CLEANER TIMES

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EPA Employee Receives Bronze Medal

Bill Hunt

Bill Hunt, Chief, Data Analysis Section, was recently presented with a bronze medal for commendable services by Bob Neligan, Director, Monitoring and Data Analysis Division.

The citation states, "In recognition of exceptional performance and initiative in the development of the Environmental Protection Agency's recommended Pollutant Standards Index, statistical quality control tests for ambient air quality data, and the establishment of a center of statistical expertise within the Office of Air Quality Planning and Standards."

During the past year Hunt took on two major additional responsibilities: (1) Chairman of the EPA Working Group to develop an air quality index, and (2) Director of the quality control development program for screening ambient air quality data.

As chairman of the EPA Working Group, Hunt prepared a guideline document to encourage the use of a uniform index by state and local air pollution control agencies. As part of this effort he also conducted a joint study with the Office of Research and Development which tested the index in eight cities.

The second major effort undertaken by Hunt was the quality control development program for the National Aerometric Data Bank, which contains over 85 million ambient air pollution values. The purpose of this

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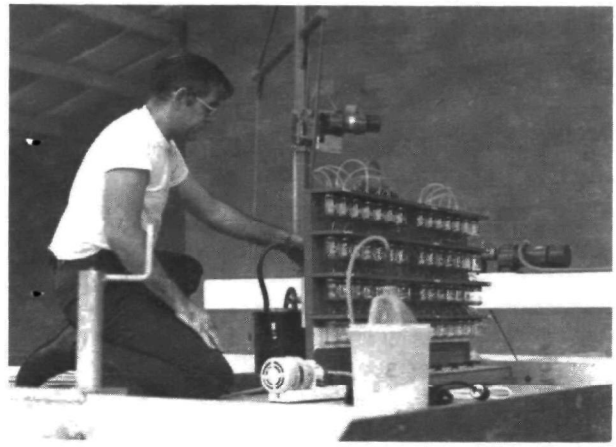
Fluid Modeling Facility

by Dorothy Rose/Roger Thompson



Lew Knight adjusting sampling rate in a towing tank experiment.

How can watching the smoke from a scale-model smokestack in a wind tunnel help solve the nation's air pollution problems? Dr. William Snyder, Chief of the EPA Fluid Modeling Facility explains, "If the wind tunnel is a meteorological wind tunnel, atmospheric air motions can be created to provide a laboratory environment for the study of air pollution dispersion. Quantitative results from these scale-model studies can be directly applied to full-scale, real world situations."

Recently I spent a very informative 45 minutes at the Fluid Modeling Facility. I saw a short film which described the operation of the facility, then Roger Thompson, an engineer in ESRL, took me on a tour and explained the functions of the wind tunnel and water channel-towing tank. I was amazed and you will be too, if you get a chance to visit this facility.

The EPA Fluid Modeling Facility (FMF), located in the Grand Slam building, was established in 1974 by the Meteorology and Assessment Division of the ESRL as one of only a few atmospheric dispersion modeling facilities in the world. Major research components of the facility include a water channel-towing tank, a meteorological wind tunnel, and an instrument calibration wind tunnel. In addition, there is a complete mini-computer for real-time data acquisition and analysis. Flow rates and concentrations are measured

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Person-to-Person

Congratulations from EMSL personnel to Tom and Wendy Lawless who are the proud parents of an 8 lb 4 oz baby boy, Geoffrey Tyler, who was born on February 25. Tom is a Systems Analyst in our Statistical and Technical Analysis Branch.

Best wishes for a speedy recovery to Bill Harris, GSD/OA, who is in the Veterans Hospital recovering from a recent illness.

Buttermilk biscuits, pumpkin bread, crepes filled with ham and mushrooms--these are just a few of the delicacies prepared by six EPA'ers in their new "learning to cook" venture. They meet as their budget or as hunger moves them--eating their way through a myriad of cookbooks. Our potential gourmet cooks over in OAQPS are Mary Whitt, Nancy Council, Priscilla Smith, Ann Eleanor, Patrice Mansfield, and Karen Easter. The major question: Do you need anyone to sample? The line forms on the right:

Liz Martin, OA, was recently accredited by the Public Relations Society of America, the national professional association for public relations practitioners. It is the largest association of its kind in the world with the primary aim of advancing the standards of the public relations profession.

Archibald Andrew MacQueen, IV, was born on Saturday, February 26, 1977, to Judge and Mrs. Susan MacQueen in Charleston, West Virginia. Proud grandparents are Arch and Kathleen MacQueen of Cary, N.C. Mr. MacQueen is with NADB, OAQPS.

Congratulations to Penny Andrews, EMB/EMSL, and her husband, "Dink," on the birth of a daughter, Ashley Lynn, on January 31. Ashley weighed in at 7 lbs. 2 ozs.

Speaking Engagements

Bob Bauman, SASD/OAQPS, will discuss "Energy and the Environment," at a meeting of the Durham Jaycees, March 22, at the Downtowner Motor Inn, Durham, N.C.

Walter Barber, Director, OAQPS, will address the Durham Downtown Lions Club, April 13, at the Downtowner Motor Inn. His subject will be "Proposed Future Plans for EPA."

Judy Graham, Microbiologist, Biomedical Research Branch, will discuss the "Physiological Effects of a Number of Pollutants," at Indiana University of Pennsylvania, Indiana, Pa., April 15.

Norman Plaks, Chief, Metallurgical Process Branch, IERL, will talk about EPA/ORD activity in the iron and steel industry at the American Society of Mechanical Engineers meeting, May 11-12, in Pittsburgh, PA.

Robert Hall, Research Mechanical Engineer, IERL, will discuss guidelines for industrial boiler performance improvement at the Air Pollution Control Association meeting, June 20, in Toronto, Canada.

G. Tucker, Chief, Special Studies Staff, IERL, will address the American Society of Engineering Educators, June 27, at Grand Forks, ND. His subject will be energy/environment management problems.

Richard Stern, Chief, Process Technology Branch, IERL, will attend the 2nd Symposium on Stationary Source Combustion, August 29-September 1, in New Orleans LA. He will talk about flue gas treatment for NO_x and simultaneous SO_x/NO_x control.

Robert Statnick, Research Chemist, IERL, will attend the American Society for Testing and Materials meeting, October 2, in San Francisco, California. His subject will be source sampling and analysis.

EMSL Sponsors Symposium

The Environmental Monitoring and Support Laboratory is sponsoring a symposium presenting an in-depth overview and findings of the Los Angeles Catalyst Study (LACS) currently in progress. The central objectives of the study are to evaluate the impact of the catalyst on ambient air levels of automotive pollutants, and to provide a long-term data base upon which to assess human exposures to automotive attribution products in and near the roadway. Data from this study will be presented and interpreted to determine if the use of the catalytic converter has significantly affected the ambient level of automotive related pollutants, especially in areas adjacent to the heavily travelled freeways. The symposium will be held April 12 and 13, 1977 at the Royal Villa Motor Inn, Raleigh, North Carolina.

Conferences

The Institute of Environmental Sciences is holding its 23rd Annual Technical Meeting and Equipment Exposition April 24-27, at the Marriott Hotel, Los Angeles, California. The theme: "Environmental Technology '77."

The Society for Advanced Medical Systems has issued a call for papers for its 9th Annual Conference on "Advanced Medical Systems-Challenges and Prospects." The conference will be held November 9-12, at the Los Angeles Hilton Hotel, Los Angeles, California.

Sign-up sheets for the Research Triangle Federal Employees Association "TENNIS CLASSIC" will be mailed late in March. If you're interested and do not receive an application call: Charlie Pratt, ext. 365 or Dick Jenkins, ext. 581.

EPA EMPLOYEE... (continued from page 1)

program is to develop and apply quality control tests to screen ambient air quality data for inconsistent values caused by transcription, keypunch, and other errors.

Hunt has gone beyond the development and testing stages and has set up cooperative studies with EPA regional offices in Chicago and San Francisco to provide an evaluation of the quality control tests.

Hunt, a native of New Jersey, received his B.A. in Mathematics and his M.S. in Applied and Mathematical Statistics from Rutgers University, New Brunswick, N.J.

Currently, Hunt, his wife, Janice, and their two children, Bill, III, and Elizabeth, reside in Durham.

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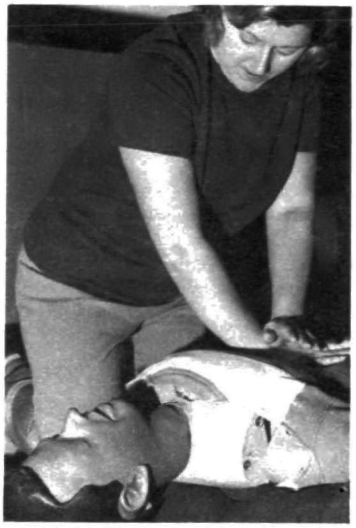
Practice Safety



Tena Pipkin practices CPR.

Your luncheon partner suddenly stops talking in mid-sentence, turns pale and is obviously in acute distress. He clutches his chest in panic. Within the next seven minutes he will be dead--unless you know what to do.

Each year thousands of Americans die by choking on a piece of food. Many of these lives could be saved by simple first aid techniques. First aid instruction trains employees to act swiftly and without panic in ordinary, everyday emergencies when qualified medical aid is not readily available.

Most of us could use a refresher course in emergency first aid procedures and with the range and complexity of work carried out by EPA'ers, there is an increasing need for expert medical instruction--especially for laboratory and field personnel.

Now three different types of emergency training courses are available through the Personnel Division. EPA recently concluded an interagency agreement with the U.S. Army John F. Kennedy Center for Military Assistance at Ft. Bragg, North Carolina. The Special Forces team provides expert medical instruction in all phases of first aid and emergency medical care. They also teach courses tailored for specific occupational situations.

Part of the training course covers cardiopulmonary resuscitation (CPR) and emergency cardiac care. CPR is an emergency method of keeping the brain supplied with oxygen in case of cardiac arrest. The course is designed to teach you to recognize respiratory and cardiac arrest, and to properly apply CPR to maintain life until professional help is available.

According to John Coggin, Personnel, there are three standard courses being offered. There is an intensive basic first aid course for non-laboratory personnel which runs for 16 hours. Over 700 employees took this course last spring at RTP. The laboratory emergency aid course is a 24 hour course, and there is a 40 hour field course which deals with emergency medical problems and with evacuation procedures at remote sites.

This latter course was taught last spring at RTP to 21 "students" who do stack sampling for EPA. These EPA staff members travel to industrial sites to determine what pollutants are expelled into the atmosphere by selected industrial processes. The results may be used in further research or as reference points in setting emission standards.

The stack sampling teams work in close quarters at or near the top of tall stacks and tanks, some as many as 300 feet high. Outer temperatures may rise to 230° and inner heat can reach 1200°. Personnel may be on the job long after the close of the official working day. While every safety measure possible is taken, there is always the possibility of sudden expulsion of gasses, electric shock, cuts, or other accidental injuries.

There has been no loss of time due to accidents in the six years of EPA's stack testing program, partly because of continuing classes and upgrading of skills in the safety awareness area.

Courses can be designed for a particular laboratory or field situation or specialized safety problem. A call to John Coggin, Ext. 1321, will answer all the questions you have about EPA's first aid courses.

Donor News

Many thanks to all of you who unselfishly volunteered your time and gave your blood during 1976.

We are just 65 pints short of our quota under the current Red Cross group agreement signed in May 1976.

This month, which has been proclaimed "Red Cross Month" by President Jimmy Carter, we want to pay tribute to all of you who gave blood during 1976 but space does not allow us to list all of you. A special tribute however, goes to Gordon Ortman who has now given 11 GALLONS (yes, that's correct) "ELEVEN." To give this much blood requires 88 pints donated over the years. Thank you, Gordon. And thanks to all our other doners.

Very special thanks goes to Richard Atherton who gave SIX pints this year.

Five pinters included: Robert L. Denny, Whitmel Joyner, John Brown, and Gordon Ortman.

EPA'ers who gave four pints were: Miriam Ashe, Ralph Baumgardner, John Cline, John Floyd, Richard Jenkins, Charles Keadle, Bonnie Kirtz, Jerome Kirtz, Thomas Lahre, Willie McLeod, Richard Paur, Donna Wicker, Allen Hoyt, George Gillis, and Lula Murphy.

If you have never given blood and would like to participate, give us a call. Liz Martin or Elaine Hyman, Ext. 2952. We need you.

FLUID MODELING... (continued from page 1)
by various electronic, chemical, and mechanical equipment. The staff includes professionals trained in environmental fluid dynamics, model makers, computer programmers, and electronic technicians.

A boundary layer similar to that which exists in the atmosphere is generated in the meteorological wind tunnel by placing large fins at the entrance to the test section. Scale models of buildings or terrain features are mounted to the floor of the test section. Portions of a model can be mounted on a turntable that can be easily rotated to simulate different wind directions. Pollutant emissions from various types of sources, such as smokestacks, are modeled according to established techniques. Smoke may be released from the source to visualize and photograph the dispersion pattern. If concentration measurements are required, hydrocarbon gas is used as a tracer in the stack gas, and samples are taken at various locations in the test section. Such effects as the aerodynamics of a building on the dispersion of pollutants from a nearby stack can be analyzed. By varying the height of the stack in the model, the height required for avoiding the building influences can be determined.

The water channel-towing tank was installed to study dispersion under stably stratified atmospheric conditions. The water channel mode of operation is similar to that of the wind tunnel and only neutral (no inversion) flow can be modeled. Models are fastened to the floor of the test section; dyes are used for flow visualization studies and for quantitative concentration determinations. The towing tank mode of operations involves blocking the ends of the test section and filling it with layers of salt water of increasing density to produce the desired stable stratification. Models are attached to a turntable suspended from a towing carriage into the water, and towed the length of the test section, making possible the study of flow and dispersion around building and complex terrain under stably stratified atmospheric conditions.

An old "rule of thumb" says that a stack placed next to a building must be at least 2-1/2 times the height of the building to avoid downwash of the plume in the wake of the building. Downwash would result in high concentrations of pollutants at ground level. A wind tunnel study showed this to be a good rule for a conventionally shaped building. For a tall, thin building, however, the rule was demonstrated to be unnecessarily conservative and, therefore, wasteful. Research proved that a thin building has essentially no effect on plume behavior when the stack is 1-1/2 times the height of the building. However, studies show that downwash occurs behind a wide building when the stack height is only 1-1/2 times the building height. This study benefitted the consumer by demonstrating that the construction of costly tall stacks is not always necessary.

These and other types of studies are constantly going on at the Fluid Modeling Facility in an effort to gain general understanding of the mechanisms of atmospheric dispersion.

Personnel Corner

Occasionally the Personnel Office learns of complaints from employees and new retirees who claim to have been unaware of requirements to continue their health benefits upon retirement.

The Federal Employees Health Benefits law allows a retiree to continue health benefits into retirement if his or her retirement is:

- On an immediate annuity,
- After 12 or more years of service or under the disability provisions of the retirement law, and
- After enrollment (or coverage as a family member in a plan) (not necessarily the same plan) under program during:
- the 5 years of service immediately preceding retirement, or
- all service since his or her first opportunity to enroll.

Give careful consideration to these requirements, if you are not enrolled in a plan or are considering cancellation of your enrollment.

The following awards were approved during February 1977:

QUALITY INCREASES:

Joshua S. Brown, IERL	Gloria J. Koch, ESRL
T. Kelly Janes, IERL	Robert R. Arnts, ESRL

CONTINUED SUPERIOR PERFORMANCE:

Jean Guard Lewis, HERL

SPECIAL ACT OR SERVICE:

Karen B. Curtis, ESRL