



OXIDANTS, HYDROCARBONS, AND YOU

A farmer suffers a coughing spell while mending a fence. The early afternoon skies are a little hazy, but the winds are steady. No smokestacks around. Who would suspect air pollution?

His wife develops a headache and assumes it is that fierce mid-summer heat. But it may well be oxidants in the air--photochemical smog formed from emission sources in the city, fifty miles upwind.

How oxidants get in the air we breathe is hard to explain without talking about photochemical reactions, chemical precursors, and hydrocarbon emissions. However, two basic facts are grasped easily: (1) Oxidant exposure in many parts of the United States is in gross excess of the national standard set to protect the health and welfare of all sectors of the population and, (2) These high oxidant levels can be hazardous to your health.

Where do oxidants come from? No automobile engine or smokestack emits oxidants. But, autos, smokestacks, oil wells, gasoline stations, dry cleaners and a host of other sources emit ingredients that, when combined in the atmosphere, can result in the formation of oxidants.

It is morning. You stop on your way to work to fuel your car. The nozzle clanks into the intake pipe; the pump clicks and whirrs. You see a shimmering vapor rising. Those are hydrocarbons. They are given off by service stations, refineries, gasoline storage areas,

and dry cleaning establishments.

Hydrocarbons also come from smokestacks, automobile exhausts, and home chimneys. Anytime fossil fuels are burned or evaporated, we put more hydrocarbons into the air. In fact, many of the products which you are accustomed to using in everyday life, contribute hydrocarbons to the atmosphere. Painting the backyard fence with oil base paint or using some of the common household cleaners causes small amounts of hydrocarbons to be emitted to the atmosphere.

To complicate matters further, nature itself, especially in rural areas, produces significant amounts of hydrocarbons. Thus, unlike some of the other air pollutants, which can be traced to a few specific sources, hydrocarbons have many small and diversely located origins.

Hydrocarbons rise in the air and mix with other pollutants including nitrogen oxides emitted from smokestacks and automobile exhausts. If it's nighttime, nothing changes these pollutants right away. Brisk winds carry them 40 to 50 miles into the country. Or a high-pressure, low-wind system may cause the stuff to hover over the city. But as soon as sunshine hits a pocket of mixed hydrocarbons and nitrogen oxides, a photochemical reaction occurs, creating oxidants (also known as photochemical smog).

The word "oxidant" is a catchall term that includes a lot of different chemical compounds, but in the
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TRIANGLE AREA STUDENTS AWARDED EPA SCHOLARSHIPS

There was stiff competition this year for EPA scholarships, but five of our local students "made it."

They were among 27 sons and daughters of EPA'ers across the country to receive scholarship checks this year. Our students were Alice Terry, George Robert Gillis, Jr. and Janie Elizabeth Gillis, Glen Whaley, and Wanda Margolin.

The awards were presented by Dr. John Burchard, Director, IERL/RTP, Mr. John H. DeFord, Director of Administration, and Mr. Richard G. Rhoads, Acting Director, CPDD/OAQPS.

This is the fourth time Alice Terry has received a scholarship. She will be a senior at UNCG this Fall and is majoring in special education. Alice's mother, Abbie Terry, is an accounts maintenance clerk, FMD/OA.

George Robert Gillis, Jr. received his second scholarship this year. He is attending High Point College, High Point, N.C., where he is a sophomore majoring in human relations.

Janie Elizabeth Gillis will be starting her freshman year at Methodist College in Fayetteville, N.C., the end of August and she plans to major in physical education.

George and Janie Gillis' father is a mechanical engineering technician, IERL/RTP.

Glen Whaley is a rising senior at UNC, Chapel Hill, N.C., where he is majoring in organic chemistry. Glen's mother, Mary Whaley, is a secretary in EPA's CPDD/OAQPS.

Wanda Margolin is the second member of her family to receive a scholarship check. She is a sophomore
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Hydrocarbons...cont'd from page 1
afternoon when oxidant levels are highest about 90% of the "oxidants" is ozone, a form of oxygen. An ozone molecule contains three atoms of oxygen whereas the life sustaining form of the oxygen molecule is composed of two atoms. This seemingly small difference is important; ozone can significantly affect the human respiratory system and cause damage to vital heart tissue.

To some, ozone may not be a bad word at all. We know ozone as the material in the stratosphere that screens out harmful ultraviolet rays--a beneficial layer that some scientists say is getting thinner and therefore less effective as we keep using freon-propelled products. But that ozone is seven miles or more above the earth. The harmful ozone which is a large part of the oxidant problem is down here, all around us.

The U.S. Environmental Protection Agency has determined that the oxidant concentration in a community's air should not exceed .08 parts oxidant to one million parts of air for more than one hour, once a year. Some industry spokesmen say this national oxidant standard is unrealistically low. Some medical people say it is too high. In a recent report prepared for Congress, the National Academy of Sciences, which is composed of scientists from all fields, concluded that they could find no basis for changing the standard.

One of the earliest warning flags about oxidants went up when a west-coast study showed that long-distance runners on a high school track team invariably posted slower times on days when oxidant concentrations were high.

Later, a careful, two-year study of 200 healthy, young nurses found that headaches, eye irritation, coughing, and chest discomfort increased as the oxidant level in-

creased. The nurses did not know that air pollution was even involved in the study. They were asked to keep diaries recording painful symptoms of any kind.

Findings from the nurses' diaries begin to take on meaning when examined in the light of known pollution levels. The nurses reported the following complaints:

- An increase in the number of headaches when oxidant levels were slightly above the national standard,
- An increase in cases of eye irritation when oxidant levels were slightly below the standard,
- An increase in chest pains and a prevalence of coughing when oxidant levels were above twice the national standard.

These symptoms were observed in a group of normal, healthy, young adults. People with chronic heart and lung disease, such as asthmatics, have been observed to experience adverse effects from exposure to oxidant levels only about 50% above the national standard.

In Japan, scientists have studied public students' reaction to smog episodes in which maximum hourly concentrations reached .24 ppm, a level quite common to many American cities. The students experienced increased coughing, eye irritation, headaches, and throat pain during those peak concentration periods. Furthermore, the students developed the same symptoms when oxidant levels were much lower (.10 ppm) but persisted over a 24-hour period.

In carefully controlled laboratory experiments, using human subjects, ozone has been observed to cause decreased lung capacity, chest discomfort, windpipe irritation, decreased general visual acuity (especially decreased night vision), and difficulty in mental concentration. While results from such experiments indicate these symptoms occur only

when the ozone level is two to four times higher than the national standard, medical experts caution that:

- Such experiments are performed using only normal healthy adults,
- Experiments do not measure the combined effect of exposure to more than one pollutant at the same time,
- Effects are measured only for short-term exposure.

Obviously, there are limitations to the type of experiments which can be conducted with human subjects. Consequently, scientists frequently use animals to try to obtain knowledge of the health effects of oxidant exposure. While a wide variety of harmful health effects (from simple slow-down of activity to increased mortality) has been observed in experiments with animals, perhaps those most disturbing to medical researchers have been:

- Chromosome breakage,
- Irreparable damage to lung tissue,
- Breakdown in ability of the body to resist infectious bacteria,
- The combined effect of exposure to ozone and another pollutant (polycyclic organic matter) which can sharply increase the risk of cancer as compared to breathing either pollutant in the absence of the other.

It is hard to relate observed effects in animals to expected effects in humans, but the disturbing fact is that these symptoms have been observed when animals breathe ozone in concentrations quite similar to that found in the atmosphere. How high are oxidant levels in the United States? Almost all major cities are
(Continued on page 6)

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WHO'S UP FRONT

The three secretaries who are "Up Front" this month are Brenda C. Millar, CPDD/OAQPS, Anita J. King, ESRL/ERC, and Jean E. Ewing, PMD/OA.



Brenda Millar

Brenda is secretary to Norman Dunfee, Chief, Control Programs Operations Branch. She has been employed by EPA for six years. Before joining this Agency she was employed by the Air Force, Army, and Internal Revenue Service.

Brenda graduated from Durham High School and attended Kings Business College in Charlotte, N.C. She is married and has two sons, Kenneth, 5 years, and Kevin, one year. Her husband, John, is a programmer at IBM. Her hobbies are ceramics and sewing.

In talking with Brenda's supervisor, Norm Dunfee, he said, "Over the years it has become clearly evident to me that the focal point of any office is its clerical staff. Most always, the first contact with any office is with the secretary and the impression she makes is a penetrating and lasting one. Her attitude generally reflects the character and personality of the entire office staff. I am delighted to commend Brenda Millar as a person who consistently brightens

this office with her talent, charm, and efficiency, and helps to make the day at the office a pleasant experience. We salute you, Brenda."



Anita J. King

Anita J. King is a secretary in the Gas Kinetics and Photochemistry Branch of ESRL. Her supervisor is Dr. Joseph J. Bufalini. She also works for the Air Characterization and Special Projects Group.

She was born in Virginia, but has been living in North Carolina for nine

years. She is a graduate of Hard-barger Business College, Raleigh, N.C. Anita has been employed by EPA for six years. She is single and currently lives in Parkwood. Her hobbies are playing the piano, collecting antiques, traveling and reading.

When contacted, Joe Bufalini said, "Anita is a good executive secretary. She gets the day-by-day work done in a pleasant and efficient manner. This is not an easy task since the people in our branch have diverse personalities. Nonetheless, she accomplishes this difficult task without a flaw. I'm happy to have her as a secretary and I'm certain that my co-workers feel the same way. I'm also pleased to hear that she has been chosen as this month's "Up Front" secretary for ERC. She justly deserves this honor."

(Continued on page 4)

August 26, 1920. The Secretary of State declares the Nineteenth Amendment law. Women are allowed the right to vote. It was a good day.

REPORT ON EEO COUNSELORS MEETING

by John H. DeFord, Acting EEO Director

The end of July I held a meeting with the newly appointed EEO counselors. We discussed training for them and Jim McDuffie outlined the courses available. The basic correspondence course is available immediately to all counselors. This course and others will help train our counselors to insure high quality service. There are also several courses in the EEO area for Federal employees who do not have the responsibility for managing EEO programs. Supervisors and managers are encouraged to take one of the more comprehensive courses so that they will thoroughly understand the EEO program and be able to implement it more effectively.

We discussed the issue of privacy at this meeting since some counselors do not have a private office. The EEO Associates for each organization, John Haines, OAQPS, Denny Martin, ORD, and Dee Houston, OA, will be working closely with the counselors to provide privacy and preserve confidentiality.

All EEO Counselors are available to all EPA employees. They will serve as a bridge between employees and management to resolve problems connected with equal employment opportunity.

Please do not hesitate to use their services. List of EEO Counselors includes:

<u>Name</u>	<u>Organization</u>	<u>Ext.</u>	<u>Location</u>
Alfred Campbell	OAQPS-SASD	291	Mutual Building
Daniel DeRoek	OAQPS-CPDD	226	Mutual Building
Francis P. Duffield	ORD-HERL	2525	ERC
Elaine Hyman	OA-PA	2952	Wing C, ERC
John Jefferies	OA-CMD	1401	Admin. Building
Kathryn MacLeod	ORD-HERL	2725	Monsanto
Roosevelt Rollins	ORD-ESRL	1271	ERC Annex



Jean Ewing

Jean Ewing is secretary to Gerald Groon, Director, Personnel Management Division, OA. Jean grew up in Pennsylvania and received her business training from Bryant and Stratton Business Institute in Buffalo, N.Y. Although Jean and her family have moved around the United States a lot, she considers coming to North Carolina their best move. Prior to joining EPA she held a variety of jobs with an auditing firm, insurance company, military service club, social services agency, military college, office of the justice of the peace, and at one time owned a motel.

Jean is married and has a family, but still has time to become involved in various community activities such as participating in the Chamber of Commerce Board of Directors, Welcome Wagon Club, coordinator for Meals on Wheels, "Mother in Charge" for kindergarten field trips and at one time was certified by the State of Pennsylvania as a District Magistrate. During her six years in government she has received three outstanding ratings, a QSI, a meritorious service award and two outstanding division awards.

Her supervisor, Jerry Groon, says, "Included in the definition of a

Secretary is the notation that such a person is a "loyal and trusted" assistant. While this is clearly true of our association, Jean brings far more to her work including a special measure of common sense, absolute integrity, versatility, and a sincere willingness to do her share and more. She also possesses a realistic optimism about people which is always a desirable trait, but which is absolutely vital in personnel management. It is good to be able to comment publicly about Jean's excellent performance. The Federal Service is fortunate to have people such as her in its midst."

MAKING FRIENDS THE EPA WAY

It was a sunny, clear day out in Whittier, California, last February and a fourth grade class was out on the playground for their physical education period. As they were playing kickball, a balloon slowly drifted down into the school yard. The fourth graders rushed over to it and, much to their excitement, found a bottle tied to the end of the balloon. In the bottle was a note from Paul Haskins, EMSL, asking the person who found the bottle to write.

According to the fourth graders' letters "... the balloon floated down about 1:40 p.m. and the temperature was 75°. Arthur saw the balloon first but his friend, Eddy, ran and got the balloon first. I got it second. We all jumped and the girls screamed and we made a hole in the balloon because we were so excited."

Paul had been in the Los Angeles area on the L.A. catalyst study. He and other EPA'ers were monitoring along the freeways, sampling for sul-

furic acid emissions from catalyst equipped cars. Paul thought it would be fun and interesting to send off a balloon and see what happened. He released it about 10:30 a.m. near Santa Monica and the balloon traveled about 30 or 40 miles before coming to rest in the school yard.

From the enthusiastic letters we figure Paul has made 18 new friends in California for EPA.

IN MEMORIAM

Glen A. Fairchild
Commissioned Officer
U. S. Public Health Service
Senior Research Scientist
HERL/RTP
1934 - 1976

The following was received by Glen Fairchild's colleagues. It is a thoughtful tribute we would like to share.

"Personal and scientific integrity were the hallmarks of Glen's private and professional life. He was quiet and unassuming, yet highly respected by all who knew him. Glen's devotion to his research and to his family was carefully and thoughtfully balanced in the way that many seek but few attain. Long hours at work were followed by frequent trips to the countryside to share with his family a deep appreciation of nature.

Glen's desire for the Agency was depth and quality in research and confidence and trust in administration. He was sensitive to the twin problems facing the Agency -- the need to respond quickly and effectively to immediate environmental problems, balanced with the need for a significant investment in long-range research aimed at anticipating future environmental problems. From his life, those who knew him take renewed courage and hope that our efforts to understand and protect our fragile environment might be met with success. Although we have lost a great friend and colleague, perhaps, we, who continue the work, may do so with a renewed sense of purpose."

PERSON TO PERSON

Gary Rzasa, son of Frank Rzasa, CMD/OA, was selected to play the role of Archie Kramer in the student production of Tennessee Williams' "Summer and Smoke." Gary is a student at Cary High School.

Susan Sharpe, Chemical Processes Branch, IERL/RTP, gave birth to a 9 lb. 6 oz. boy, Samuel Norris, July 7. Susan's husband Fred is football and track coach at Southern High School. Susan will return to work September 7.

Nancy Rhew, GSD/OA, got her wish. She gave birth to an 8 lb. 10 oz. girl, Kimberly Dawn, July 11.

Claire Thomas, CPDD/OAQPS, has returned to work after having had heart surgery in April. We all missed Claire and are delighted to welcome her back. And, incidentally, Claire has agreed to be a recruiter for EPA's blood program. She was one of our regular donors until her surgery when she realized in a very personal way how important EPA's blood program is. But as Claire says, "Don't wait to be asked to give. Blood comes only from people, and your gift could mean life for a sick child, an accident victim, or a person facing surgery."

Carmen Hoover, ESED/OAQPS, our FWP "Employee of the Month" last June, recently underwent a "bilateral hemilaminectomy and foramenotomy" which sounds serious even if you do not know what that is. Actually, it is a complex surgical procedure involving the vertebra at the base of the neck. The operation was a success, and Carmen has been discharged from the hospital and is continuing her recovery at home. We all miss her pretty face and enthusiasm and look forward to her return in the near future.

Carol Whaley, daughter of Mary Whaley, CPDD/OAQPS, is spending the summer in Tunisia as an American Field Service exchange student. Carol left the U.S. June 21 and is living with a Tunisian family. She speaks French with the family and is learning some Arabic. She will return to this country late August.

The editors of the Cleaner Times and all friends and associates of Miriam Harper, ISD/OA, extend their deepest sympathy to her on the death of her husband, Alan A. Harper, July 28, 1976.

The Facilities Management Branch, GSD/OA, welcomes Shirley Walston, who will be working in Preventive Maintenance for one year.

An investment club has been formed by employees of EPA. Anyone wishing to obtain more information about the club may contact James Kinn (1D-72), extension 2617.

Cathy Jo Jones, AV/ISD, and Bobby Poole, TP/ISD, were married September 3, at 8:00 p.m. at the First Baptist Church in Hillsborough. We all wish them lots of luck and happiness.

Gary L. Johnson, Environmental Engineer with the Special Studies Staff, Industrial Environmental Research Laboratory, has been elected Vice-Chairman of the Eastern Carolinas Section of the American Nuclear Society for 1976-77.

Gary was a pivotal figure in the formation of the Eastern Carolinas Section in the spring of 1975 and served as Interim Chairman. He was Chairman of the Program Committee during 1975-76 and also served on the Executive Committee.

The Eastern Carolinas Section of the American Nuclear Society represents scientists and engineers in the eastern Piedmont and Coastal Plains regions of the two Carolinas who are interested in the study of the atomic nucleus and the benefits to be derived by mankind. In one year, over eighty professionals have joined the Eastern Carolinas Section.

Lula Knotts has a brand new husband, Kenneth Murphy, of Durham. The couple was married July 10, in Sanford, N.C. Mrs. Murphy is a Personnel Clerk in PMD/OA. Congratulations and best wishes to both of you.

IN MEMORIAM

Ernest T. Allen, Jr.
Biological Laboratory Technician
Health Effects Research Laboratory
Research Triangle Park
1943 - 1976

CHANGE IN MAIL DROP NUMBER

In order to ensure that copies of the "Cleaner Times" reach all employees at their respective mail drops, we would appreciate it if employees changing jobs or locations would notify the Public Affairs Office immediately, so that we can change our records accordingly.

REFERENCE MATERIALS IN PUBLIC AFFAIRS OFFICE

The Public Affairs Office, C-233, Tech Center, receives single copies of speeches, statements, and congressional testimony by EPA officials along with all press releases from EPA's Washington Press Office. These are reference copies only. They may be used in the Public Affairs Office or can be checked out for a week at a time. Recent speeches are listed below.

Russell E. Train, EPA Administrator:

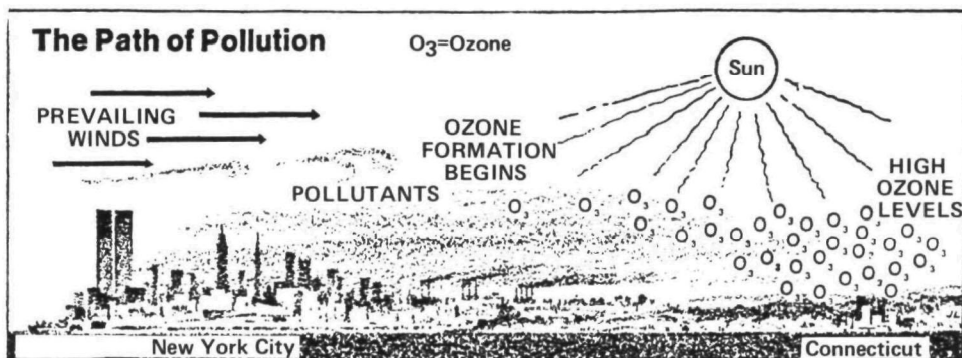
"Making Regulation Work," National Conference on Regulatory Reform, Washington, D.C., May 26, 1976.
Remarks prepared for delivery at the International Waste Equipment and Technology Exposition, Chicago, Illinois, June 2, 1976.

"Controlling the Risks That We Create: The Need for Toxic Substances Control Legislation," Spring Luncheon Drug, Chemical and Allied Trades Association, New York, New York, June 17, 1976.

John R. Quarles, Jr., EPA Deputy Administrator:

"Beyond NEPA," Conference on the Environmental Impact Statement Process Under NEPA, Co-Sponsored by the Center for Administrative Justice of the American Bar Association and the Environmental Law Institute, Washington, D.C., June 4, 1976.

In the last issue of the "Cleaner Times" we invited employees to submit their opinions regarding recent changes in the format and content of the newsletter. We are sorry to say there was a very poor response to our request. However, from the replies received, we feel the "Cleaner Times" is heading in the right direction. Comments and suggestions are always welcome, and so is news. Don't be bashful. Let us hear from you.



New York City's auto and industrial pollutants, transformed into ozone by the sun, have their most serious effect in Connecticut and parts of Massachusetts 200 miles northeast of the city.

in violation of the national standard. That is their citizens are breathing oxidant at more than .08 parts per million for at least an hour, more than once a year. On midsummer days when skies are sunny, temperatures high and winds sluggish, urban people may breathe oxidant concentrations twice the national standard for eight or more consecutive hours. If there is wind, these pollutants can spread more than fifty miles into rural areas. Hydrocarbon emissions from a Youngstown, Ohio plant may eventually add to oxidant concentrations breathed by a Slippery Rock, Pennsylvania farmer.

Quantitatively speaking, where do emissions come from--these hydrocarbons that later become oxidants? About half of our hydrocarbons come from motor vehicles. A 1970 model car produces ten times as much hydrocarbon as a 1975 model. By 1985, when almost all of the high polluting clunkers are at rest in junkyards, we will have reduced the national hydrocarbon output from automobiles to about one-third of its 1970 level. So that part of the solution is moving along.

Meanwhile, new factories are cranking up their furnaces, paint booths and degreasing lines. More service stations are being built, more oil wells drilled, and refineries expanded. Dry cleaners are continuing their open-vat processing, and you keep repainting the backyard fence. Half of the hydrocarbons

that later result in the formation of photochemical oxidants originally come from these stationary (non-vehicular) sources. Mother nature compounds the problem, or, rather, we compound the problem of naturally produced oxidants. Anywhere there is plant growth, rotting forest humus and other natural organic processes going on, there is a production of natural hydrocarbons. Scientists estimate that natural sources can contribute as much as .04 parts per million to the oxidant concentration. That is half the national standard coming from natural sources alone, which explains why it does not take much additional pollution from the city to start the farmer coughing.

But work by scientists at the U.S. Environmental Protection Agency indicates, that even though it may not be possible to reduce oxidant levels to the national standard in all places in the near future, the risk of adverse health effects can be substantially reduced just through relatively small reductions in present oxidant levels. This is particularly true for those places where oxidant levels above about .20 ppm are experienced.

For example, using the best and latest available data, EPA statisticians have computed the effects of oxidant exposure as it relates to six symptoms--aggravation of heart and lung disease, aggravation of asthma, chest discomfort, eye discomfort,

cough and headache. From this work EPA estimates that when the second highest hourly oxidant concentration is reduced from .30 ppm to .15 ppm, there is a 90% reduction in the health effects indicated by the six named symptoms. There is reason to believe other adverse health effects would similarly be reduced. So, even though the national standard might seem unattainable in the near future, many cities with severe oxidant problems can receive substantial health effects gains through small improvements in peak oxidant levels.

Fortunately, there is proven technology available to greatly reduce oxidant levels. Much of this technology can be used without seriously disrupting normal life styles. Also new and improved technology is being developed, and there is promise that this technology can be consistent with the nation's economic and energy needs.

However, if we want to receive these health benefits, we are going to have to accept some changes. A closed system dry cleaning plant may charge you an extra nickel for cleaning your winter coat. When your service stations install completely closed pumping and storage systems your gasoline costs may rise slightly (less than a penny per gallon). However, some optimistic industry watchers say that when gasoline producers convert to non-vented storage and handling systems, they may save enough fuel to offset the cost of the new equipment. In addition, the nation would realize an energy savings of millions of barrels of fuel now lost annually to evaporation at dozens of points between the oil well and your gas tank.

Everytime an auto manufacturer paints a fender, it releases hydrocarbons in the air, just as you do when you paint the backyard fence. For the (Continued on page 8)

ALASKA 49

It was hot and cold, rainy and dry, sunny and cloudy, but most of all, big and mosquitoey. That is how John Robson and his three children found Alaska during their July vacation. Robson, a community planner in SASD, returned to EPA August 2 after keeping an age-old promise to visit his brother, who lives in Fairbanks.

Much of the time was spent traveling. He and his children drove to Buffalo where they left the car with his sister. Then they flew to Seattle, took the Alaska State Ferry up the Inside Passage to Skagway, and rode the narrow-gauge White Pass and Yukon Railroad to Whitehorse, YT. There they were met by his brother who had a camper. The five proceeded up to Dawson City, west to Tetlin Junction, and north to Fairbanks. Side trips from Fairbanks were made by commercial airlines, a bush plane, and an old, borrowed Chrysler. The return trip was by air to Buffalo, and car to Chapel Hill.

The narrow gauge railroad trip was a highlight. After three nights and two days of rain on the ferry trip, the four climbed out of the gloom and into a sunny, warm Yukon. They forwent their seats in order to stand outside for better views of the spectacular scenery and, of course, to experience the clackety-clack that once was the so-very-familiar sound of trips by rail. The railroad served lunch by Lake Bennett--the headwaters of the Yukon River--which must rank as one of the most beautiful lakes in the world.

The side trip to the North Slope was somewhat uncomfortable, but very rewarding. The four flew to Barrow, with backpacks, explored every corner of that small Eskimo community, slept on the shore of the Arctic Ocean, and then flew to Prudhoe Bay to see the ARCO and BP oil field development.

The discomfort came several ways. First, it was cold. North Carolina sleeping bags are not made for sleeping on the beach of a breezy Arctic Ocean, which at that time was still frozen. Second, there was no escape from eternal sunlight. This can be more destabilizing than jet lag. Third, the oil workers in Prudhoe--who had never seen children on the North Slope--gave the four so much food that they were not ready to eat again for a day.

Other side trips included a three-day backpacking trip on Pinnell Mt. just south of the Arctic Circle, a three-day camping trip at Mt. McKinley, a one-day canoe trip along 20 miles of the Chena River, and a visit to Alakaket, an indian village above the Arctic Circle, by bush plane. They will never forget the mosquitoes--mosquito netting is a must in many places--and the experience of hiking through tundra, which must be one of the most difficult mediums for hiking.

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## NEW PUBLICATIONS

The following is a list of new publications which are available from the Public Affairs Office, C-235 (MD-31):

Farmers-Know Your Responsibilities  
Under the Federal Pesticide Law  
Save Energy, Air, Money - Carpool  
It To Work  
Air Pollution is Hazardous to Your Health

Clean Air - The Breath of Life  
Radioactive Wastes

EPA - Emission Investigations Report

Charlie Was Just a Chipmunk  
Health Effects of Air Pollutants  
A Drop to Drink (Revised)

Noise Control Programs of the  
Federal Government

The Federal Insecticide, Fungicide,  
and Rodenticide Act (as amended  
11/28/75)

## TRIANGLE AREA RECYCLING INFORMATION FROM THE SIERRA CLUB NEWSLETTER

### Chapel Hill

Aluminum--Bins at Glen Lennox and Elliot Road Fire Stations and behind Municipal Building (Cadette Troup 59). Pick-ups at University Mall every other Wed., 2-3:30 p.m.; next date Nov. 12 (Reynolds Aluminum).

Glass--Clear and green, Plant Road Glass Depot (Boy Scout Troup 39).

Newspaper--Collection dumpsters at Plant Road Glass Depot, Elliot Road and Glen Lennox Fire Stations, Wilson Library, Carrboro Town Hall (Town).

Plastic--Gallon milk and juice jugs with caps, Plant Road (Ecos).

### Durham

Aluminum--Pick-ups at Northgate every other Tues., noon-1:30; next date Nov. 11 (Reynolds Aluminum).

Glass--Clear and green, no metal rings, Northgate, second Sat. of each month, 10:00-noon.

Paper--Newspaper bought by Paper Stock Dealers, 410 Clay St., Mon.-Fri., 8-12, 1-5, 60¢ per 100 lb. Newspapers, magazines, cardboard accepted by Reclamation Systems, Hoover Rd., weekdays 8-8, Sat. 8-12; payment for loads over 400 lb.

### Raleigh

Aluminum--15¢ per lb. for cans and 10¢ per lb. for scrap at Reynolds Recycling Plant, 908 Downtown Blvd., Tues.-Sat., 8:30-5:00.

Glass--Clear and green, next collection at Jaycee Park on last Sat. in Feb., 9:00-1:00.

Paper--25 bins for newspapers and magazines throughout Raleigh; call Raleigh Rescue Mission for nearest location or deliver to the Mission at 211 S. Person St., Mon.-Sat., 6 a.m. to 10 p.m.

For more information call the agencies sponsoring the recycling.

## PERSONNEL CORNER

The following awards were

approved during July 1976:

QUALITY SALARY INCREASES:

Audrie K. McCauley - HERL

Nadine W. Vogel - HERL

CONTINUED SUPERIOR PERFORMANCE

AWARD:

Robert Henry - OAOPS

## CONFERENCES

International Conference on Photochemical Oxidant Pollution and Its Control, Raleigh, N.C., September 12-17. Contact: Dr. A. P. Altshuller, Director, ESRL, U.S. EPA.

National Conference on Energy and the Environment, Cincinnati, Ohio, October 5-7. Contact: Air Pollution Control Association, 4400 Fifth Avenue, Pittsburgh, Pennsylvania 15213.

Les Assises Internationales de l'Environnement, with session on industrial pollution, urban environment and health and environment, Paris, France, December 6-10. Contact: Les Assises Internationales de l'Environnement, 40 rue du Colisee, 75008 Paris, France.

1977 Environmental Technology Meeting and Equipment Exposition, Marriott Hotel, Los Angeles, California, April 23-27, 1977. Deadline for submission of abstracts is September 15, 1976. Contact: S. Baber, IES Technical Program Chairman-AM '77, Boeing Aerospace Co., P. O. Box 3999, MS-86-09, Seattle, Washington 98124.

A symposium on "Methods and Standards for Environmental Measurement," will be held September 20-24, in Gaithersburg, Maryland. Discussion will center on the need for improved measurement methods and standards for measuring air and water pollution. Contact: R. B. Johnson, Materials Building, Rm. B-348, National Bureau of Standards, Washington, D.C. 20234.

Hydrocarbons...cont'd from page 6  
auto makers, the answer may be a dry-flake type of paint that is applied to the fender then melted as it passes through an oven. For you and the fence, the answer will likely be a water based paint which contains fewer hydrocarbons.

Yes, you too can help. That extra trip you make to the grocery store adds a small amount of hydrocarbons to the atmosphere. Your car, when properly tuned, produces far less hydrocarbons than when untuned. Car-

## TRAINING COURSES

The following courses have been scheduled to be conducted locally:

September  
Factor Evaluation System of Classification  
September 21-23, 1976 \$100.00

Contract Project Officers Course  
September 28-30, 1976  
No tuition

October  
Listening and Memory Development  
October 21-22, 1976 \$100.00

November  
Personnel Management for Supervisors  
November 16-18, 1976 \$125.00

December  
Accelerated Reading  
December 6-10, 1976 \$150.00

Optional Form 170 is due at least 30 days prior to the starting date of each course.

This list represents only those courses that have been confirmed. Other courses will be added to the list as soon as they are confirmed.

pools can greatly reduce hydrocarbon emissions while cutting down on traffic problems. When practicable, water based paints should be used, and open burning of trash should be avoided. Equally important, your local and state governments need your support for programs such as annual inspection and maintenance of autos to ensure that hydrocarbon reductions are being achieved. Collectively, you, industry and government at all levels can provide clean air for your community.

## SPEAKING ENGAGEMENTS

The following IERL/RTP employees are scheduled to attend conferences and give presentations:

J. Abbott, Chief, Particulate Technology Branch, D. Drehmel, Research Chemical Engineer, and R. Statnick, Chemist, 82nd National Meeting, AIChE, Atlantic City, N.J., August 29-September 1.

B. Harris, Sanitary Engineer, ASME Textile Engineering Conference, Charlotte, N.C., September 14, and Engineering Foundation Conference on Emission Sampling for Source Evaluation, Houston Woods, Ohio, September 15.

J. Kilgroe, Mechanical Engineer, 4th National Conference on Energy and the Environment, Cincinnati, Ohio, October 5-7.

W. Kuykendal, Mechanical Engineer, and R. Statnick, Chemist, ASME Committee Meeting, Cincinnati, Ohio, October 7.

J. Williams, Chemical Engineer, 150th Meeting, Electrochemical Society, Inc., Las Vegas, Nevada, October 18-22.

R. Stern, Chief, Process Technology Branch, 69th Annual Meeting, AIChE, Chicago, Illinois, November 28-December 2.

R. Hall, Research Mechanical Engineer, 1976 ASME Winter Annual Meeting, New York, N.Y., December 5-9.

Scholarships...cont'd from page 1

at NCSU, Raleigh, N.C., where she is majoring in psychology. Wanda's sister, Susan, had received two scholarship awards from EPA.

The EPA Scholarship Fund, which was established five years ago, comes primarily from honoraria and fees offered to Agency officials for speeches and published magazine articles.

Scholarship applicants must be children of career employees having at least three years of service, and must be full-time students at an accredited college or junior college. Children of deceased or disabled employees are also eligible. Selection is based both on need and academic performance.