UNION CARBIDE

—Y-12 BULLETIN

A Newspaper For Y-12 Employees of Union Carbide Corporation—Nuclear Division

Vol. 22 — No. 15 | OAK RIDGE, TENNESSEE | Wednesday, April 10, 1968

Alvey To Give Talk At ASTME Conference

Annual Exposition Set In Philadelphia

Harold E. Alvey, Dimensional Inspection, will present a paper entitled "Numerical Control at an AEC Installation" at the American Society of Tool and Manufacturing Engineering's 1968 Tool Exposition and Engineering Conference. The conference is set for April 29 through May 4 in Philadelphia.

Alvey spent most of his early life in Wood River, Illinois, with Olin Mathieson, Inc., where he served his apprenticeship as a tool and die maker prior to World War II. He enlisted in the U. S. Air Force and served four years during World War II. He then returned to Olin Mathieson where he remained until 1951. In July of that year he joined Union Carbide as an experimental machines. He was promoted to his first assignment in supervision in 1954.

He was transferred to the Oak Ridge Gaseous Diffusion Plant as a machine shop supervisor in 1961, and returned to Y-12 in March, 1963, as a machine shop department head in the Production Machining Section of the Fabrication Division.

He transferred to the Technical Division in July, 1966 and became department superintendent of Dimensional Inspection last November.

Alvey joined ASTME as a charter member in 1953 and became chairman of the local chapter in 1960. He was a member of the National Program Committee and local chairman of the honor awards committee in 1965.

He attended the University of Tennessee from 1953 to 1958, majoring in Industrial Engineering.

Alvey is married to the former Frances Mercer. They live at 100 Orchard Circle, Oak Ridge. They have two daughters . . . Mrs. Pemela Harmon, Jefferson City; and Brenda, a sophomore at Oak Ridge High School.

Harold E. Alvey

Germany's Zichendraht Guest Physics Speaker

W. Zickendraht, Universitat of Marburg, Germany, will lead this week's Physics Division seminar. His subject will be "Configuration Space Approach to Three- and Four-Particle Problem."

The seminar is set for today, Wednesday, April 10, at 3:15 p.m. in the East Auditorium of ORNL's 4500 building.

SAFETY SCOREBOARD

The Y-12 Plant Has Operated

16 Days Or 444,000 Man-Hours

(Unofficial Estimate)

Through April 7

Without a Disabling Injury

Safety At Home At Work, At Play

RESA Will Hear Civil Defense Man

The Oak Ridge Chapter of the Research Society of America will present James C. Bresee, project director for the Civil Defense Research at Oak Ridge National Laboratory, in a lecture next week. The RESA meeting is set next Wednesday, April 17, at 8 p.m. in Jefferson Junior High School Auditorium.

Bresee will discuss The Sentinel System in a talk on "Strategic Defense and Future City Design."

In the talk the purpose of strategic defense will be discussed and its components identified. Along with the Sentinel System advanced civil defense as a component of future strategic defense programs will be discussed with an emphasis on urban dual-use tunnels. City design changes will be reviewed which involve increased use of the subsurface for transportation, utilities, and materials distribution. Finally, the concept of a nuclear urban energy center and its effect on city design will be briefly presented.

The important position that ORNL is playing in the long range planning for our future will be worked into the lecture.

Bresee holds MS and BS degrees in chemical engineering from the University of Illinois and was awarded a ScD in chemical engineering from Massachusetts Institute of Technology in 1953.

He came to ORNL after working at Argonne National Laboratory and teaching at the University of Illinois and MIT.

The public is cordially invited to next week's RESA meeting, and should understand the lay language to be used in the interesting presentation.

Good Friday, April 12 Is Holiday In Y-12

Friday, April 12, is an official holiday for Y-12.

No employee will be required to work unless his presence is required for the continuous operation or security of the plant.

WALL STRIPPER

A new wallcovering material is being used these days. Made of spunbonded olefin, it's more durable than most wallpapers and, when the lady of the house decides to redecorate, it can be pulled off the wall with ease.

UCC Plans New Major Research Facilities

★ ★ ★ ★ ★ ★

Union Carbide is continuing to pursue a broad-based research and development program covering the whole range of modern science from studies of the basic life processes to the development of new forms of optical communications through latest technology.

Expenditures for this purpose amounted to $85 million last year, according to the annual report.

Research and development continue at Union Carbide.

Union Carbide will begin construction immediately of major new facilities at its Tarrytown, New York, Technical Center, Kenneth Rush, president of the corporation, has announced. The project, which includes a unique architectural concept, will cost over $20 million. It will result in tripling the number of scientists, engineers, technicians, and supportive personnel employed at the Center, bringing the number to about 1500.

Ready Next Year

To be completed during 1969 are two buildings, one of which is a research and development laboratory of Union Carbide's Linde Division for work in environmental and industrial gases, molecular sieves, and metalworking processes and equipment. The second building is a 1200-foot-long "spine" building developed by architects Vincent G. Kling and Associates. Its purpose is to house supportive services for all the facilities on the site, and to provide space for computer operations and office facilities. At the same time, it will unify the site physically and architecturally.

The corporation's 300-acre site is bisected by Old Saw Mill River Road. The "spine" building is designed to span this road and to link the two parts of the property. Already located on the site are the corporation's Research Institute (for basic research) and three other large laboratories for experimental work in chemicals and plastics, silicones, and automotive products. The "spine" provides maximum flexibility for future expansion of the Center. It can be extended in either direction and other laboratories can be connected to it.

Roadway Beneath

Motorists traveling between White Plains and Tarrytown on Old Saw Mill River Road will pass beneath the "spine," which will house a large number and variety of site services, including cafeteria, library, analytical services and laboratory supply facilities, as well as the corporation's largest computer center. The Tarrytown Technical Center is located in Westchester County in the towns of Greenburgh and Mount Pleasant, immediately east of the Saw Mill River Parkway.

"Our long-range plan for developing the Tarrytown site," said Rush, "will make our Technical Center there one of the largest and most cohesive research and development centers in the U. S."

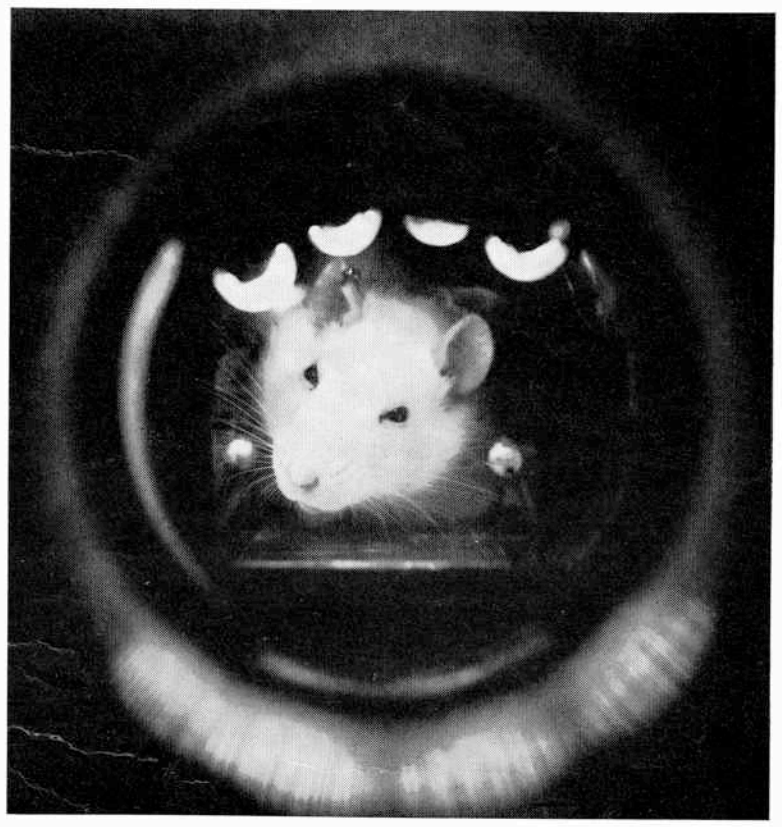
Rush cited the decision to locate the new research and development facilities at Tarrytown as a further step toward bringing Union Carbide's research groups together. "Many of our major technical projects cross Divisional lines," he said. "This consolidation provides the opportunity for creative minds, working in different scientific disciplines, to more easily exchange ideas and techniques. The Center's proximity to the cultural, educational, and research establishments of the New York Metropolitan area will foster the professional growth of our scientists and engineers," Rush added.

The new Linde laboratory will bring together diversified research and development activities now located at three widely separated facilities:

- Gas Products Development

Continued on Page 4

LINDE RESEARCHER STUDIES PHENOMENON of Superconductivity. The Laboratory device is cooled to minus 452 degrees Fahrenheit by liquid helium in super-insulated container.



MICE PRECEDE MEN in bioresearch and gas physiology research conducted at Linde laboratories in connection with development of life support systems for spacecraft and advanced diving systems.

The Bulletin

Published Weekly For The Y-12 Employees Of UNION CARBIDE CORPORATION

UNION CARBIDE

NUCLEAR DIVISION

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Member *Appalachian Industrial Editor's Association*

American Association Industrial Editors

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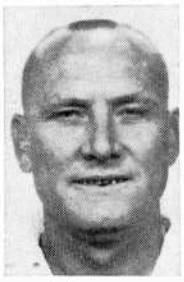
Johnson Rites Held In Knoxville

Electrical regretfully reports the passing of Mr. James F. Johnson Jr., who died Sunday, March 31 in a Knoxville hospital. He came to Y-12 in 1951 after working with Southern Armature Company, Sanford-Day Iron Works, and in the Western Avenue Market.



Johnson

The Johnson home was at 3344 Division Street, Knoxville. Surviving are his wife Mrs. Carrie E. Johnson; son Floyd N.; daughters Mrs. Juanita Newberry; Mrs. Sue Smith; mother Mrs. Martha Ellen Johnson; brothers, Henry N., Albert and Andrew; sister Mrs. Maybelle McCulley, and six grandchildren, all of Knoxville.

Funeral services were held Tuesday, April 2, at the Marble City Evangelical United Brethren Church with the Reverends William Millsaps and Kenneth Huff officiating. Masonic rites followed at the grave in the Highland Memorial Cemetery.

Deepest sympathy is extended to the Johnson family.

Camera Club Will Hear Special Guest

Members of Carbide Camera Club are currently exhibiting examples of their photographs at Oak Ridge Public Library. The show includes both black and white and color prints and may be seen through the middle of May.

The Club's next regular meeting will be Tuesday, April 16, at 8 p.m. in the Educational Building of First United Presbyterian Church, Turnpike and Lafayette, Oak Ridge. Alfred Gras, former **Chicago Tribune** photographer, will discuss color photography and printing. Gras' special interests during his career as a photographer were color fashion and portrait shots.

Color slides and black and white and color prints entered in the April competition, "Modern Art a la Camera," will be judged.

Y-12's Bill Harper took prizes in all three categories of the March open competition. Additional winners were Biology division's Fred deSerres, Conrad Richter, Stanley Liebo, and Evelyn Lorenz. Bob Stephenson and Dick Lorenz of X-10 also placed.

AUTOS VS. PEOPLE

In America, automobiles occupy more space than people. No wonder you can never find a parking place!

71 Students Finish TAT Vocational Course March 29

A total of 71 students from 71 vocational - technical schools throughout Tennessee completed a special 14-week course Friday, March 29, conducted in the Training and Technology Project in Y-12.

George W. Oliphant Jr., electrical and electronics supervisor in Y-12, and Ben A. Hirst Jr., Tennessee Director of area vocational-technical schools, addressed the students at the ceremony. The students, all of whom had approximately one year of vocational training in their area schools before entering the TAT program in December, will return to the schools for completion of their training.

The 14-week "coupled training program" is conducted by TAT in cooperation with the Tennessee Division of Vocational-Technical Education and is intended primarily to enable TAT to identify industrial resources that can be used in the training of manpower.

TAT has been conducting experimental training programs for workers and vocational-technical teachers since June, 1966. In addition to the coupled programs in machining, mechanical engineering technology and industrial electronics, the project conducts a regular 42-week training program in five skill and technical areas. The regular program requires no previous vocational schooling by participants.

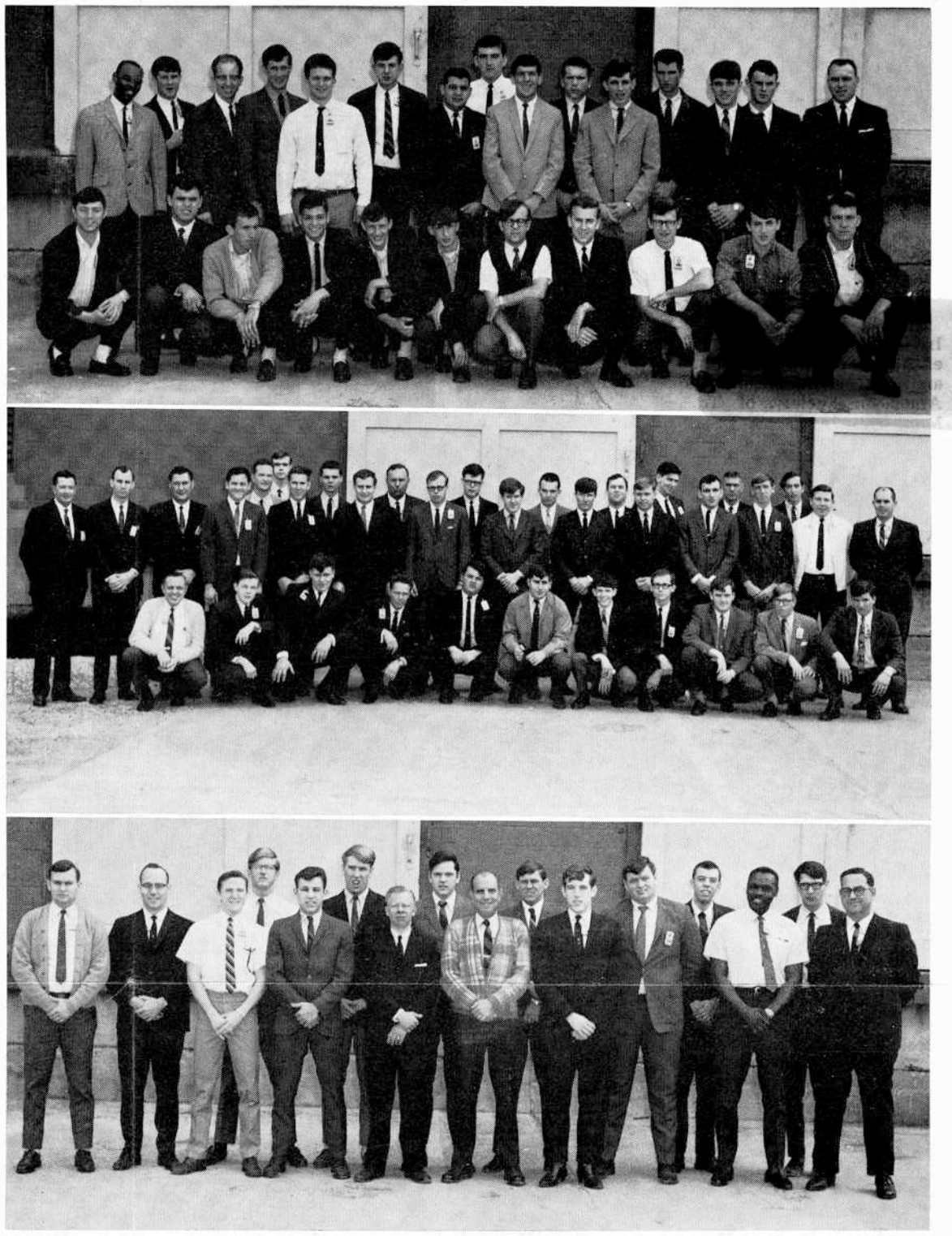
The training is conducted by personnel of Union Carbide Corporation - Nuclear Division using facilities at the U. S. Atomic Energy Commission's Y-12 Plant. Also participating are Oak Ridge Associated Universities which provides administrative services, the Tennessee Department of Employment Security, the University of Tennessee and organized labor.

TAT is supported by the U. S. Department of Labor and the U. S. Office of Education.

Completing the special courses in Drafting were Edward M. Carroll, Athens; Benjamin F. DeFord, Loudon; Stephen A. Lyle, Cleveland; Edward Joe Fields, Kingsport; Roday A. Brown, Dickson; James A. Davis, LaFayette; James A. Hudson, Gallatin; James W. Raines, Algood; Donald E. Lancaster, Paris; Robert D. McElwain, Smithville; Alex Brown, Memphis; Harold J. Menietto and Joe H. Wilkerson, also of Memphis; and Jere W. Cooper and J. H. Nicks, both of Newbern.

In the Electronics area were Terry K. Kaylor and James B. Watson, Cleveland; Joe M. Alexander, Olive Hill; Benny L. Doyle, Sardis; James L. Hicks, Perryville; Jerry N. Birdwell, Red Boiling Springs; Ronnie D. Cherry, Hartsville; Richard L. Griffin, Watertown; Hugh G. Hale, Gallatin; Tony D. Langford, Red Boiling Springs; Leonard S. Newsome, Lebanon; John M. Evans Sr., Elizabethton; James H. Bilbrey, Livingston; Michael W. Palmer, Silver Point; George W. Scheving, Monterey; Roy D. Stutlts Jr., Wilder; Tim E. Tayse, Livingston; Archie S. Thomas, Baxter; Lynn D. Compton, Hollow Rock; Michael Seawright, Paris; Danny L. Stanfill, Clarksburg; Larry Sutton, Cedar Grove; Stephen A. Moss, Sparta; Melvin F. Kolwyck, and Bobby G. Walker, Dyersburg; Roger L. Griffith, Lancing, and Richard L. Sampsel, Coalfield.

In Machining graduates were Raymond R. Giles, Loudon; Roger S. Moses, Athens; William D. Francisco, Kingsport; Richard L. Hodges, Bristol; Jerry W. Malone, Bluff City; Larry Bowling, Olive Hill; Joe N. DeLaney, Adamsville; James C. Hilton, Savannah; Robert H. Perkins, Dennis Duron Smith, both of Adamsville; William D. Duke, Dickson; Clayton N. Jackson, Charlotte; Dennis R. Petty, Vanleer; Joe R. Burton Jr., Ronald W. Lackey, and Mahlon Graves, all of Mt. Juliet; Jimmy L. Savage, Livingston; James R. Spicer, Cookeville; Charles J. Wilson, Alpine; Danny H. Lowry, Paris; Steve D. Morris, Milan; Roger D. Smith, Henry; Duane M. Carter, Wallin; Elbert R. Grooms, Palmer; James L. Smith, McMinnville; and Terry L. Whitson, Sparta.



MARCH 29 MARKED ANOTHER MILESTONE for the TAT Project in Y-12. The above 71 students completed a 14-week course in the project in drafting, electronics and machining. They represented 71 vocational-technical schools throughout the state of Tennessee.

Local Chemical Society Names 1968 Officials

The Analytical Group of the East Tennessee Section of The American Chemical Society recently elected new officers. E. J. Spitzer 1967 chairman, announced the results of the new election.

Named chairman was J. C. Barton, supervisor of laboratories at the Oak Ridge Gaseous Diffusion Plant; Joe H. Stewart Jr., chairman-elect, supervisor in the Production Analysis Laboratory, Y-12; and Dr. J. M. Dale, secretary-treasurer, assistant leader in the Reactor Projects Group of the Analytical Chemistry Division at Oak Ridge National Laboratory.

Campbell Services Held In Oak Ridge

Chemical Services sadly marks the passing of Mr. Noble H. Campbell, who died at his Oak Ridge home Tuesday, April 2.

Mr. Campbell was born in Maynardville, and had worked on his family farm, and at Berkline Corporation, Morristown, before coming here in May of 1944.

Campbell

The Campbell home is at 603 Robertsville Road.

Survivors include his wife Mrs. Georgia Cox Campbell; and a son Basil M. Campbell, both at home; sons Reverend Harold Campbell, Clarksville; and Captain Doyle E. Campbell, in the U. S. Air Force, Hampton, Virginia. Other survivors include his mother Mrs. W. R. Campbell, Morristown; one brother, Conrad Campbell, Newport; sisters, Miss Virgie Campbell, Morristown, Mrs. Hal Hodgson, Morristown; Mrs. Harrell Pendleton, also of Morristown; half-brother Charles Campbell, Maynardville; half-sister Mrs. Martha Perry, Powder Springs; and three grandchildren.

Funeral services were held Friday at 1:30, April 5, at the Robertsville Baptist Church, where the deceased was a longtime active member. The Reverend W. C. Summar officiated at the rites. Burial followed in the Jarnigan Cemetery, Morristown.

Sincere sympathy is extended to the Campbell family.

Current Badge Swap Ends 11 p.m. Tonight

The current badge exchange ends today, Wednesday, April 10.

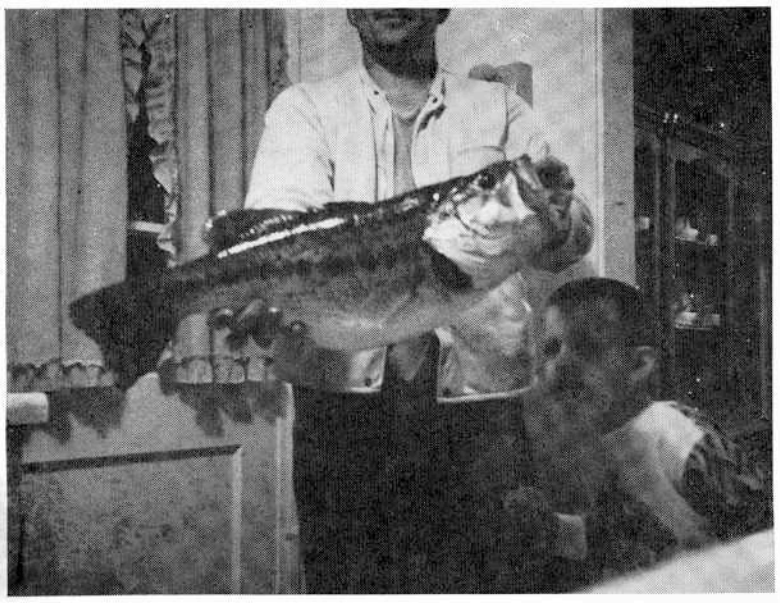
If you do not have a yellow border across the bottom of your badge, the guards will not honor your identification at the gates tomorrow.

Employees who have been on vacation or off for any reason may pick up their new badges at Badge and Pass, Building 9704-2.

IN THE BLACK

The small principality of Liechtenstein sells enough of its finely engraved stamps to philatelists all over the world to pay for the operation of its government. There is no army, only a police force of 50.

Nothing said, nothing disclosed.



LITTLE SPENCE FERGUSON inspects the giant largemouth bass his dad, Spencer Ferguson, Beta Four Heavy Machine Shop, caught recently. The monster was pulled from the waters of Norris Lake, the victim of a night crawler. In all the excitement photographer Donna cut the angler's head off, but the big fish was perserved for posterity above.

First Golf Play Set April 27

Dust off those old irons and woods, men . . . that time has come again!

The first Golf Tournament of the brand new season is within sight even now. Kick-off for duffers will take place bright and early Saturday, April 27, at the lakeside course of Southwest Point, Kingston. Greens fee at that handsome course is announced at $3, and an application appears in this issue of the Bulletin.

Entries will be taken through 4:30 p.m. Wednesday, April 24, and tee-off times will be drawn by lot the next morning at 8 a.m. Foursome leaders will be notified by Recreation the exact time of their tee-off schedule.

The Recreation Department asks that as many as three be included on the entry. In other words, they will not accept a blank with less than three on it. Single golfers should call 3-7109 to get in a foursome that will be made up.

The entry form will be repeated in next week's paper.

Retired employees from Y-12 are heartily welcomed at all Y-12 events. Many retirees are among greens-lovers, so if it's golf that you like, come on out. Retired employees are always welcome at Y-12 recreational activities.

SLEEP A-NIGHTS

Too often a clear conscience simply means that one has a poor memory.

Rounders Lead C Race By Two

The Rounders lead the C Bowlers with a two-point edge, thanks to a four point win over the Badgers last week. Other big wins went to the Big Five over the Rollmasters, and the Invalids by the Rodders.

Taking three were the Parbusters by the HiLifers, the King Pins over the Sunflowers and the Fireballs by the Royal Flush.

Norm Jarvis, Big Five, rolled a 237 single scratch game. Otis Rackley, Rounders, posted a 253 handicap single. Jarvis bowled high series . . . 674 scratch, 692 handicap.

The Big Five put a 924 scratch single count up . . . and the King Pins rolled a 1045 handicap singles count. The Big Five boasted a 2749 scratch series and their 3064 handicap series tied with that of the Parbusters.

C Leaguers will meet next Monday, April 15, after the position roll-off for an organizational start toward next year's bowling. All present team captains are urged to stay for the meeting.

League standings follow:

Team	W	L
Rounders	37	15
Parbusters	35	17
Sunflowers	31	21
Badgers	31	21
Big Five	28	24
HiLifers	25½	26½
King Pins	25	27
Fireballs	22	30
Rodders	20½	31½
Rollmasters	20	32
Invalids	19	33
Royal Flush	18	34

Adequate plant security depends on you.

Tee-Off Time Application For Southwest Point (Kingston) Tourney

Saturday, April 27

Foursome

_____, Leader

_____

_____

_____

Leader's office phone _____

Home phone _____

Tee-off Time Preferred _____

Fill out completely and return to the Recreation Office, Building 9704-2. Deadline for entering is 4:30 p.m. Wednesday, April 24. Tee-off times will be drawn the next day, Thursday, April 25 at 8:30 a.m.

Roses 'N Thorns Take Mixed Crown

The Hacketts and Worleys, who make up the Roses 'N Thorns, finished bowling in the Mixed League last week in big style. They not only took the McSprays for four points in the position roll-off, but also captured total pins, to take the league championship. (The McSprays, who won the league's first half agreed to let the match go as the championship roll-off too). The R 'N T team took game one 745 to 671; game two 732 to 711 and game three 812 to 735 . . . for a total of 2289 to 2117 . . . or for 172 pins!

Other team action saw the Rollers take second place in the league's last half by beating the Hits & Misses for four . . . and the Alley Cats defeated the Goofers for the same score. The Twisters took three from the Mustangs.

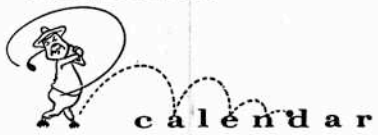
Bill Hackett, Roses 'N Thorns, posted high singles . . . 202 scratch, 225 handicap. His 506 scratch series was high also. Jim Thompson, Twisters, posted a 587 handicap series. Jeri Kobisk, Alley Cats, captured a 180 scratch, 226 handicap game. Ethel Spray, McSprays, rolled a 490 scratch series . . . and Alice Forseman, Mustangs, mustered a 588 handicap series.

The big champs rolled highs of the night . . . singles of 662 scratch, 812 handicap . . . series of 1842, 2289.

Final standings follow:

Team	W	L
Roses 'N Thorns	41	19
Rollers	33	27
McSprays	31	29
Hits & Misses	31	29
Twisters	29	31
Mustangs	27	33
Goofers	24	36
Alley Cats	24	36

Recreation



Friday, April 12

GOOD FRIDAY, Holiday for Y-12ers.

Monday, April 15

BOWLING: C League, Position Roll-Off, 5:45 p.m. Ark Lanes.

PHYSICAL FITNESS: (For Women): 7:30 p.m. Oak Ridge High School Gym.

VOLLEYBALL: Beginning 6:30 p.m. Oak Ridge High School Gym. Court A: Old Men vs. Neophytes; Charley Browns vs. Beavers; Naughts vs. Set Ups. Court B: Mix Ups vs. Ecobums; K-25 Gashouse Gang vs. K-25 Hawks; Mountaineers vs. Dirty Half Dozen.

Tuesday, April 16

PHYSICAL FITNESS: (For Men) 7:30 p.m. Oak Ridge High School Gym.

CAMERA CLUB: 8 p.m. First Presbyterian Church, Oak Ridge.

Thursday, April 18

BADMINTON: Informal Play employees and spouses, 7:30 p.m. Jefferson Junior High School.

ARCHERY LEAGUE: 5:15, 6:15, 7:15 p.m., Oak Ridge Sports?man's Association Indoor Range.

VOLLEYBALL: Beginning 6:30 p.m. Oak Ridge High School Gym. Court A: Ecobums vs. Dirty Half Dozen; Set Ups vs. Charley Browns; Beavers vs. Neophytes. Court B: Mix Ups vs. Mountaineers; Naughts vs. K-25 Gashouse Gang; K-25 Hawks vs. Dirty Half Dozen.

Sunday, April 21

SKEET TOURNAMENT: 1 p.m. Oak Ridge Sportsman's Association.

Have I secured all classified material in the proper repository?

Y-12ER LEON BRAY holds the Joe Kimsey Trophy which was given for the most improved new shooter in the Skeet Tournament recently. The next Skeet shoot is scheduled for 1 p.m. Sunday, April 22 at the Oak Ridge Sportsman's Association range.

Beavers Gain Top Volleyball Berth

Y-12's Beavers got back in the driver's seat last week in the Volleyball League as the netters decided to 'double-time' it to finish the season ahead of schedule.

Action began first on Monday with the Charley Browns defeating the Mix Ups in games one and four 15-13, 15-8 . . . and the Mix Ups taking the middle games 15-7, 16-14. The Old Men nixed the Naughts for the full four . . . 15-5, 15-6, 15-4 and 15-7. The Ecobums edged by the Neophytes 15-6, 16-10, 15-2 and 15-13.

On Court B it was the Dirty Half Dozen over the Set Ups 15-11, 15-12, and 15-7 . . . the Set Ups winning game two 15-13. The Beavers won four from the K-25 Hawks 15-4, 16-14, 15-13 and 15-3. The Mountaineers won three from the K-25 Gashouse Gang 15-10, 15-6, 15-12. The Gang took the first game 16-14.

Thursday night saw the Charley Browns win four from the K-25 Gashouse Gang 15-13, 15-11, 15-10 and 15-13. The Old Men ousted the Mix Ups for four 15-4, 15-12, 15-5 and 15-8. The Dirty Half Dozen made pawns of the Naughts 15-10, 15-4, 15-9 and 15-6. On Court B it was the K-25 Hawks over the Mountaineers 15-5, 15-10 and 15-9. The Mountaineers downed the Hawks in game two 15-11. The Beavers beat the Ecobums to move out in front for the full count 15-13, 15-3, 15-8 and 16-14. And, finally the Set Ups sank the Neophytes 15-13, 15-7, 15-3 and 15-13.

League standings follow:

Team	W	L
Beavers, Y-12	27	1
Dirty Half Dozen, K-25	24	4
Old Men, ORNL	24	4
Ecobums, ORNL	23	5
Set Ups, ORNL	17	11
Neophytes, Y-12	14	14
Mountaineers, Y-12	13	15
K-25 Hawks	10	18
Charley Browns, ORNL	7	21
Naughts, ORNL	5	23
K-25 Mix Ups	3	25
K-25 Gashouse Gang	1	27

Riders (two) wanted from South Knoxville, via Oak Ridge Highway, to any portal, straight day. Ed Cook, plant phone 3-5445, home phone Knoxville 576-4786.

ATTENTION GETTER

If you think you're not getting enough attention, try making an error!

Rippers To Face All Stars As Bowlers Finish

The Rippers took the last half of the Classic Bowling League in short order downing the Swingsters for four . . . thus moving out front by three big points. (They will face the All Stars, winners of the first half in the championship roll-off this week. The Rippers consist of Nelson Tibbatts, Paddy Peckman, Al and Wayne Groppe, and Jay Holzknecht. The All Stars are Tom Pappas, Dick Huber, Al Townsend, Otto Briscoe, H. D. Whitehead and J. D. Franklin.)

Other last-night victories were gleaned as the Markers marked four at the expense of the All Stars. Winning three were the Eightballs over the Playboys, the Has Beens by the Pinbusters and the Cubs over the Splinters. Taking two and one-half points were the Screwballs over the Smelters. Sharing two were the Eagles and Tigers.

Norm Jarvis, Rebels, rounded out singles highs with a 257 scratch, 271 handicap game. His 634 scratch series was high . . . and League Secretary Roy Roberts rolled a 686 handicap series.

The Rebels led the league in team highs . . . singles of 936 scratch, 1084 handicap . . . series of 2684 and 3043.

Final standings follow:

Team	W	L
Rippers	39½	20½
Pinbusters	36½	23½
Eagles	36	24
Bumpers	34	26
Swingsters	34	26
Markers	31½	28½
Tigers	31	29
Eightballs	31	29
Rebels	31	29
All Stars	30½	29½
Has Beens	29½	30½
Playboys	28	32
Cubs	26	34
Splinters	23½	36½
Smelters	21½	38½
Screwballs	16½	43½

Brewer Extends Table Tennis Lead

Gordon Brewer extended his lead in the Y Table Tennis league last week with a forfeit victory over Bob Brown.

Fred Wetzel defeated Francois Kertesz for three games, and Rokuro Oyamada wrested two from the hands of Al Norris.

Y League Standings:

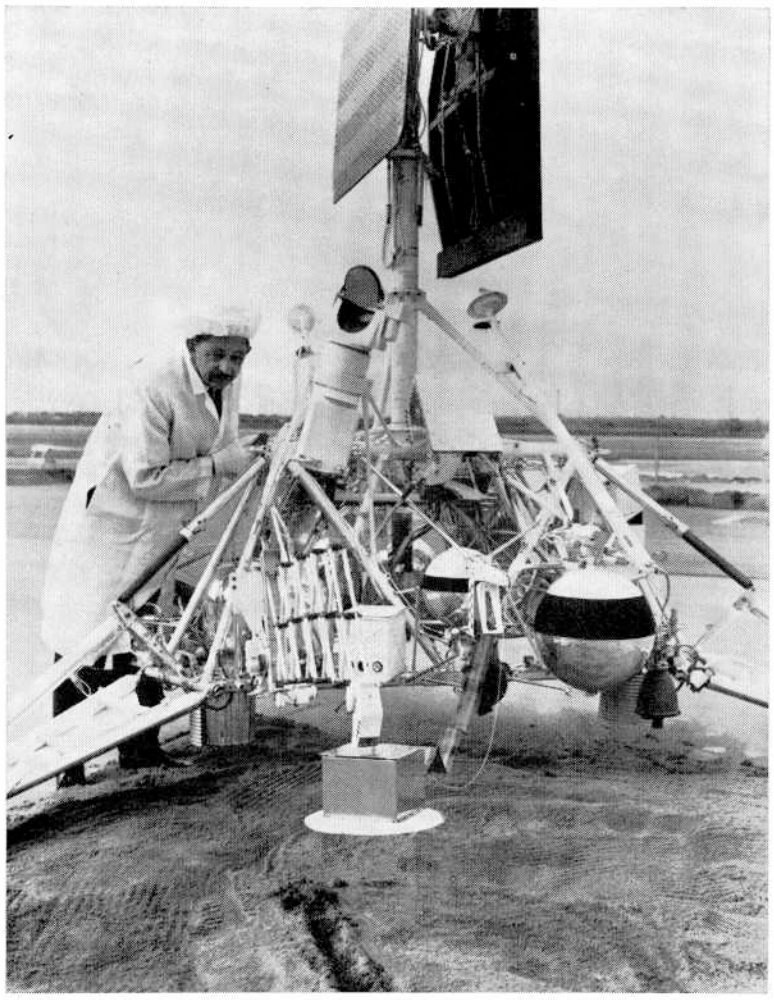
Player	W	L
Gordon Brewer	35	10
Ed Gambill	31	11
Bob Coveyou	31	11
Paul Kasten	24	16
Al Norris	27	18
Fred Wetzel	19	20
Rokuro Oyamada	20	25
Francois Kertesz	12	33
Art Weinberger	9	16
Bob Brown	0	42

Spurling High Hi Power Rifleer

The first place award in the master class of the All Carbide High Power Rifle Tournament was won by X-10's George Reiman, with a 475. The first-place award in the Sharpshooter-Expert Class was won by Jack Mrochek, also of X-10, with a 444.

In the marksman and unclassified sections, awards were won by Vic Vaughn, X-10, with 409; and Bill Galyon, Y-12, with 416. Other scores were:

Firer	Score
Jack Spurling, Y-12	468
Harry Hoy, Y-12	467
Anthony Abbatiello, X-10	455
Carl Brewster, Y-12	452
Hugo Bertini, X-10	411
Don Kiplinger, X-10	407
Jimmy Bell, X-10	404
Bob Powers, Y-12	392
D. Richard Sears, X-10	389
Bill Denton, Y-12	386
H. Powell Prewett, Y-12	285
R. M. Carroll, X-10	369
Ed Stumpfl, Y-12	359
Bob Damen, K-25	353
John Conlin, X-10	305
George Lowe, K-25	248



PREPARING FOR THE FUTURE MAN ON THE MOON . . . a test model of Surveyor Seven, the moon craft whose mission is described in detail in "The 21st Century" report "Anatomy of a Shoot," to be televised April 14, at 6 p.m., EST, in color on the CBS Television Network, sponsored in the public interest by Union Carbide Corporation. The program is carried locally by WBIR-TV, Channel 10. In the lower foreground an arm-and-claw device is moving a miniature chemical analysis kit called an alpha scatter instrument over a trench previously dug by the claw, which will be shown on "Anatomy of a Shoot." This maneuver was performed on the moon during the Surveyor mission by commands radioed from the Jet Propulsion Laboratory, Pasadena, California. An object of the mission was to determine what surface conditions will be encountered by astronauts who land on the moon.

Successful Lunar Shot To Be Shown On '21st Century' Telecast Sunday

"Anatomy of a Shoot," the story of a successful lunar shot from lift-off to landing on the moon and after, will be told on "The 21st Century" report which will be televised in color Sunday, April 14, at 6 p.m., EST, on the CBS Television Network. The program is carried locally by WBIR-TV, Channel 10. CBS News Correspondent Walter Cronkite is principal reporter for the series, which is sponsored in the public interest by Union Carbide Corporation.

"The 21st Century" cameras were admitted to the Jet Propulsion Laboratory at Pasadena, California, to film the Surveyor 7 mission, part of the U. S. space program designed to land man on the moon by 1970. The television broadcast will offer what may be the blueprint of twenty-first century exploration of the planets.

Viewers will be able to follow behind-the-scenes activities of incredible complexity, as the Surveyor moon vehicle was launched from its pad at Cape Kennedy, guided across a quarter of a million miles of space by scientists at JPL in Pasadena, and soft-landed on the moon a scant mile and a half from the center of the target area. There, under pre-programmed orders from Pasadena, it dug samples of the moon surface and conducted scientific experiments, relaying the results back to earth. Thousands of black and white photographs were made by camera equipment aboard the Surveyor 7 vehicle for these transmissions.

Many of these photographs will be seen on the "Anatomy of a Shoot" report. Viewers will see the vehicle's robot claw digging trenches on the moon and will watch as Surveyor makes its chemical analysis of the samples dug by its claw.

The entire operation was controlled from the Jet Propulsion Laboratory by radio across the vast emptiness of space, with the aid of equipment such as computers, tape recorders, and radar operated by a staff of scientists and technicians numbering into the hundreds.

An especially interesting sequence in "Anatomy of a Shoot" shows how a failure in the operation was corrected after a meeting of JPL scientists. After touchdown, a robot chemical analysis laboratory failed to deploy to the surface. From the earth the robot arm on the moon was ordered to push the instrument down to the surface where it could work.

Surveyor 7 was the fifth vehicle in the series to complete its mission successfully. Only numbers two and four went awry.

"Anatomy of a Shoot" was written by Fred Warshofsky, Science Editor of "The 21st Century." Isaac Kleinerman is Producer of the series, and Burton Benjamin is Executive Producer.

FAIR QUESTION

A young actress was getting the big rush from a young male star. "I want you to be the mother of my children," he declared.

"But how many do you have?" she asked.

ORNL's Worsham Is AIEEE Guest

"High Resolution Electron Microscopy" will be the subject of a talk by R. E. Worsham at the monthly meeting of the Institute of Electrical and Electronics Engineers. The meeting is set for next Wednesday, April 17, at 7:30 p.m. in the Green Room of the Ridge Recreation Hall.

Worsham has been with the Electronuclear Division of Oak Ridge National Laboratory since 1954 in the field of "particle accelerator development." More recently, he has been engaged in the development of high resolution electron microscopes.

During the 37-year history of the transmission electron microscope, the improvement in resolving power has been the principal concern of users and designers. The initial resolution of a few hundred Angstroms has been reduced to about three Angstroms during this time. Now, however, to jump to a resolution of one Angstrom so that individual atoms can be resolved and identified will require such things as the use of superconductivity for a higher field low aberration objective lens, correction of spherical aberrations, higher voltages with extreme stability, a brighter source, computer readout and processing of the image. The talk will review the work now going on in the United States, Europe, and Japan in the fields of high voltage and high resolution microscopy and the plans at ORNL to develop a one Angstrom microscope.

All IEEE members and friends are invited to a stimulating discussion of the latest developments in a method for examining the "almost" infinitesimal.

New Research

Continued from Page 1

and Welding Products Development from Newark, New Jersey

- Research Department and Molecular Sieves Development from Tonawanda, New York
- Research Department from Speedway (Indianapolis), Indiana

"We consider our research and development scientists and technicians among the most competent in the industry," said J. Goffe Benson, president of the Linde Division. "We are convinced that bringing together all of our technical resources will result in increased efficiencies and new and better products and improved services for our customers."

Linde's research and development projects span a broad spectrum of technology, ranging from the extreme low temperatures (near absolute zero) employed in cryophysics and cryobiology to the 40,000-degree-temperature of the plasma arc. Its processes and products are widely used throughout the steel, chemical, petroleum, petrochemical, electronics, metals-producing, and metal-working industries, and contribute to the progress of fast-developing technologies in aerospace and oceanology.

Union Carbide's expenditures for research and development have been about $80 million annually in recent years. In addition to the Tarrytown facilities, the corporation has 19 laboratory locations in the United States, including major Technical Centers at South Charleston, West Virginia; Bound Brook, New Jersey and Parma, Ohio, and a European center at Brussels, Belgium.

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J. E. SHOFFNER, AREA FIVE MAINTENANCE, is congratulated for his more than 14 years of service to Union Carbide as he retires March 29. His retirement plaque is presented above by C. M. Simcox, right.

WILLIAM F. SMITH, after more than 24 years of company service, retired March 29 to his 338 East Fairview Road, Oak Ridge, home. His congratulatory certificate is above presented by George Oliphant, right.

FRANK L. HAMMER, GUARD, is flanked by W. O. Elam, Plant Protection, left; and George Evans, superintendent of the Plant Shift Superintendents, right, on his retirement March 29. Hammer served more than 23 years in Y-12, and retires to his Route 18, Knoxville, home.