to purchase an annuity in the same amount as his or her prospective Union Carbide Pension.

The second estimate gives each employee the annual cost to the company for the benefits shown in the report. While this number will be larger than most employees would have thought, it still does not represent the full cost of the Nuclear Division's benefits package. This is because another substantial expenditure involving pay for time not worked, such as vacations and holidays, does not show in this report but is included in the regular payroll dollar.

In order to understand the report better, the commentary which is on the opposite side from the tabulation of benefits should be read first.

Note that the calculations for Pension Plan benefits do not include any reduction for survivor benefits when elected at retirement, and those employees who are enrolled in the Contributory Retirement Plan should note that their Pension Plan benefits will be reduced as provided by the regulations if they are still in the Retirement Plan at the time of death or retirement.

### Medical, dental expenses

The first section of the report deals with medical expenses . . . showing how hospital room and board (semi-private or ward), surgeon's fees, doctors' hospital visits and other hospital expenses for employees, spouses, and dependent children are paid.

Major Medical benefits also are explained in this section, showing that if you are covered by the optional Major/Special Medical Plan, 80 percent of most eligible medical expenses are paid after the deductible for that period is satisfied. The deductible is normally \$100 per period per person. A general description of the benefits from the new Dental Expense Assistance Plan also is provided.

Disability benefits are explained in the second section, where both temporary and permanent disability coverages are shown. Life insurance payments, Social Security and Pension Plan benefits, all under the disability provision of each plan, are given. Medical plans may be continued at half the premium cost by disabled employees until they qualify for Medicare or reach age 65, when they are given a medical termination.

Benefits for survivors of employees who die while still on the payroll are shown in the third section. These benefits can include payments from Group Life Insurance, Pension Plan, Savings Plan and Social Security, depending on the deceased employee's age and the age of the survivor.

### For your retirement

Income at retirement is presented in the fourth section. These estimates are based, in most cases, on present earnings and projected credited service until time of retirement. Estimated Social Security payments for you and your spouse also are shown in this section.

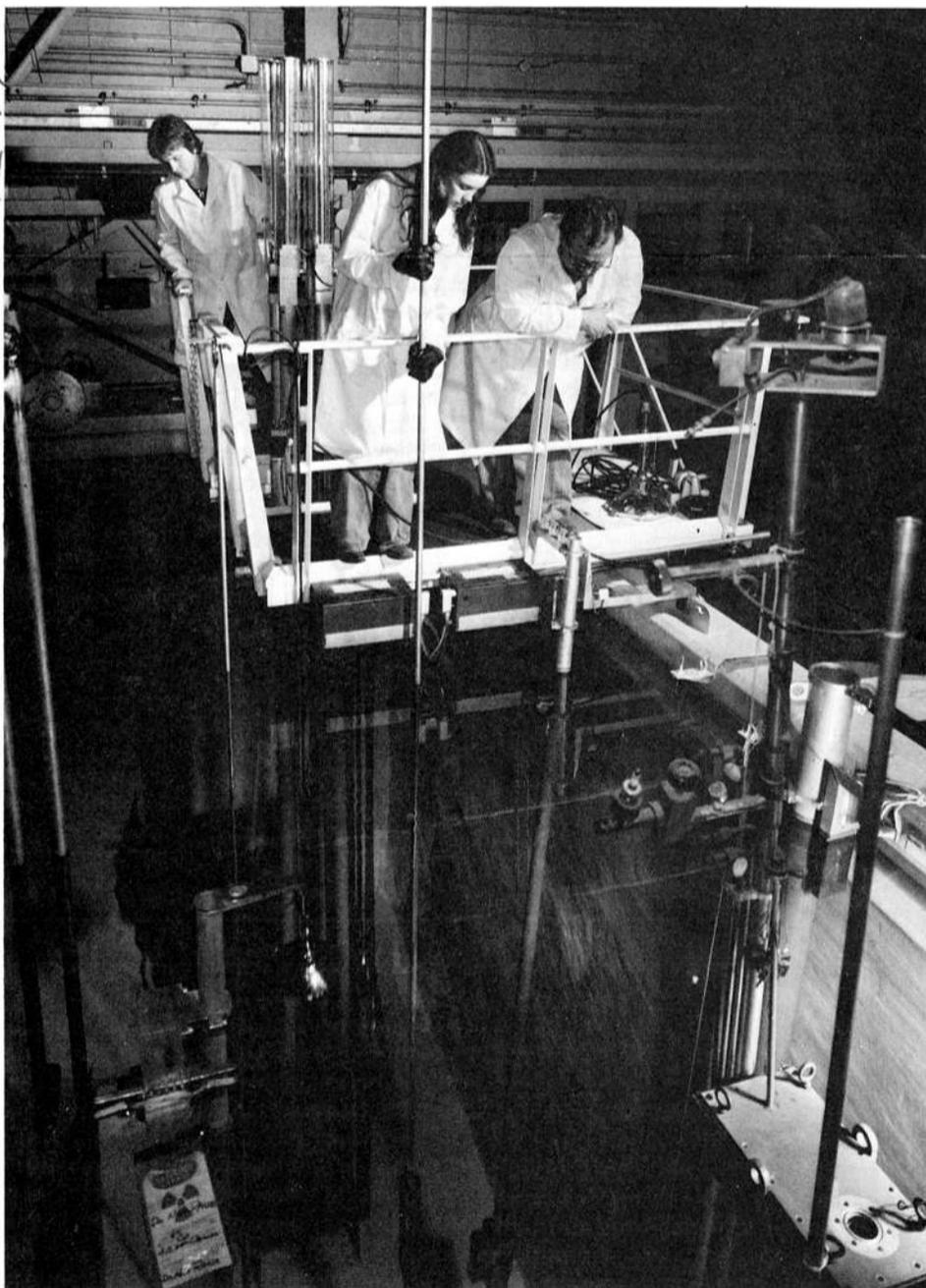
Estimates are calculated for both normal and early retirement with full benefits.

Other benefits to the retired employee include retired life insurance which can be drawn down to \$1,250 to help pay certain medical expenses, if needed.

Savings Plan payments from the General Savings Fund are made in a lump sum, while payment from the Personal Investment Account may be received in a lump sum or in regular payments stretched over a selected period of time.

This section also shows the amount of money an employee would have to pay for an annuity at the time of

(Please see page 8)

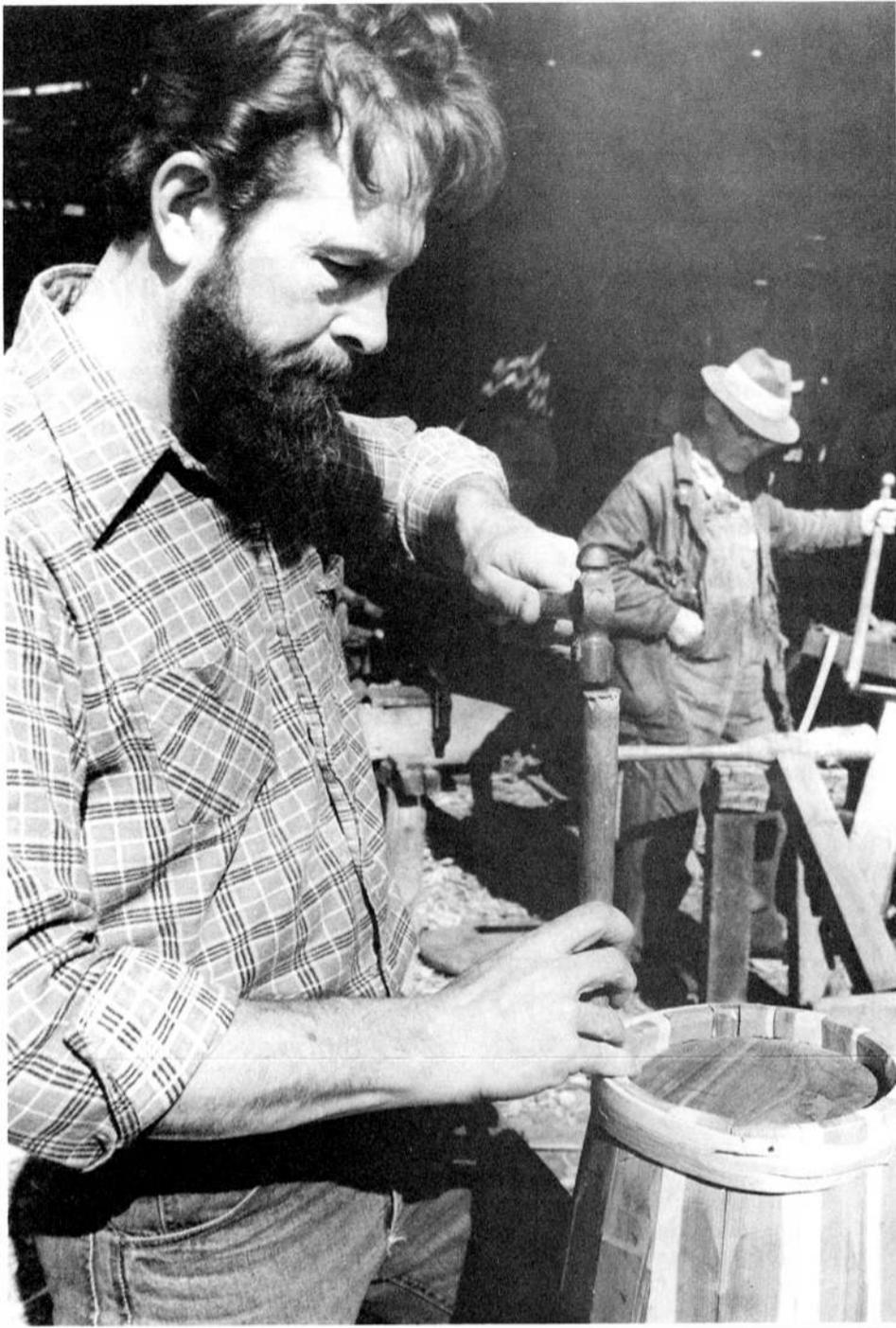


REACTOR EXPERIMENTS — Danny Pace and Earline Millsaps, senior nuclear engineering students from Mississippi State University, reposition a fuel element in the 100 watt reactor at the Pool Critical Assembly (PCA) next to ORNL's Bulk Shielding Reactor. Looking on is instructor Tom P. Hamrick of Reactor Operations. Pace and Millsaps are among the 145 students from seven universities enrolled this year in ORNL's Universities Reactor Experiments Program. The students will perform a combined total of 100 experiments this year. The PCA and the Health Physics Research Reactor are major training tools used in the program.

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## Nuclear Division employees will participate in Annual Appalachian Music and Craft Festival



**COOPERING** — Bill T. Henry, ORNL chemical operator, makes a butter churn under the guidance of his friend and mentor, Alex Stewart. Henry will demonstrate his craft at Saturday's festival.

## Toll enrichment tops \$58 million for first quarter

More than \$58 million in toll enrichment sales were reported at ORGDP during the first quarter of 1977. This figure compares to \$44 million in sales during the first quarter of 1976.

During the three-month period, almost 480,000 pounds of enriched uranium were shipped for use in nuclear reactors in Belgium, France, Japan, Spain, Sweden and West Germany and in the following states: Illinois, Nebraska and Tennessee.

Under the toll enrichment program, privately licensed owners bring their uranium to a gaseous diffusion plant for enriching on a toll basis. Customers are charged for the services required to separate from natural uranium the desired percentage of the uranium-235 isotope, usually between two and three percent.

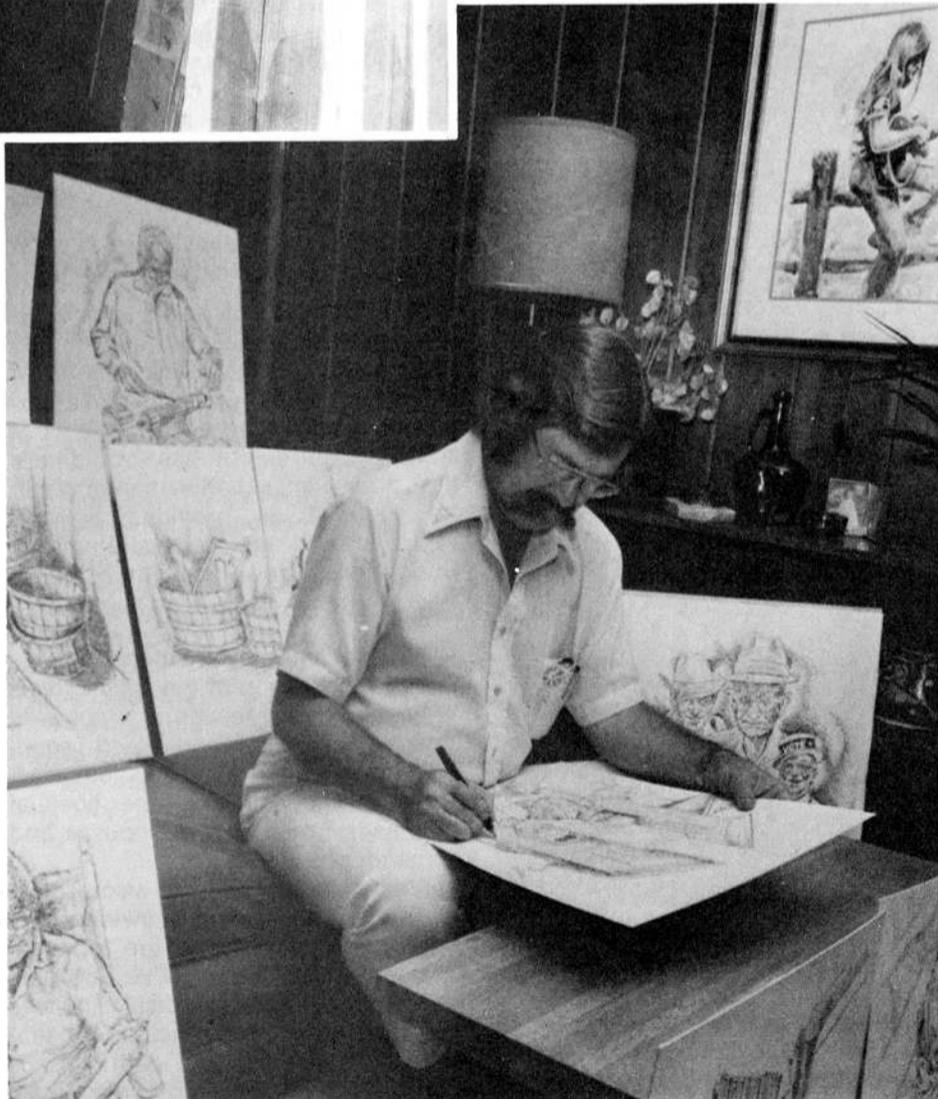
Many Nuclear Division employees will participate in the 4th Annual Appalachian Music and Craft Festival, sponsored by the Children's Museum of Oak Ridge. Festivities will be held at the museum on Saturday, April 30, from 10 a.m. to 4 p.m. The focus will be on the early days of Oak Ridge, when listening to the WNOX Midday Merry-Go-Round was a favorite form of entertainment.

Festival coordinators are Selma Shapiro, director of the Children's Museum and wife of ORNL's Ted Shapiro, and Ann Suchomel, whose husband, Robert, also works at ORNL.

### Craft highlights

More than 20 area craftspeople will display the best examples of Tennessee's cultural arts. Traditional weavers, flax spinners, basketmakers, whittlers, cornshuck dollmakers and others will share their skills and will offer items for sale.

Some participating Nuclear Division craftsmen include: Bill T. Henry, ORNL chemical operator, who will demonstrate the old art of coopering (barrel making) — a craft he learned more than a year ago from his close friend, Alex Stewart of Sneedville; Bill Clark, ORNL Graphic Arts Department, will be on hand to share and sell copies of his book of sketches, **Passing America**, a documentary on the life and times of the people of the Appalachians; and Fred A. Heddleson, development staff member in the Engineering Technology Division at ORNL, will have for show and sale many samples of his artistic specialty — area barns painted in his unique style.



**FINAL TOUCHES** — Bill Clark, ORNL Graphic Arts Department, completes drawings for his recently published book, **Passing America**. Clark will be one of the festival's featured artists.

Other craft exhibits include: an open-to-all quilting bee, demonstrations and samples of the work of both the Choctaw and Cherokee Indians, a display of Civil War accoutrements, a lye soap-making demonstration, and displays of the art of tatting and tinsmithing.

### Musical 'swap sessions'

Music will feature "swap sessions" in the museum throughout the day — with everything from bagpipes and string quartets, to harmonicas and fiddles. During these sessions, visitors can bring their instruments and join in the jamming.

The festival's premiere musical event will take place at 1 p.m. on Saturday in the gym adjoining the Children's Museum. It will feature Carl Story and his Ramblin' Mountaineers — longtime stars of Midday Merry-Go-Round, Tennessee Barn Dance and the Grand Ole Opry. Story and his group will play many old time gospel songs along with many bluegrass favorites. Celebrities for the occasion include: Homer Harris (and his horse), Danny Bailey, Red and Fred, Dave Durham, Joe Green, Tony Musko, Lowell Blanchard and Smiley Blanchard — city councilman from Knoxville.

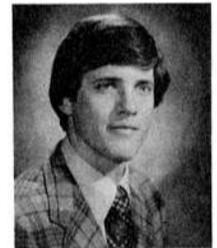
### Festival fun

Rounding out the musical entertainment will be several local stars and their bluegrass bands, plus clogging mountaineers.

A special treat will be a food-judging contest — with prizes and ribbons for the best pickles, jams, jellies and baked goods. For information about entries, contact the Children's Museum. Add to this, an honest-to-goodness Medicine Man Show, comedians and an old-fashioned cake walk. The Appalachian Music and Craft Festival offers something for all ages.

Tickets are on sale at the Oak Ridge Children's Museum, Overton's Drug Store, Jackson Square Pharmacy or at the festival door. The festival is a part of Event '77, sponsored by the Oak Ridge Chamber of Commerce.

## Promoted to chemist at Paducah facility



**Seltzer**

Steven F. Seltzer has been promoted to a chemist at the PGDP. He joined Union Carbide last year after teaching at Garland County Community College.

He holds a B.S. and M.S. from Murray State University, along with a specialist degree in college teaching.

He and his wife, Denise, live on Harrison Street in Paducah.

## safe thinking . . .

**BAKING SODA** — is most effective (and handy) in combating a grease fire in your kitchen. Water should never be used as it may spread the fire rather than extinguish it.

## question box

If you have questions on company policy, write the Editor, Nuclear Division News (or telephone your question in, either to the editor, or to your plant contact). Space limitations may require some editing, but pertinent subject matter will not be omitted. Your name will not be used, and you will be given a personal answer if you so desire.

### Staggering shifts

**QUESTION:** Has any thought been given to the possible reassignment of ORGDP shift workers from the present 8-4, 4-12, 12-8 to 7-3, 3-11, 11-7 shifts in an effort to relieve the increasing morning traffic congestion from the Oak Ridge Turnpike/White Wing Road traffic funneling into the plant?

**ANSWER:** Management at ORGDP is currently considering several possible adjustments to the working hours. Any change in working hours, however, would carry with it some degree of adverse impact on operations; therefore, they are carefully considering the various options.

Any change will, of course, be announced far enough in advance to allow the affected employees time to make any required adjustments to their personal travel arrangements.

### Slow bond receipt

**QUESTION:** Payroll deductions for the United Way and Major Medical Insurance are deducted on a monthly basis for weekly-roll employees. I was told by the Y-12 Payroll Department that deductions for U.S. Savings Bonds must be made weekly. Why?

**ANSWER:** Savings Bond deductions generally are substantially larger than deductions for United Way or Major Medical. Making bond deductions on a weekly basis permits employees to average both their savings and their income. A uniform system is dictated to minimize computer programming. Most employees are satisfied with the current arrangement.

### Upgrading guard portals

**QUESTION:** Why can't some of the guard portals be painted and cleaned up? Some of the posts are very filthy. Some of the outside portals have a great many visitors every day and the majority of them are from foreign countries. Someone should visit these portals and see the bad conditions.

**ANSWER:** The Company shares your interest in keeping our access portals in good repair and neat in appearance. As a result of your question, portals at all locations have been checked. Most are in good condition, but admittedly the Y-12 portals serving some ORNL employees at that site are not up to normal standards. Corrective action is being taken.

### Smoking on buses

**QUESTION:** I have to ride the bus in the ORGDP area each day. As a result, I get nauseated and have a headache from the smoke. Why can't we have no smoking signs on the buses? Surely people can refrain from smoking for a short time for the sake of those who are allergic to smoke.

**ANSWER:** Your question certainly has merit. Effective April 1, "No Smoking" signs were posted in the buses at ORGDP.

### Performance appraisals

**QUESTION:** During the recent performance appraisal of stenographers and secretaries in the Purchasing Division, the buyers were not given a chance for any input into the appraisals, even though the stenographers and secretaries work directly for the buyers. Is this a Company policy, or just a way for the supervisor to select those he wants to have the largest merit raises?

**ANSWER:** In those organizations where the employee being appraised performs work for persons other than his/her immediate supervisor, it would be appropriate for the appraising supervisor to seek input from those persons, regarding the performance of the employee being appraised. When there are differences of opinion, the final decision must be made by the responsible supervisor.

We believe this system minimizes favoritism and permits an appropriate level of compensation for performance rendered. The Purchasing Division will make certain that this practice is followed in connection with the performance appraisal program.

### Leaving work area

**QUESTION:** I work in Building K-1007, which is separate from the major security area of ORGDP, yet still within the complex. Often during daylight break periods, I have enjoyed a few moments of relaxation by leaving the confines of the building. Recently supervision has decided this is "bad" and will no longer be allowed. The Company takes pride in the beauty of the grounds. Is it only for the passing motorist and not for the employee to enjoy?

**ANSWER:** Due to the nature of their work, some employees in Building K-1007 are routinely granted brief rest breaks at which time they may leave their work area. Other employees may receive no regularly scheduled break due to the necessity that they remain near their work location; however, they are permitted to obtain snacks, coffee, etc., whenever their work situation permits.

For those employees who receive regular breaks, management in K-1007 does not prohibit them from leaving the building. The short duration of the allowed break time would, however, dictate that the employee remain within the near proximity of the building. Alas, beauty must sometimes yield to duty.

### safe thinking ...

**ROLL OUT THE CARPET** — You usually think of a carpet as something to walk on ... but a small piece of carpet may also help your car "walk out" of ice or snow when placed in front of a spinning rear wheel.

## Mason Oakes announced head ORGDP accounting, budget

PH 77-1648

H. Mason Oakes was recently named head of ORGDP's Accounting and Budget. In this capacity he will be responsible for accounting and budget functions, as well as Cashier, Travel and Employees' Company Store. He formerly worked in Finance and Budget of the General Accounting Division.

A native of Marion, Ala., he holds a degree in business administration and also attended Marion Institute. He has also done graduate work at the University of Tennessee.

He served more than four years in the U.S. Army before joining Union Carbide.

Mrs. Oakes is the former Ralphine Nichols and the couple lives at 133 Georgia Avenue, Oak Ridge. They have two daughters, Monica and Melissa.



H. Mason Oakes

## division deaths

William N. Choate, ORGDP operations Division, died April 9 in a Knoxville hospital.

He is survived by his wife, Elizabeth Queen Choate, Branham Road, Kingston; a daughter, Mrs. Redford Norman; three sons, Tim, Tony and Terry; parents, Mr. and Mrs. Frank Choate, five sisters, Mrs. Charles Armstrong, Mrs. Pat Boyd, Mrs. William Mayfield, Mrs. Ovilene Mayfield and Mrs. Joyce Culpepper; five brothers, Dan, Gene, Robert, Bill and Ernest E. Choate, in Engineering in Y-12; and seven grandchildren.

Funeral services were held at the Kyker Funeral Home Chapel with burial in Roane Memorial Gardens.

The family requested that any memorials be in the form of contributions to the Galilean Children Home, Kingston.



Mr. Choate

Albert L. Foland, Y-12 Technical Division, died April 8 at a Knoxville hospital.

A native of Rockwood, he joined Union Carbide in 1951 and was a veteran of World War II.

Survivors include his wife, Helen Burnett Foland, 205 South Skyline Drive, Rockwood; a son, David L. Foland; daughters, Mrs. Orvill Kirkland and Mrs. James Brady; a brother, James R. Foland; a sister, Mrs. Samuel J. Hudgins; and his mother, Florence Foland.

Funeral services were held in the First Presbyterian Church with burial in Oak Ridge Cemetery.



Mr. Foland

## wanted



### Y-12 Plant

**RIDE WANTED** from vicinity of East Knoxville (Fourway on Asheville Highway) to any portal, straight day. Home phone, Knoxville 522-0964.

**RIDERS** or will join car pool from Sweetwater to Central Portal, straight day. George May, plant phone 3-7272, home phone Sweetwater 337-7322.

### ORGDP

**RIDERS** for existing car pool from West Knoxville to Portal 2 or 4, straight day, 7:45 a.m.-4:15 p.m. Bob, plant phone 3-9427, home phone Knoxville 690-1916.

### ORNL

**CAR POOL MEMBERS** from areas of West Outer, Waddell, Pennsylvania or Hillside, Oak Ridge, to East Portal, 8:15 to 4:30. Tom Burnett, plant phone 3-6939, home phone 483-1975.

**CAR POOL MEMBERS** from Lovell Heights area, Knoxville. Jerry Dixon, plant phone 3-1108, home phone 966-1232.

Daryl M. Papke, a consultant engineer at ORGDP, died April 8, at the Oak Ridge Hospital.

Mr. Papke was a graduate of the University of Illinois and had done graduate work at the University of Tennessee and Western Reserve in Tennessee. He was a member of the Tennessee Society of Professional Engineers and a Fellow of the Instrument Society of America.

Survivors include his wife, Dovie Tallent Papke and a daughter, Karen; 115 Westover Drive, Oak Ridge; his parents, Mr. and Mrs. Rudolph Papke; and a brother, Duane Papke.

Funeral services were held at the First Baptist Church with burial in Oak Ridge Memorial Park.

The family requests that any memorials be in the form of gifts to the sanctuary building fund of the First Baptist Church of Oak Ridge.



Mr. Papke

# ORGDG cited as number one in defensive driving efforts

ORGDG has been cited by the National Safety Council (NSC) as giving the best performance by a business or industry in its efforts in the Council's 1976 Defensive Driving Campaign.

A total of 3,829 ORGDG employees took the defensive driving course last year, more than twice the number of its nearest competitor. A total of 186 individual industries contended in the Council's campaign.

In a letter to Plant Manager Robert A. Winkel, Vincent L. Tofany, president of the NSC, stated, in part, "The training of 3,829 persons in the Defensive Driving Course during 1976 is a tribute to your concern for the safety of your fellow employees and your outstanding ability to organize and implement adult driver education in your company."

"On behalf of the National Safety Council, I would like to extend thanks

and congratulations to you, your organization and your instructors for this outstanding contribution to traffic safety."

A plaque has been designed to attest the achievement and will be presented to Winkel at a later date.

For the first time since the driver improvement program began, combined efforts of industry pushed the number of graduates to over one million . . . a total of 1,009,798. This represents 8,519,320 man hours spent on traffic safety.

"Was it worth it?" asks the Council. "We can take hope that this amount of time spent on traffic safety will in some degree tilt the climate of traffic safety in this country more in favor of personal responsibility on the part of all drivers for safety on the highways," Tofany concluded.

# Infected cells more vulnerable to carcinogens, biologists find

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**DNA RESEARCHERS**—James Regan (left) and Raymond Waters of ORNL's Biology Division pause during an examination of a culture medium containing cancer cells. In their recently-concluded study, the biologists found that rat cells infected with a leukemia virus were more susceptible than normal rat cells to a carcinogen; the infected cells increased susceptibility is believed to have been caused by a DNA repair defect.

Evidence for an association between the presence of a leukemia virus in a rat cell and a DNA repair defect which can lead to the development of cancer has been found by researchers in ORNL's Biology Division.

In a recent study, cells which had been experimentally infected with a mouse leukemia virus showed an impaired ability to repair DNA damage caused by a chemical carcinogen, James D. Regan of the Biology Division's Mutagenesis and Teratogenesis Section said. Damaged DNA which is not quickly repaired, Regan said, may cause an organism to be more vulnerable to the action of a carcinogen (any substance which causes cancer).

### DNA damage

DNA, biologists' shorthand for deoxyribonucleic acid, is an organic acid found in the nucleus of cells which determines individual hereditary characteristics. A DNA molecule consists of two chains or strands of four types of "building block" compounds, called nucleotides, arranged in a highly specific order. The two chains are bonded together in a double spiral or "helix" formation.

When a cell is damaged by radiation or a chemical carcinogen, a lesion, or break, is caused in the DNA strand. The longer this damage is allowed to go unrepaired, the greater are the chances that the damaging agent can induce cancer, Regan said.

An earlier series of experiments by Regan and his co-workers led to the identification of two mechanisms by which DNA is able to repair such breaks. One of these is called prereplication repair, which occurs in DNA that is already made — "old" or parental DNA. The second is postreplication repair, which occurs in DNA that is in the process of being made.

In the current study, the researchers examined postreplication

repair in normal rat cells and in rat cells infected with Rauscher leukemia virus, a mouse leukemia virus. (Leukemia is a disease of the blood-forming organs, characterized by a marked increase in the number of white blood cells.) Both the infected and normal cells were treated with 4-nitroquinoline oxide (4NQO), a potent carcinogen which is a product of coal conversion.

In comparing the cells following treatment, the research team noted two characteristics of the infected cells. First, they were more easily destroyed by the 4NQO than were in the normal cells. Second, they were much more easily transformed — caused to grow in an abnormal, unorganized fashion. Such transformed cells will induce cancer when injected back into the rat from which they were taken.

These findings, interpreted in light of their earlier work with DNA repair mechanisms, suggested to the researchers that in the infected cells, the leukemia virus was somehow interfering with postreplication repair of 4NQO damage caused to the DNA, which subsequently proved to be true.

### Repair process impeded

The mechanism for DNA replication involves the cell's separating the two DNA chains and then using each chain as a template or mold to synthesize a new chain. "In normal cells, new DNA is made in pieces or 'replicons' of a certain size," Regan said. "When the parental DNA is damaged due to radiation or chemical carcinogens, the average size of the pieces of new DNA made is much smaller after the damage occurs, and for a few hours afterwards, until the DNA damage has been repaired.

"Further study with the normal and infected rat cells indicated that in the virus-containing cells, the return to a

## Savings Plan-Personal Investment Account

Recent unit values:

	Fixed Income Fund	UCC Stock	Equity Investment Fund
December 75	11.9880	58.7886	7.8231
December 76	13.0554	59.2723	8.8167
January 77	13.1474	58.7847	8.1945
February 77	13.2400	58.8646	8.0541
March 77	13.3325	59.9204	8.0002

Note: Fixed Income Fund unit values reflect interest additions to achieve the guaranteed effective annual interest rate of 8.85% for 1976 and 8.70% for 1977. Union Carbide stock values are the average cost of stock purchases during the month plus brokerage charges. Equity Investment Fund unit values represent the month-end market value of securities held by the Fund. Dividing the total value by the number of units in the fund establishes the month's unit values—and the price at which new units are added that month.

## retirements



**Charles M. Borden**  
Paducah Power, Utilities and Chemicals  
26 years service



**Fred W. Hall**  
Paducah Power, Utilities and Chemicals  
26 years service



**Charles F. Johnston**  
Paducah Fabrication and Maintenance  
21 years service



**Eleanor P. Duke**  
Chemical Services Y-12  
26 years service



**Sebastian B. Lupica**  
Health Physics, ORNL  
35 years service



**J. C. Horton Jr.**  
ORGDG Isotopic Analysis  
31 years service



**Ralph J. Malone**  
Y-12 Electrical  
26 years service



**Roy L. Johnson**  
Guard Department Y-12  
32 years service



**Lester C. Love**  
Y-12 General Shops  
25 years service



**Fred A. Harris**  
Y-12 H-1 Foundry  
25 years service

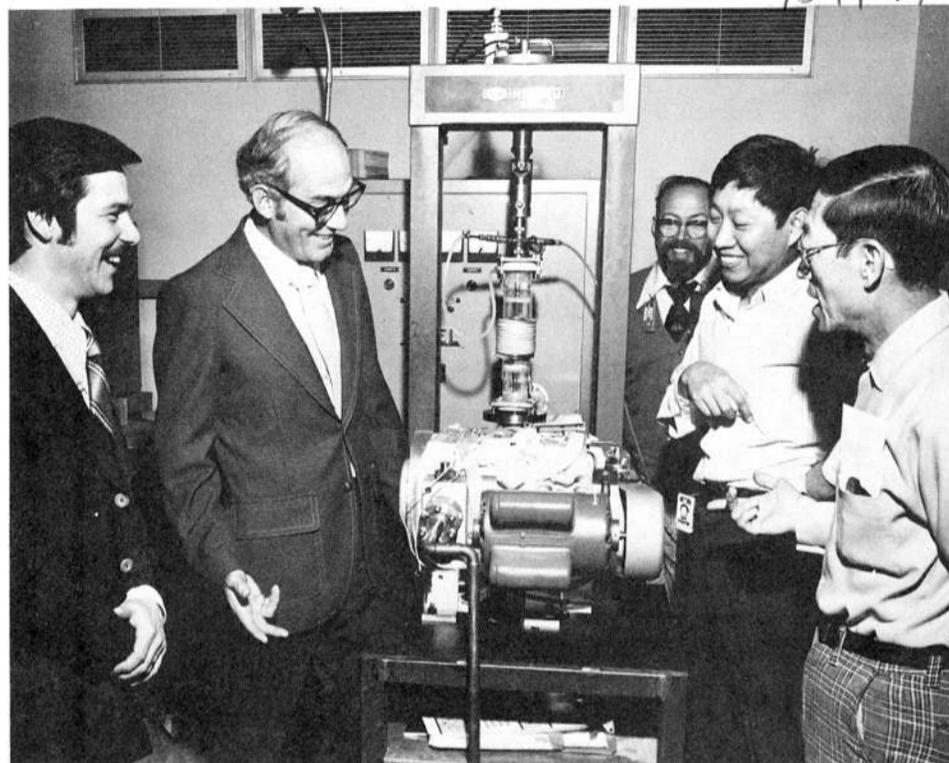


**Edwin E. Oliver**  
Y-12 Electrical  
33 years service



**Henry L. Finn**  
Y-12 Buildings & Grounds  
25 years service

# ORNL research team receives NASA group achievement award



Gathered around a high temperature, environmental test machine used in the Pioneer XI space mission are, left to right: Anthony C. Schaffhauser, Joseph A. Lenhard, Rodney W. Knight, Chain T. Liu and Henry Inouye.

ORNL metallurgists have received the National Aeronautics and Space Administration (NASA) Group Achievement Award for their contributions to the launch and operation of the Pioneer XI mission to Saturn. The award was presented by Joseph A. Lenhard, director of ERDA's Research and Technical Support Division.

The ORNL team assisted ERDA in its responsibility to NASA for development and qualification of the radioisotope heat source and thermoelectric converter which supplied electric power for the Pioneer X and XI missions.

### Embrittlement problem

Experiments by Henry Inouye and Chain T. Liu, of ORNL's Metals and Ceramics (M&C) Division, helped solve a problem of embrittlement of the isotope fuel cladding material which was detected during the final qualification testing of the system. They determined that embrittlement of the tantalum alloy cladding was due to oxygen contamination from outgassing of other system components.

Their experiments showed that minimizing the sources of contamination would delay embrittlement sufficiently to allow the cladding material to safely contain the isotope fuel if the launch were aborted. They also show that if the spacecraft failed to achieve orbit and reentered the earth's atmosphere, the high reentry heating temperatures would temper the materials and enable them to survive impact with the earth's surface.

Further contributions were made by Rodney W. Knight and Anthony C. Schaffhauser, also of M&C, in developing fabrication techniques for critical components to minimize oxygen contamination. These components were fabricated by the ORNL Plant and Equipment Division and supplied to the system contractor,

Teledyne Energy Systems. The total ORNL effort on this program was coordinated by M&C's Ralph G. Donnelly.

The Pioneer XI spacecraft, launched in April 1973, originally was targeted to fly by Jupiter. However, because of the excellent performance of the radioisotope generator, and Pioneer X (launched the previous year), Pioneer XI was retargeted for Saturn. Encounter with that planet is scheduled for 1979. The ORNL group previously received an award for their contributions to the Pioneer X Jupiter mission.

### Letter of commendation

In a letter of commendation from ERDA which accompanied the award, Douglas Bauer, director of the Division of Nuclear Research and Applications, stated:

**"The Pioneer XI spacecraft was successfully retargeted to Saturn and a prime basis for this event was the predicted performance of the SNAP-19 Radioisotope Thermoelectric Generators which continue to perform in a flawless manner. Oak Ridge National Laboratory should be proud of their significant role in this historic event. Please extend our sincere thanks to the Oak Ridge National Laboratory and the dedicated ORNL personnel who once again have demonstrated their capability to get the job done and done right."**

ORNL activities supporting the ERDA isotope-power system have expanded in recent years to development of improved alloys for isotope fuel containment and structural materials for advanced energy conversion systems. According to Schaffhauser, the program manager, these studies showed that the available materials were limited in temperature capability and allowable environments for high-performance systems. As a result, a new class of precious metal alloys was developed

# Promotions announced at Y-12

Ten promotions have been announced in the Y-12 Plant. Boyd B. Bibee has been named a senior engineering assistant in Product Certification; Don R. Carr a supervisor in the Technical Division's Gage Laboratory; Billy S. Carter a machining supervisor in Fabrication; Thomas R. Christman a safety analyst in Employee Relations; Judge D. Kile a supervisor in Fabrication; Ernest R. Martin a physical testing supervisor in Product Certification; James R. McGinnis a radiographer in Product Certification; Stanley R. Minge a machine maintenance supervisor in Fabrication; Earl T. Stair and Ralph L. Williams, supervisors in Fabrication.

Bibee, a native of Monroe County, attended Henry Ford Community College, and worked with Beaunit Fibers and Ford Motor Company before joining Union Carbide nine years ago.

He and his wife, the former Margaret Atkins, live at Route 4, Sweetwater. They have three sons, Ricky, Ronny and Rodney.

Carr, who was born in Knoxville, served in the U.S. Navy before joining Union Carbide in 1954.

He and his wife, the former Nila Jean Aldridge, live at Route 4, Burnetts Station Road, Seymour. They have three children, Donnie, Robert and Sandra.

Carter, a native of Scott County, Va., attended Emory and Henry College and the University of Tennessee. He was employed by Guthrie Machine Works and Accurate Machine Products before joining Union Carbide 14 years ago.

Mrs. Carter is the former Phyllis Ann Mallory and they live at 257 Highland Avenue, Oak Ridge. They have three children, Bill S. Jr., Teresa and Tina.

Christman, a native of Florissant, Mo., has a B.S. in engineering technology-fire/safety from Oklahoma State University. He worked with Fireman's Fund Insurance before joining Union Carbide in 1976.

He is a member of the West Knoxville Fire Department, and lives at 8006 Burchfield Drive, Oak Ridge.

Kile, a native of Bradley County, worked with Combustion Engineering and Tennessee Mill and Mine Company before joining Union Carbide 26 years ago.

Mrs. Kile is the former Marjorie Lee Thompson, and the couple lives at Route 15, Hazelnut Drive, Knoxville. They have two married daughters, Judy Evans and Sylvia Watt.

Martin, who was born in Lake City, has been with Union Carbide 23 years. He served in the U.S. Army before coming to Y-12.

(Please see page 8)

to meet the operating requirements of these advanced systems. For these accomplishments, Inouye, Liu and Schaffhauser received an ERDA letter of commendation in 1975 for development and fabrication of improved alloys of iridium for the Mariner-Jupiter-Saturn mission to be launched later this year.



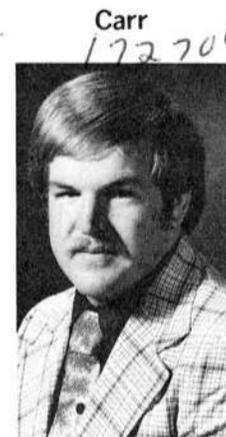
Bibee



Carr



Carter



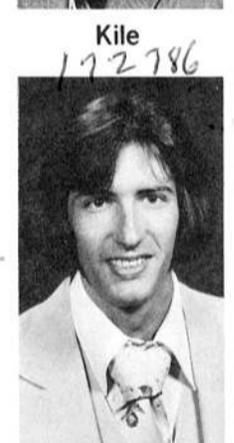
Christman



Kile



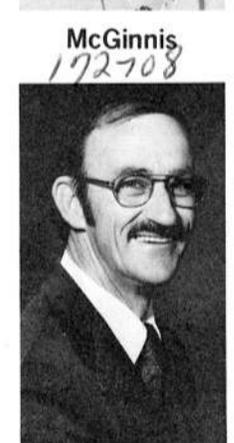
Martin



McGinnis



Minge



Stair



Williams

next issue ...

The next issue will be dated May 12. The deadline is May 4.

## recreationotes

### ORGDP bowling ...

The Hi-Rollers still roll high in the Wednesday League, pushing their last half lead to six points over the Losers. Roy Dukes, Sue's Sooners, holds the top series rolled thus far . . . a rollicking 715 handicap tally.

The Uptowners head into the stretch of the ORGDP Women's League, with a 15 point lead over the Payoffs. Melinda Tilley rolled handicap games early in April of 215, 232, 175 for a total of 622!

The Mishaps hold a slight edge in the Tuesday League over the All Steers. M. S. Ginsburg rolled a 247/268 game in early April to spark his Atoms team.

### ORNL bowling ...

The Knuckleheads grab the lead in the C League, as the Beryls faltered early in April. Their man Gray rolled a 630 scratch series to pace their winning night.

The A League looks good for the Ten Pins, out some 21 points ahead of the Zots. Coobs of the Limits rolled a 633 series in late March to pace his team.

The Bowling Aces continue their hold on first place in the ORNL Ladies League, 6½ points ahead of the Mousechasers. Jean Bangham's 523/643 series still holds high.

### Hi power rifle league ...

Y-12's Jack Huff took the first match of the Carbide Hi Power Rifle League with a 462 out of a 500. ORNL's Jack Mrochek was second with 457-4X and Bill Galyon, Y-12, followed close behind with a 457-1X.

### Canoe trip ...

The Carbide Canoe Club is sponsoring a float trip on Clear Creek in Morgan County on Saturday, April 30. Clear Creek is the largest tributary of the Obed River and is suitable for open canoes and rafts from Waltham Ford to Jett Bridge and on to Lilly Bridge. Everyone must have a life jacket and should carry a water-proofed lunch and a canteen.

Interested persons should assemble at the vacant service station on the northeast corner of West Outer Drive and Illinois Avenue in Oak Ridge by 9 a.m. on Saturday. For further information, contact Richard B. Gam-mage, home phone 483-4141, or plant extension 3-1592.

### Paducah golf ...

It's that time again when the Paducah Plant's "swinging" males go into action with the tee-off of the Men's Golf League. All of PGDP's Nicklauses, Palmers and Millers will begin play May 3 at Paxton Park's 9-hole course. Interested players may contact a division golf committee member or call the recreation department (Bell 208) to sign up for the '77 season. Play will continue every Tuesday afternoon through August 30.

### Carbide bowling ...

The Hi-Wickies, Challengers, Hits & Misses and Quetzecuatles are in a four-way tie for the top rung in the Family Mixed League, as the Odd Balls, Oops and Chokers are up in contention, too. Bob and Sandy Robson made high scores a family affair, taking scratch series honors by 589 and 514, respectively.



**SPRING PERFORMERS** — The Oak Ridge Civic Ballet will present its Spring program April 29 and 30 at 8:15 and May 1 at 3:15 p.m. at the Oak Ridge High School Auditorium. Featured in the dances will be Judy Kaplan, Franny Holleman and Amanda Rowcliff, left to right. (They are daughters of Stephen Kaplan, James Holleman and Arthur Rowcliffe, respectively.)

### Paducah tennis ...

Paducah tennis enthusiasts hit the courts April 18 as the PCT (Paducah Champion Tennis) season got underway. The system consists of both men's and ladies' ladders as well as 6 teams who will compete. The men's ladder includes an intermediate and an advanced league with East and West Divisions in the intermediate ladder. Singles players may challenge one or two steps above them but no one below them. Men who move to first place in the intermediate ladder divisions may also challenge advanced players. Team captains will notify members of matches with other teams to determine date and place. The top three places in each category will win prizes at the season's end.

Anyone interested in playing can contact Dick Coleman, Mark Trail or Glenn Young for further information.

### Y-12 bowling ...

The Ministrikes hold a four-point lead in the C Bowling League as action gets down to the wire. J. J. Henry's single of 266/295 stands high in the season's last half.

The Eightballs hold a scant lead in the Classic race, as the league has a few nights to make up due to last winter's severe weather. Ray Waldrop rolled a 279 in recent weeks (11 strikes in a row — but more on that later!). His 693 scratch series naturally stands as high for the year.

The Mixed League had its roll-off last week with the Hits & Misses, who won the league's last half, downing the Friskies by 303 pins. Team members Nancy Garrison, Mabel Tyer, Jim Young, with subs Frank and Al Adams, dedicated their win to ailing member Jim Disney, at home recouping from an appendectomy. They plan a gala outing on Watts Bar Lake May 21 to close out the season.

### Softball leagues ...

Softball gets underway Monday, May 2, at the Clark Center Recreation Park in Oak Ridge. There's still time to get on a team . . . and there are leagues for everyone . . . mixed, over 35, under 35 etc. Just give them a ring at 3-5833.

### Skeet league ...

Ken Moore, ORGDP, was tops recently in Skeet firing with a 49.040. He was followed by Carl Brewster, Y-12, with 48.100 and Bob Allstun, Y-12, with 47.947. George Kwiecien fired higher, but was under penalty due to previous winnings.

### safe thinking ...

**NECKTIE TOURNIQUET** — Those who say a necktie is impractical and useless may be in for a surprise. A necktie makes an effective bandage when tied around a wound to stem the flow of blood.

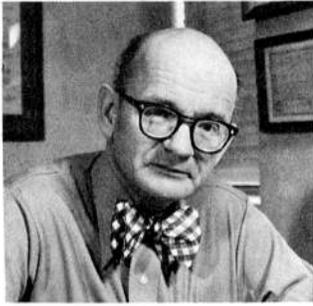


**SECOND IN NATION** — The West Knox County All-Star girls basketball team, coached by Neil Griffith of the Environmental Sciences Division and Larry Finch of the Computer Sciences Division, were the runner-up team in the 1977 Junior Pro National Tournament held in the University of Tennessee's Stokely Athletic Center in April. The West Knox County All-Stars defeated Connecticut in the quarter finals 36-20, and Kentucky in the semi-finals 49-15. The All-Stars were defeated in the finals by the defending national champions from Sylvester, Ga., 48-34. The players are from left to right: Front row, Terri Griffith (daughter of coach Griffith), Crystal Holmes (daughter of Bill Holmes, Separation Systems Division, ORGDP), Jackie Barnhart, Lisa Smith, Mary Valentine, Karen Kanipe, Jayne Finch (daughter of coach Finch). Second row, Coach Larry Finch, Janet McGivney, Dee Dee Cantwell, Donna Cooper, Melinda Johnson, Linda Hess and Coach Neil Griffith.

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## medicine chest

by T. A. Lincoln, M.D.

*(Editor's Note: Dr. Lincoln alternates his regular column with "The Medicine Chest," where he answers questions from employees concerning health in general. Questions are handled in strict confidence, as they are handled in our Question Box. Just address your question to "Medicine Chest," NUCLEAR DIVISION NEWS, Building 9704-2, Stop 20, Y-12, or call the news editor in your plant, and give him or her your question on the telephone.)*

**QUESTION:** "Would you do a thing on hypochondria? I know people (particularly an aunt of mine) who have 'enjoyed' poor health for years. Nobody enjoys hearing about others' ailments. I also know a person who reads **Merck Manual** all the time, so he can come up with new diseases."

**ANSWER:** A hypochondriac is generally thought of as an individual who constantly complains about various symptoms and ill health, yet doctors can find little or no organic pathology. Hypochondriasis is defined by the American Psychiatric Association as a "preoccupation with the body and fear of presumed disease of various organs . . . (that) persists despite reassurance."

Hypochondriasis can range from a symptom of a serious mental illness to a method of starting a conversation at a cocktail party. It has been estimated that three out of four adults have some unpleasant symptoms each month which are sufficient to cause them to take some definable action, such as the use of a medicine, getting some extra rest, changing their diet or consulting a physician. When a person is insecure, anxious, unhappy or under some emotional stress, these usually mild symptoms assume a greater significance and may lead to a conviction that a definite disease is present.

### 'Happy' hypochondriac

Alistair Cooke, the well-known British author and TV personality, presented a lecture on this subject in December, 1972, to a packed auditorium at the Royal College of Physicians in London. His talk, "Hypochondria — the Layman's Specialty," was later published in the journal of that society and has been frequently quoted since. Dr. Cooke (an L.L.D., not an M.D.) said at the beginning he thought he was well qualified to speak on the subject because he was a self-confessed, but "happy," hypochondriac.

Although Cooke's classification of the types of hypochondria did not impress psychiatrists, it got a receptive response from most physicians. He felt there were fatalistic hypochondriacs who took an instinctively gloomy look on everything and believed in "instant" cures as well as damnation. They were demanding, dramatic and impossible to reassure.

### 'Smart' hypochondriac

He described a group which he called "the smart hypochondriacs"

who read all the latest health articles and promptly developed the diseases described therein. They usually took numerous medicines, either from their physicians' prescriptions or various patent medicines and vitamin preparations. He said that in spite of their many symptoms they remained remarkably fit.

He described with sympathetic humor the husband who took his wife tenderly to the doctor week after week because of headaches, spells, sleeplessness, etc., and expressed concern both when she was well and when she was "sick." He died unexpectedly and her symptoms promptly vanished. Her symptoms had been obviously used to hold her husband's love and attention.

### Symptoms contagious

Cooke also described a hypochondriac wife who complained so much that the husband began to develop symptoms. She then had concern about his health, so the two of them leaned on each other as they tottered through their twilight years, complaining every day.

The hypochondriac uses symptoms to meet a personal emotional need. It may be love, attention, sympathy or just freedom from anxiety. In many cases it is unwise to work too hard to prove there is no cause for complaints. Patient, sympathetic understanding and a minimum of medical treatment usually is all that is needed. Unfortunately, hypochondriacs sometimes get sick so physicians often feel obligated to rule out significant pathology. It is this search for the usually nonexistent disease that keeps the health profession so lucrative and hospitals so busy!

**QUESTION:** "Would you consider running an article in your column sometime on the 'carpal tunnel syndrome'? As I understand it, this illness is many times associated with secretaries, typists, etc., after many years of typing."

**ANSWER:** This syndrome is caused by pressure, inflammation or irritation of the median nerve in the wrist. It is therefore almost always confined to one hand. The first symptom is usually an unpleasant pins-and-needles sensation on primarily the palmar surfaces of the thumb, index, middle and approximately one-half of the thumb side of the ring finger. The victim notices that using the hand increases the symptoms and resting it usually leads to temporary relief. A valuable

## Here we grow again . . .



**OWI OFFICES NEAR COMPLETION** — Mid-summer is the projected completion date for the Office of Waste Isolation (OWI) office building, located just south of Y-12's North Portal parking lot. The two-story brick veneer building will provide office space for 56 staff members, as well as two conference rooms and a map room.

## anniversaries

### Y-12 PLANT

#### 30 YEARS

J. B. Quinn, Guard Department; Newton L. Waters, Materials Control; Ernest F. Greer, Fire Prevention; Jack L. Finchum, Utilities Administration; and George F. McPherson, Guard Department.

#### 25 YEARS

Lewis B. Eggers Jr., George D. Smallwood, William B. Crowder, Dennis L. Moore, Ralph B. Stonecipher, Jo B. Isham, Spurgeon H. Guy and Arville G. Hardwick.

diagnostic test is to open and close the hand many times. This motion almost always brings on the tingling sensation.

### Carpal tunnel syndrome

Sometimes the physician can feel a swelling in the wrist on one of the tendons which flex the fingers. When the swollen tendon moves back and forth as the hand is opened and closed, the tingling occurs when it rubs on the nerve. In the under side of the wrist, the flexor tendons are bunched together. You can see this if you will flex your wrist and then move your fingers up and down.

The transverse carpal ligament passes over this bundle near the hand and forms a tunnel, called the carpal tunnel. Between the ligament and the bundle is the median nerve. When the ligament or the tendons have been injured or have become inflamed or chronically worn, they become roughened or enlarged. When the enlarged tendons move back and forth in the tunnel, they irritate the nerve.

Repeated and rugged use of the hands when they are held in extension tends to grind the median nerve against the tunnel. The classic example is scrubbing the floor on your hands and knees. (But who does that any more!)

I am not aware that this syndrome appears in typists unless they have some inflammatory process such as rheumatoid arthritis or an old injury. Most typists keep their hands relatively straight or only slightly flexed when they type.

#### 20 YEARS

Betty S. Martin.

### PADUCAH

#### 25 YEARS

George Koster, Lucian W. Holman, Joseph A. Lovelace and Clifford R. Adams.

Forrest P. Smith, William O. Boren, James R. Morton, Samuel G. Beekman, Knox G. Cherry, William J. Kelly, John S. Triplett, Beach P. Jones, Louis G. Bourgeois Jr. and Robert W. Murray.

### ORGRP

#### 30 YEARS

Troy L. Curnutt Jr., Chemical Operations Administration; and Geneva A. Tedder, Finance and Materials Division.

#### 25 YEARS

Martha H. Rinehart, James P. Lawless Jr., Emily C. Stone, Paul L. Hicks, Billy M. Heidel, Ralph G. Knight Jr., Leon D. Mathis, James E. Runkles, Beryl W. McCollum and Walter R. Rainey.

#### 20 YEARS

John G. Million, James D. Luigs, Kathleen W. Miller and Thomas E. McCauley.

### ORNL

#### 30 YEARS

John C. Griess Jr., Metals and Ceramics Division; and Samuel U. Hamric, Instrumentation and Controls Division.

Charles D. Bopp, Chemical Technology; Clyde E. McFarland, Operations; Bert G. Catron, Employee Relations; Thomas F. Roberts, Plant and Equipment; James L. Sellers, Solid State; and Howard C. Graham, Operations.

#### 25 YEARS

William T. Wolfe, Gordon W. Jones, Ross K. Godsie, Thomas A. King Jr., Kathleen I. Webb, Robert C. Satterfield, James G. Clem and Lamont C. Bate.

#### 20 YEARS

James W. Snider, Billy J. Jones, Harold F. Hartman, John T. Robinson and William T. Clay.

Imogene G. Loope and Walter D. Bond.

## Benefit reports

(Continued from page 1)

retirement in order to obtain the same prospective monthly income as provided from Union Carbide's Pension Plan.

### Value of benefits

The final section of the benefits report is devoted to the value of each employee's benefits. It points out that the company pays the cost of temporary disability benefits while employees are disabled. Pension Plan benefits, dental expenses and basic medical care coverage for employees and their eligible dependents also are paid in full by the company.

The company and the employees both contribute to the cost of basic Group Life Insurance, Major/Special Medical coverage, Savings Plan and Social Security.

The annual total cost to the company for each employee's benefits is shown in this section.

In all these categories, these benefits mean money for the employee and family. The report is structured to show what the entire benefits program looks like and how they all work together to provide a sound, comprehensive program of financial protection for employees.

If you do not receive your personalized copy of the "J. Q. Carbide" report, "Your Benefits and Union Carbide," or if you have any questions about any of the figures, your Benefit Plans office will be glad to help you.

## Infected cells

(Continued from page 4)

state of making new DNA of normal replicon size was greatly retarded, indicating interference with post-replication repair."

Regan added that the leukemia virus may have acted as a cocarcinogen — an agent which does not itself cause cancer, but which can facilitate the action of a carcinogen — by interfering with postreplication repair.

The researchers have not yet determined whether this phenomenon is limited to the interaction of the Rauscher virus and 4NQO, or whether other viruses may act as cocarcinogens as well. Plans for future experimentation to help answer this question are underway.

Regan and his associates in ORNL's Biology Division have been involved since the mid-1960's in the study of DNA repair mechanisms. Working with Regan on the leukemia study, which was sponsored jointly by ERDA and the National Cancer Institute, were Raymond Waters, a postdoctoral fellow from Wales currently working in ORNL's Biology Division; and Nirmal Mishra, Noel Bouck and Giam-piero DiMayorca of the University of Illinois School of Medicine.

## Disaster Survival Test set on TV Sunday, May 1

In 1965, safety-minded Americans gave record-breaking response to a television show, the National Drivers Test. The program won the coveted Peabody Award and other awards, and was called "the highest-rated public affairs program in the history of TV," generating more mail than any program had before.

The National Safety Council now has set the stage for the National Disaster Survival Test, which will be concerned with all types of safety — public, home and industrial, as well as traffic — all within the context of disaster, large and small.

The program will be aired Sunday, May 1 at 8 p.m. (EDST) over the NBC Television Network, billed as its 90-minute "Big Event." (It will be telecast in Paducah at 7 p.m. CDST.)

Scoring sheets for the test will appear in weekly and daily newspapers in the area, and will also appear in this week's TV Guide.

The program will be aired in Knoxville over WATE-TV, Channel 6; and in Paducah over WPSD-TV, Channel 6.

## Nuclear Division News

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Oak Ridge, Tenn. 37830

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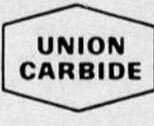
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### PADUCAH

Keith Bryant, Bell 369

 Member,  
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## safe thinking . . .

**NYLON FAN BELT** — A disabled car was in a risky position parked on the shoulder of a road . . . but not for long. The driver, a young woman, recognized what was wrong when she looked under the hood — the fan belt was broken.

Resourceful as well as knowledgeable, she fashioned a makeshift belt with her panty hose. It worked long enough to get her to the next service station.

## Palmer, Vath appointed to Waste Isolation posts

Two appointments in the Office of Waste Isolation (OWI) have been announced by Clayton D. Zerby, director. James R. Palmer is named manager of schedules and controls, and James E. Vath is appointed manager of program planning. Both will be in the Planning and Analysis Department of OWI.

A native of Minnesota, Palmer joined Union Carbide last year after serving as president and general manager of Elographics, Inc. He had previously been with the Hughes Aircraft Company. He holds B.S. degrees in aerospace engineering and engineering operations from Iowa State University, and an M.B.A. from Stanford University.

He and his wife, Jane, live at 109 Woodridge Lane, Oak Ridge. They have two children, Amy and Stephanie.

Vath, a native of Cincinnati, has been with Union Carbide four years. He headed the fuel studies group in the Strategic Planning Department of Operations Analysis and Planning Division. Before joining Union Carbide, he worked for National Lead and was representative to AECOP. He is a graduate in chemical engineering from the University of Cincinnati, and has done graduate work there.

Mrs. Vath is the former Nancy Hawkins, and the couple live at 354 East Drive, Oak Ridge, with their son, David.



Palmer

Vath

## Y-12 promotions

(Continued from page 5)

Married to the former Joan Slover, he lives on Cumberland View, Lake City.

McGinnis was born in Oak Ridge, and attended UT and is graduated from the Training and Technology project in Y-12. He worked as a roofer and an electrician's helper before joining Union Carbide last year.

He and his wife, the former Cathy Jones, live at 101 Nesper Road, Oak Ridge.

Minge was born in Lenoir City, and served in the U.S. Army and was employed by Swift Manufacturing Company before joining Union Carbide in 1959.

Mrs. Minge is the former Peggy Jackson, and they live at Route 18, Ball Camp Pike, Knoxville. They have three sons, Barry, Larry and Brian.

Stair, a native of Clinton, has been with Union Carbide 23 years, working most of that time as a machinist in ORGDP. He is a U.S. Army veteran, and has attended UT.

He and his wife, Mary, live at Route 1, Clinton. Their daughter Cynthia Jane is attending UT and works at ORGDP.

Williams was born in Loudon County and is a graduate of the TAT project. He has been with Union Carbide nine years.

Mrs. Williams is the former Mary Chamberlain and they live at Route 2, Lenoir City. They have two children, Ricky and Sherry.

## patents granted . . .

To Ronald L. Beatty, of ORNL, for "Process for Preparing Metal-Carbide-Containing Microspheres from Metal-Loaded Resin Beads."

To Charles F. Coleman and William J. McDowell, both of ORNL, for "Liquid Film Target Impingement Scrubber."

To James O. Steigler, James M. Leitner, Arthur F. Rowcliffe, and Everett E. Bloom, all of ORNL, for "Austenitic Stainless Steel Alloys Having Improved Resistance to Fast Neutron-Induced Swelling."



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## safety scoreboard

Time worked without a lost-time accident through April 21:

Paducah	64 Days	798,800 Man-Hours
ORGDP	108 Days	3,516,735 Man-Hours
Y-12 Plant	65 Days	1,962,000 Man-Hours
ORNL	217 Days	4,407,183 Man-Hours

