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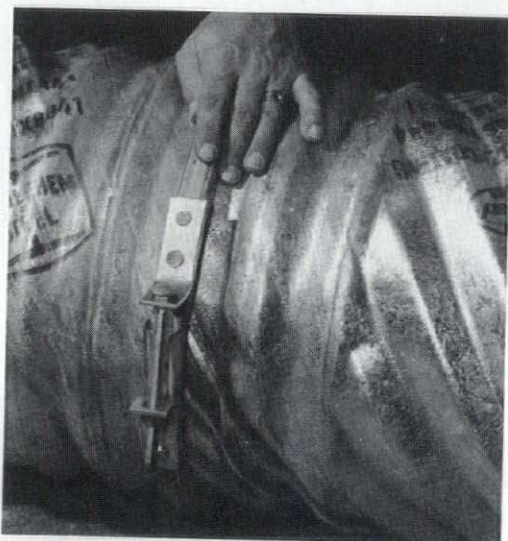
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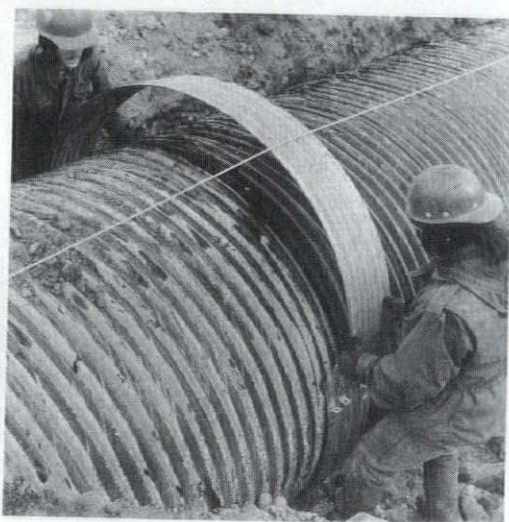


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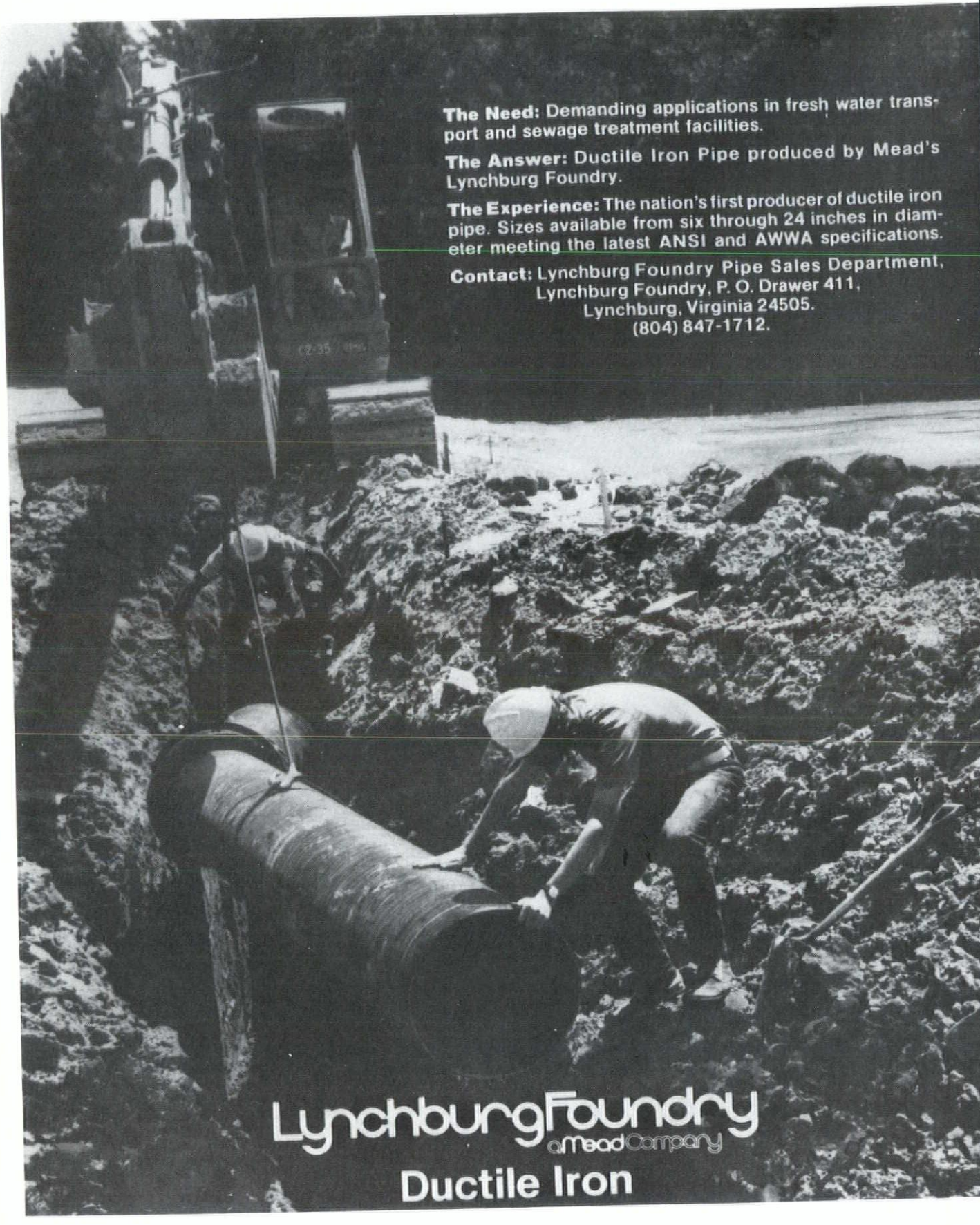
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ON OUR COVER: Harold C. King, left, who takes over as Commissioner of the Department of Highways and Transportation on July 1, is shown on the steps of the Department's building with Commissioner John E. Harwood. The two men have worked closely in the past and share a mutual respect professionally. For more of the story see pages 6 and 7 of this issue.





*The Commissioner takes a call, practicing a personal belief that it's part of the job to be readily accessible to citizens, the press, legislators.*

## *Highway and Transportation Commissioner Retires*

# Farewell to John E. Harwood

JOHN HARWOOD remembers clearly that summer morning 43 years ago when he first went to work for the Virginia Department of Highways.

The department's headquarters was housed then in the old State Office Building in the southeast corner of Capitol Square, and that was space enough in those days.

"We were supposed to report for work at 8:30 in the morning. I got there at 8 o'clock and waited on one of the benches outside because I didn't want to seem too eager ... but I was trembling all over," he recalled recently.

He was new to highway engineering. His only related experience, following studies at the College of William and Mary, was in helping with a National Park Service survey of Jamestown Island. He liked surveying, had asked about work with the state's fledgling highway program, and had been promptly hired. Economic conditions were hard, and jobs were scarce, but he was regarded as the right man at the right time for a seat at the drafting table.

It was, in retrospect, a good choice for John E. (for Ellis) Harwood, whose boyhood had been spent in his native Asheville, N.C. Perhaps it was an even more fortunate choice for Virginia and its highways.

He had not been settled long when Harwood began attracting attention as a quick learner and a willing worker. He went to night school to expand his knowledge and to sharpen his skills.

Then, like the careers of many others, his climb through the ranks of the department was interrupted by World War II. But after army duty in the Philippines, he returned to the agency, by then housed in its own office building at 1221 East Broad Street in downtown Richmond, a block from the Capitol. He was assigned to the location and design division to figure final cost estimates for planned road projects.

By 1954, he was assistant head of the division. Three years later, he was promoted to direct the division's activities, which were beginning to grow quickly in volume and complexity with development of the interstate highway system. No longer was it to be largely a

job of improving existing roads, strengthening bridges, and occasionally building a brand new highway. It became, instead, a task of planning and constructing an entirely new system of highways, and its influence on Virginia's transportation and economic future was certain to be enormous.

Tough decisions had to be made. Several billions of dollars were to be spent building the interstate routes, and the roads would change the patterns of growth for many communities. They would, in some respects, change the ways Virginians thought about themselves. The new superhighways would greatly reduce travel time, permitting people to explore the Commonwealth and beyond in a way they never done before. New generations would grow to adulthood without experiencing the tribulations of driving from Richmond to Washington, back, on old US Route 1 in its heyday, because they more likely would travel by way of Interstate 95. The interstate roads would bring the beaches and the

*(Continued on page 8)*



# Welcome Harold C. King

ASK HAROLD C. KING about the old image of highway engineers being narrowly guided by their slide rules, and he will tell you it's as up to date as that of bankers using quill pens to keep ledgers.

"Of course, we're still in the engineering business, because you can't build roads and bridges and other transportation facilities without engineering," he says.

"But the engineer's vital concern today goes far beyond the old stereotype. Today's highway engineer is concerned about the role of highways as part of the total transportation system. He's concerned about the environment, about community development, about people, because he's concerned about the effects of his highways on the world in which we live."

That is the attitude he brings to his new job as Virginia's state Highway and Transportation Commissioner. If any doubt that he means it, they don't know the man.

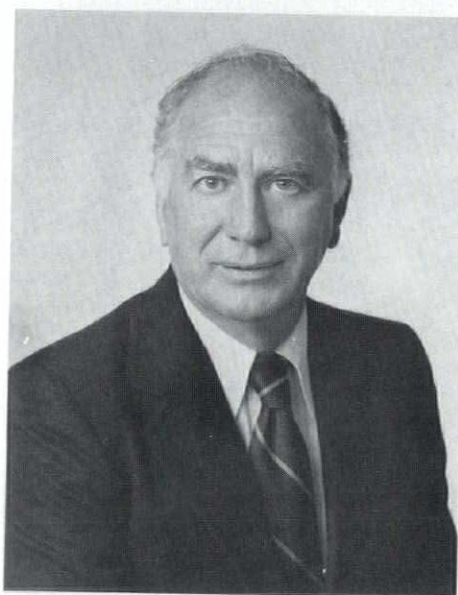
A decade ago, the Federal Highway Administration wanted to establish its first Environmental Development office in Washington, and looked about for somebody to get the job done. They selected King, who at the time was the agency's divisional administrator in Connecticut. And state highway administrators around the nation earned in those early days of the environmental movement that the FHWA and King meant business.

Six years ago, having by then requested and received the assignment as FHWA divisional administrator in Virginia, King told a meeting of engineers and road-building contractors in Lexington about his philosophy. "The '70s will be an era requiring the involvement of many in the development of a new highway or any form of transportation improvement," he said. "The political leaders, planning groups, and citizen participation at the neighborhood level will be integral parts. I regard it as a kind of ecumenical movement of highway people joining hands with other disciplines and others in public and private life to develop a transportation project that is compatible with nature and community values."

When King's appointment as commissioner was announced by Governor John N. Dalton in May, a

Washington newspaper reporter raised her eyebrows slightly over her conclusion that King's background was limited in urban mass transportation.

If the reporter had asked, she would have learned that King long has advocated improved public transit by bus. (He told the Lexington meeting of engineers and contractors in 1972, "Expanded use of bus transit to



HAROLD C. KING

accommodate the morning and evening commuter load will increase the people-moving capacity of highways. At the same time, it will lessen vehicle congestion and adverse environmental impact, and reduce the need for new highway facilities and the disruption they can cause in built-up areas.")

And if the reporter had asked how King himself travels between his home in the western Henrico County suburbs of Richmond and his downtown office, she would have learned that, often as not, it's by commuter bus.

King's transportation career began in 1947, following World War II navy duty and studies at Union College in Schenectady, N.Y., and Denison University in Granville, Ohio. A native of Plattsburgh, N.Y., he went to work designing bridges for the New York State Department of Public Works.

In 1957, he joined the FHWA (it was called the U.S. Bureau of Public Roads in those days) as assistant bridge

engineer in its Albany, N.Y., offices, and from 1959 to 1961 he was assigned to the agency's offices in Trenton, N.J.

For five years in the early and mid-'60s, he was with the FHWA offices in the imposing Federal Building a block north of busy Broad Street in downtown Richmond. It was in that period that King and his wife, the former Carole Crannell of Broadalban, N.Y., and their son and daughter fell in love with the Commonwealth of Virginia.

As in his previous assignments, King did well in his Richmond post, serving as the federal agency's second-ranking official in the state. His performance earned him promotion in 1966 to divisional administrator for FHWA's activities in Connecticut, and he was there in 1968 when summoned to Washington to organize the environmental office.

Knowing that much of his time would be spent traveling throughout the United States, and with the family's affection for Virginia still strong, the Kings bought their house in the Richmond suburbs. Carole and the children moved in, and were joined by Harold on weekends.

In 1970, the FHWA's top job in the Commonwealth became available. With the environmental office organized and operating well in Washington, King requested — and received — the assignment here. It removed him, geographically, at least, from the mainstream of the federal transportation hierarchy in Washington and from the almost certain advancement to very high levels in that hierarchy. But it was a careful, thoughtful decision, based on a personal and a family desire that Virginia be their home.

He wasn't forgotten in Washington, however. In 1974, he was tapped to head a four-member federally-appointed team to assist the government of Iran in the organization of a highway construction program. The following year, he negotiated the agreement under which United States aid was provided for that program.

The Iranian missions were temporary, and when that work was completed he resumed full-time duties in Virginia. He worked closely with the State Department of Highways and Transportation to expedite the federal-aid highway and related transportation

(Continued on page 12)



## John E. Harwood

(From page 6)



During Harwood's tenure as commissioner, the Department of Highways and Transportation and the Virginia Federation of Garden Clubs began "Operation Wildflower" to enhance the beauty of the state's roadsides, and the program was selected by federal officials as one of the nation's outstanding examples of highway landscaping. Here, the program is discussed (left to right) by Harwood, Mrs. Francis F. Carr, the federation president; Mrs. Robert Brewster, chairman of the project for the federation, and W.H. White, regional Federal Highway Administrator.

mountains closer for many Virginians and they would make it yet more inviting for Virginia Tech football faithful to drive to Blacksburg from across the state to fill the huge stadium on Saturday afternoons in the autumn. The roads would influence decisions for new industry seeking a place to settle and would help persuade Virginia to build a system of community colleges (sometimes called "commuter colleges" because of their accessibility by highway) offering higher education to tens of thousands every year.

But that's getting ahead of the story. No one could have foreseen, in the mid-1950s, everything that the interstate system would mean for Virginia. Harwood and his associates knew it would mean a great deal, however. They realized that it could be potentially damaging as well as beneficial, and they recognized the decisions as to the selection of route locations sometimes would spawn controversy.

In staff conferences, speeches, press interviews and correspondence, Harwood spoke of the importance of planning and building the highways carefully, and of blending them pleasingly into the areas through which they passed. That meant preserving where possible the natural roll of the land, protecting growths of trees in medians, and keeping intact the outcroppings of rock in the valley and the mountains, to open scenic vistas to travelers.

It would have been easier to build the ribbons of highway straight as an arrow. But that would have ignored the splendor of Virginia, and it was acceptable to Harwood. Instead, mile after mile, wooded medians were planned to meander up to 500 feet or more in width.

By 1965, Harwood's performance had won him promotion to the position of deputy commissioner and chief engineer of the department. Two years ago, when Douglas B. Fugate retired as head of the agency, which by then had become the Department of Highways and Transportation, Governor Mills E. Godwin, Jr., turned to Harwood to see out the unexpired term. "I have known John Harwood personally for many years and found him always to be a man of high integrity and outstanding ability," the governor said. For Harwood, once more it was a matter of being the right man at the right time.

He accepted the commission position, confiding to close staff associates that he might choose to complete the two years remaining of



Harwood (right) took a leading role in the annual Virginia Highway and Transportation Conferences at Virginia Military Institute. He is shown here at the 1976 conference with Governor Mills E. Godwin, Jr., and Major General Richard L. Irby, VMI superintendent.



rm and then follow Fugate into retirement. Those who knew him well hoped he would decide otherwise, and remain at the helm of what is the state government's largest agency. Those hopes were heightened early this year, when Godwin's successor, Governor John N. Dalton, reappointed Harwood to a full four-year term. "He has done an excellent job," the governor said.

Word of the reappointment came as Harwood rested in a Richmond hospital, awaiting surgery for cancer of the colon, a condition his doctors had found only days before. Fortunately, the detection was early and all signs point to complete success for the surgery. Harwood soon was back at work full force.

But the experience helped to renew the consideration of retirement, which he never had completely left his mind. He was 62, with a state government career spanning 43 years, and he and his lovely wife, the former Mary Lancaster Hubbard, were building a house in her native Floyd County.

They are a vivacious couple, filled with an enthusiastic love of life. They like to travel, to browse in antique shops, to relish the beauty of Virginia, and to be with their sons and daughters and the grandchildren.

And finally all of this persuaded John Harwood that he had not been wrong, 20 years earlier, when he began thinking about retirement. He discussed it privately with the governor late in March, and then he wrote the governor of his wish to step down as of June 30. "This has been a difficult decision and one reached reluctantly," he wrote.

Dalton responded: "As Commissioner, you have measured up in every way to the department's reputation for efficiency and integrity, and you have championed Virginia's interests through a difficult period. Your tact and diplomacy in these matters and your administration of the department have won you widespread respect and the admiration of many friends, including the present Governor."

Harwood's career earned him respect, well, at the national level. He served as an executive committeeman of the American Association of State Highway and Transportation Officials, and when the association appointed a task force last year to evaluate the curriculum of management training programs, it named Harwood task force chairman. The retiring commissioner also was on the board of directors of the American Road and Transportation Builders Association.

The man isn't given to boastfulness, and he would feel uncomfortable at the sea, but those who have worked with



*Several hundred citizens of Southwest Virginia gathered on a cold December day in 1977 to dedicate a new segment of Interstate 77. Shown at the ribbon-cutting are, from left, Horace G. Fralin of Roanoke, a member of the State Highway and Transportation Commission; Harwood; Governor Mills E. Godwin, Jr., and James A. Williams, a Wytheville newspaper publisher and president of the Great Lakes to Florida Highway Association.*



*Harwood and Everard Munsey, then chairman of the Arlington County Board, helped officially open a new bicycle trail in Arlington in 1973.*



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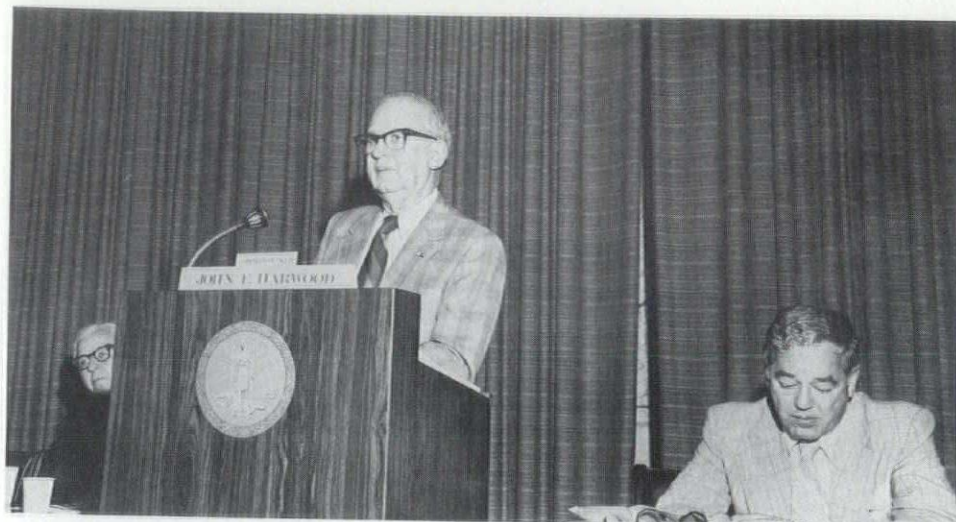


in these past two decades recognize that he, more than any other, is the chief architect of Virginia's interstate highways. And one of those highways, Interstate 95 between Fredericksburg and Woodbridge, once was described by a federal transportation official as one of the world's most beautiful roads. But Harwood's contributions to his adopted state don't end there.

As commissioner, he has provided strong leadership for an agency in transition, moving out from what, by statutory tradition, has been a highway emphasis to include public transportation and planning for other modes of surface transportation. During his tenure as commissioner, the department helped keep the trains operating on the Eastern Shore, prepared Virginia's first state rail plan, and developed new park-and-ride lots for commuters who travel to work by bus.

He has practiced what some executives only preach in regard to effective communication, and his openness and candor have earned the respect of the press corps and many political leaders.

His personality and his management style have won not only the respect but



*In his role as chairman of the Highway and Transportation Commission, Harwood presides at a public hearing on the distribution of highway funds.*

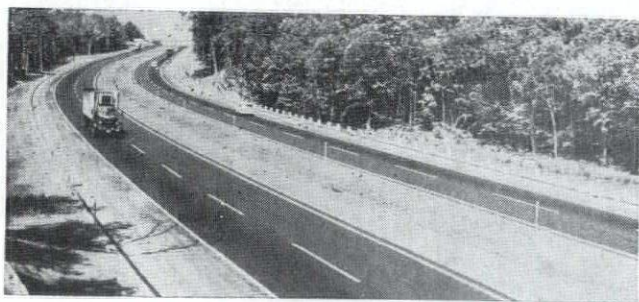
the warm affection of those who work with him. He encourages and carefully considers divergent ideas from his staff and then, as he must, he makes decisions. He possesses an all too rare executive talent for inspiring people to do their best work, and it stems in part from the fact that he is sensitive to and respects the feelings of others. "I've

known him 25 years, and I've never heard him be rude to anybody," says one associate.

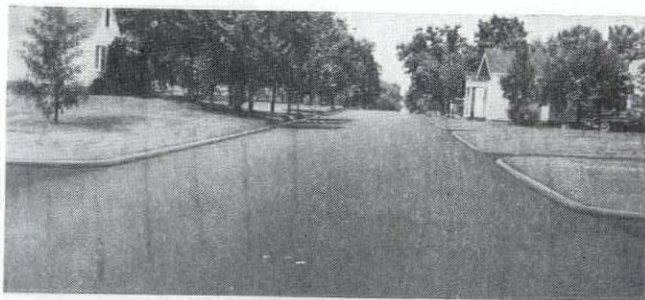
It's been a remarkable professional career for a man who chuckles at the memory of his own first day on the job, when he waited quietly on a bench in Capitol Square to avoid seeming too eager to get to work.

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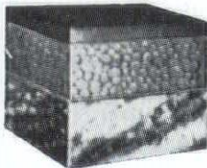


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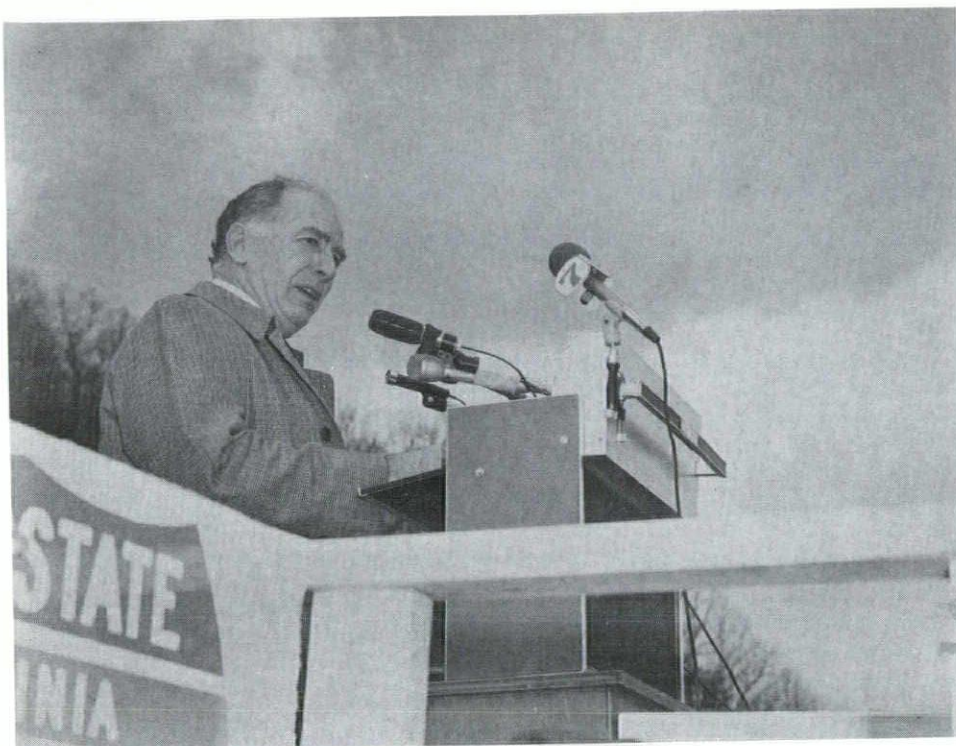
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## Harold C. King

(From page 7)



*As federal highway executive, King spoke at ceremony marking the opening of Interstate 77 in Carroll County last December.*



*King (third from left in antique car) joined State Senator L. Douglas Wilder (standing) and others for dedication of the Martin Luther King Bridge in Richmond in 1976.*

programs. While the FHWA doesn't actually construct highways, King's office represented Washington in the state's substantial federal-aid program. When federal aid was approved, King saw that federally-adopted standards and regulations were implemented, and he reviewed the state's decisions in respect to the location and design of projects to be financed in part with federal funds.

When Virginia officials led by former Governor Mills E. Godwin, Jr., went to Washington last year in a successful search for additional interstate system mileage to complete the Interstate 66 bridge-tunnel crossing of Hampton Roads, King was a strong and undoubtedly an influential partner.

When the state appealed what was considered exorbitant wage rates ordered by the U.S. Department of Labor for construction of Interstate 66 in Northern Virginia, King said he felt Virginia was correct. And the FHWA headquarters in Washington intervened on the state's behalf.

John E. Harwood, who is retiring as Highway and Transportation Commissioner June 30 after 43 years in state government, knows King well. While they have not always seen eye to eye on every question, they have worked closely and generally, have agreed on objectives. Professionally, they share a mutual respect and, personally, a warm friendship. "Hal King is a gentleman of exceptional merit and an administrator of extraordinary ability," says Harwood.

Governor Dalton said King will "go forward-looking, imaginative leadership for what is the largest and one of our finest and most important agencies." The governor said, too, that his new state position King will work in harmony with Wayne A. Whitham, Secretary of Transportation in the Dalton Cabinet, "to ensure the coordination of our efforts to provide safe, efficient highways and other transportation facilities in this time of concern about energy resources."

For his part, King is looking forward to the new association with state government. He understands that so he may be surprised at his decision, at age of 54, to shift from a successful federal career to become head of a state agency, taking a modest pay cut in the process.

"If I didn't think as highly as I do of the Virginia Department of Highways and Transportation, I wouldn't even have considered the position. But this is truly one of the outstanding state transportation agencies in the United States, and as we approach the conclusion of the interstate and arterial



instruction programs and become more deeply involved in public mass transportation, it will be an agency in transition with an exciting future. I want to be part of all that," King says. His family members share his enthusiasm. They were on hand for the Capitol news conference when the governor announced King's appointment. Their presence was characteristic, for they are close and highly supportive of one another.

His wife, Carole, once taught elementary school in Henrico County. Their daughter, Mrs. Sarah King Hornie, is a graduate of the University of Virginia and now is school nurse at Richmond's George Wythe High School. Their son, H. Carleton King, Jr., was educated at Virginia Commonwealth University and is financial advisor for the Richmond Development and Housing Authority. The Kings also share a deep religious faith, and always have reserved time to participate in church activities. King is an elder and membership committee chairman of Second Presbyterian Church in Richmond. He's been a Boy Scout leader, plays tennis, and, when he permits, likes to get away with the family to their cottage on the Appahannock River in Middlesex County.

The outlook for the future in his new job?

King will continue to ride the bus to work frequently, and he hopes to help persuade other Virginians to do likewise. "We have to try to cool the public's love affair with the automobile, relieve traffic congestion and conserve energy," he says.

He also will be an effective communicator with the public, the members of the General Assembly, and other governmental agencies. "I really feel that I might be able to help in this communications effort with the total federal establishment, because I am acutely aware of the federal involvement in all our state programs."

Other priorities will be to complete the interstate and arterial construction work as quickly as possible, while at the same time directing increased attention to the upgrading of the existing highway system for safety and "to capitalize on its people-carrying capacity."

King recognizes the unusual transportation problems in Southwest Virginia, where heavy coal-hauling trucks place an extra burden on the roads. "They need to have a good highway system while still being allowed to mine the coal and get it out to where it's needed," he says.

Those who know King are convinced the governor hardly could have chosen more wisely in selecting a successor to



*At opening of I-95 in Richmond in 1975: Left to right, Dale Wiley of the Central Richmond Association; Secretary of Transportation Wayne A. Whitham; City Councilman Raymond D. Royall; then Governor Mills E. Godwin, Jr.; Commissioner John E. Harwood, and King.*

the retiring Harwood. If King's name is not now a household word in Virginia, and it isn't, that may well be taken care of in the years just ahead.

With what appears unbounded energy and a near evangelistic zeal, he will be sharing his transportation philosophy with the people, and putting it to work in their behalf. It's likely to be a philosophy that finds widespread favor.

As the Norfolk Virginian-Pilot commented editorially several days after his appointment:

"Mr. King appears to be an outstanding choice to grapple with Virginia's transportation challenges. His experience in other states and abroad as well as in Virginia argues that Mr. Dalton went looking for excellence and found it."

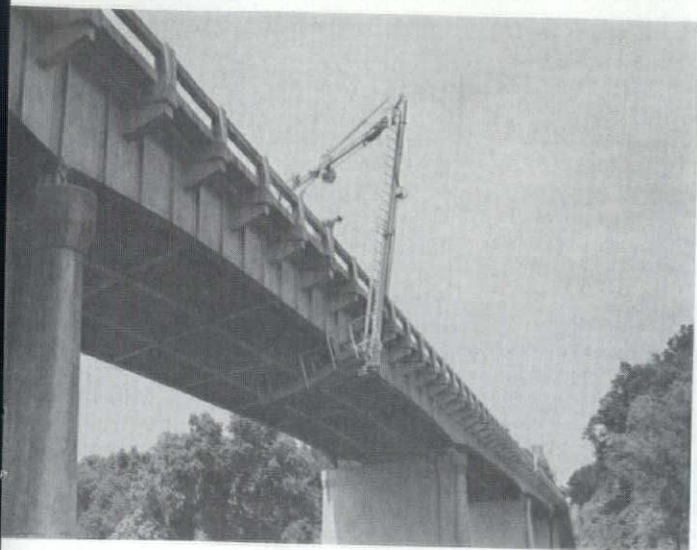


*At a news conference at the Federal Building in Richmond in 1974 — Left to right, W.H. White, regional federal highway administrator; Norbert T. Tiemann, former Nebraska governor then serving as the nation's Federal Highway Administrator, and King.*









*Bridge inspection on US 29.*



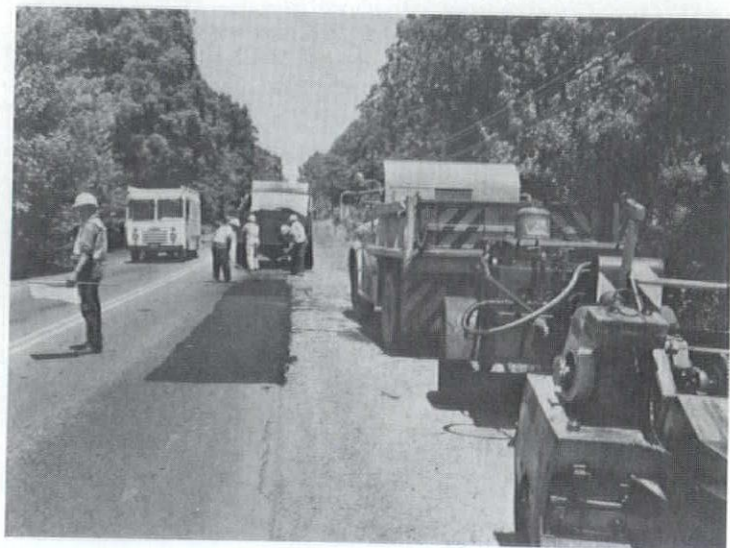
*Washing a bridge in Rockingham County.*



*Snow removal on Fauquier County secondary road.*



*Scrubbing a sign on Interstate 81.*



*Paving maintenance in Prince William County.*



to have more stockpiling in several areas to help us through the coming winter. If the winters continue like the past two, that will be a higher cost in addition to the inflation factor. We hope the repairs we've been doing since spring will make the roads more resistant to severe weather.

**Q:** Since about 1960, Virginia, like the rest of the nation, has been involved in the greatest road-building program in history. Now the interstate system is 92 percent complete or under construction, and Virginia's arterial network is 78 percent finished or under way. Are we approaching the time when annual maintenance costs will equal or exceed those of construction?

**A:** We're approaching the time when they'll certainly be a larger part of the budget. We spent about \$133 million in 1976-77 for ordinary and replacement maintenance. It was greater than in the past, partly because of the tremendous winter damage and partly because in the early 1970s we had an austerity program. But maintenance is becoming a bigger share of the cost, and that's part of a national trend. When we add new lanes, that increases maintenance — to resurface, to push snow from, and so on.

**Q:** There have been numerous campaigns over two decades against litter, and yet the Highway and Transportation Department has a huge annual bill for litter pickup. Do you see any decrease in the rate of litter, or any possibility that its removal costs may begin dropping?

**A:** I think the rate of litter has decreased. The cost hasn't decreased because of inflation, but the amount has somewhat stabilized at about \$1.1 million or \$1.2 million a year.

**Q:** What are some of the things you could have done with the money that was spent on litter removal last year?

**A:** Our Construction Division says that with that money, the department could have built perhaps four-tenths of a mile of interstate highway. It could have built about 1.3 miles of the arterial

network, the special group of high-grade primary roads. It could have built a large, multi-span bridge on the arterial network. But instead of the more spectacular uses of that kind, it could have been used for safety improvements — a few thousand dollars at a number of locations could have done a lot throughout the state to improve safety on some of our older roads.

**Q:** The motorist frequently sees highway signs that are smeared with paint or riddled with buckshot. Sometimes the sign that was there last week is missing. What kind of problems do you have with sign vandalism and theft?

**A:** It cost about \$340,000 last year to replace or restore defaced or missing signs, and that's not as much as it's been for some of the previous years. We have some problems with theft, but most of it is vandalism. Some are more important than others, but every sign is installed for a reason; if a sign is missing or unreadable, there can be a definite hazard.

**Q:** We've talked about rising costs and some of the problems involved in keeping up the nation's third-largest state-maintained highway system. What is the maintenance outlook for the years to come, and what will it mean to motorists?

**A:** Maintenance will become more sophisticated in the future. New equipment and materials are being developed that will make a definite difference. The demands on better maintenance probably will be greater as an economy-conscious and energy-conscious public goes to smaller cars — a good, smooth road can save 20 and even 25 percent on fuel costs, compared with a deteriorated one. Good maintenance for highways can mean less maintenance for automobiles.

We have a tremendous investment in the system as a whole, and it behooves us to protect that investment. We can only do it with good maintenance.

## Maintenance Payments

• In addition to maintaining a 52,000-mile state highway system, the Virginia Department of Highways and Transportation also will make about \$29 million worth of street maintenance payments to cities and towns for the 1978-79 fiscal year.

The maintenance payments are distributed according to a formula set by the General Assembly, providing \$2,500 per moving-lane-mile for extensions of the state's primary highway routes within the cities and towns, and \$1,500 per moving-lane-mile for other local streets that meet certain surface and width requirements.

(A moving-lane-mile is a length of street lane over which vehicles can move at peak traffic hours. Lanes which are used for parking at those hours don't qualify for maintenance payments.)

The fiscal year total represents an increase of about \$1 million over payments for the previous period. The figures are subject to adjustment as the localities bring other streets up to the necessary standard and request addition of those streets to the maintenance payment program.

Sixty-five Virginia cities and towns maintain their own local streets and share in the maintenance payments with the Highway and Transportation Department. Individual payments range from approximately \$50,000 for Ashland to more than \$3 million for Virginia Beach.

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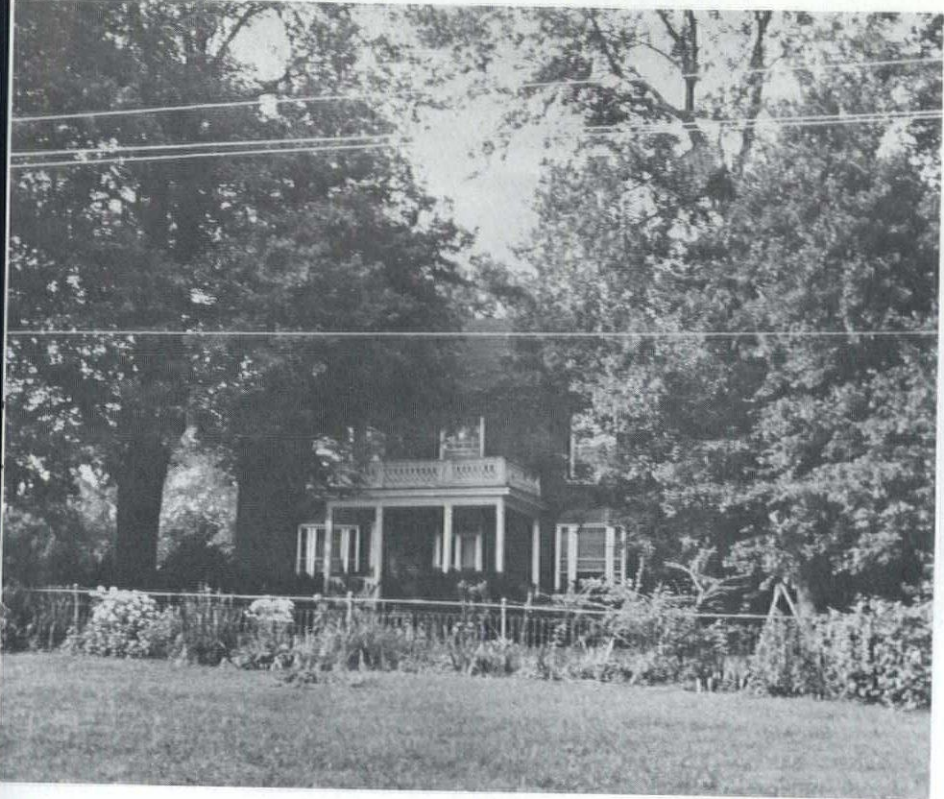
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HARTWOOD

## *It Wasn't Just a Road*

In the late 1960s, the Virginia Department of Highways (now Highways and Transportation) was planning to widen a segment of two-lane US 17 in Stafford County. The intent was to add two new lanes and a median to provide a four-lane divided highway.

This has been a common practice in development of the state's arterial network of highways, a group of high-grade roads of the primary system to link communities not connected by the interstate system.

A public hearing was held on the location of the improvement, and no objections were raised. It appeared the project could proceed without any adverse effects to the community.

But an old house stood to be taken by the improvement. It wasn't known to the historic Landmarks Commission as a structure of historic significance, but a local organization of historians expressed concern, and the Highway Department signed an investigator to find out more. The Landmarks Commission also began search.

The result: Hartwood, a home built in the 1820s, was saved by a relocation of the highway improvement. The Landmarks Commission found the structure to be "a textbook of early-nineteenth century masonry craftsmanship."

Because the highway improvement wasn't just a road, it was possible to save a building that was more than just a house.

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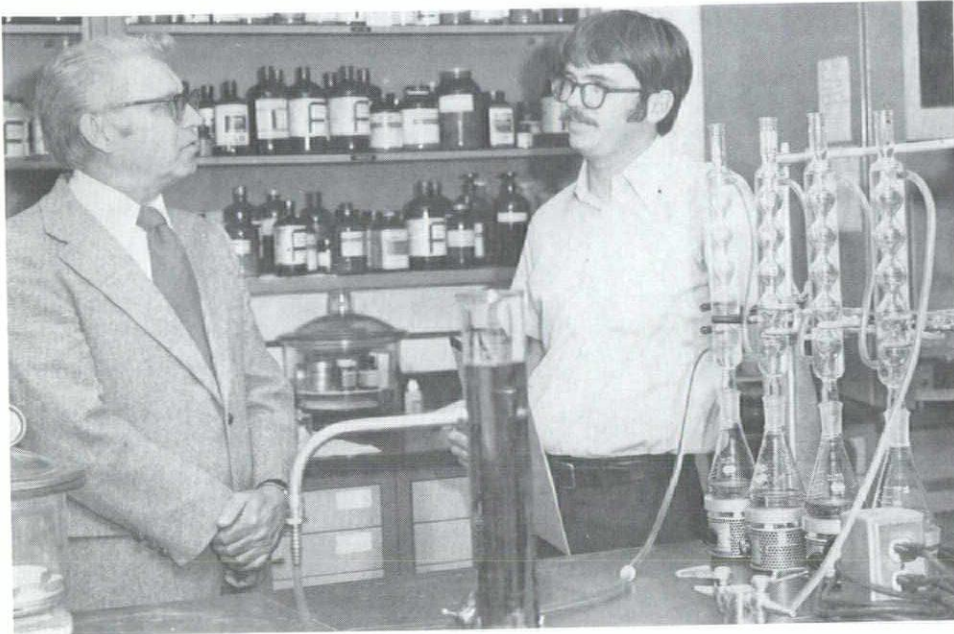
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# Transportation Research in Virginia

By Jack H. Dillard

Virginia Highway and Transportation Research Council



John W. Reynolds, chemist, and Jack H. Dillard, (L) head of the Research Council, discuss one of the chemical analyses performed on wastewater from the recycling system developed by the Council and installed at the Fairfield rest area on I-81. Since the recycle system was put in use in November 1976, it has treated more than 1.5 million gallons of wastewater with no discharge to surrounding streams. Added to this environmental benefit is a 95% reduction in the demand for fresh water. This savings in fresh water of 1.4 million gallons allowed keeping the rest area open during last year's drought.

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FEW people have an everyday awareness of the extraordinary changes that have taken place in the transportation field over the past twenty years. It is pretty much human nature to accept our highways as having always been about like they are now - until we reflect. Then one will recall the old two-lane highways that were the main traffic arteries up and down the East Coast. Route 11 through Virginia went through approximately fifty towns, generally down their main streets, while making its way over 300 miles from Winchester to Bristol. In a trip beyond Bristol to, say, New Orleans, the traveler passed through a like number of small towns and had to work his way through the downtown congestion of Knoxville, Chattanooga, Gadsden, Birmingham, Tuscaloosa, Meridian and Hattiesburg enroute to his destination. Along the way he probably was stopped by hundreds of traffic lights. Now he can make the journey along the four-lane divided I-81, where he sees no traffic lights for thousands of miles and no longer gets caught up in the endless strings of cars and trucks traveling 60 mph in opposite directions with only a few feet separating them.

But the changes in the highway planning itself are only the obvious aspect of the progress that has been achieved. In his service to an increasingly mobile public, the engineer has had to accommodate the exuberance of the beautification movement, the safety passion, the environmental euphoria, and the transit fervor while trying to stretch the every-diminishing value of the dollar. And, forced to accommodate the changes in only a few decades, the highway industry has had to turn to research for new techniques and materials. Without research the transportation system could not have been transformed economically and safely. Many research agencies have contributed and still do contribute, and certainly the Virginia Highway and Transportation Research Council has done more than its share.

Organized in 1948 under the sponsorship of the Virginia Department of Highways and the University of Virginia, the Council has grown into one of the outstanding applied research groups in the nation. Located at the University in Charlottesville, the Council is currently housed in the Tilton E. Shelburne Research Building, so named in recognition of the distinguished engineer who guided the operation of the Council over the first



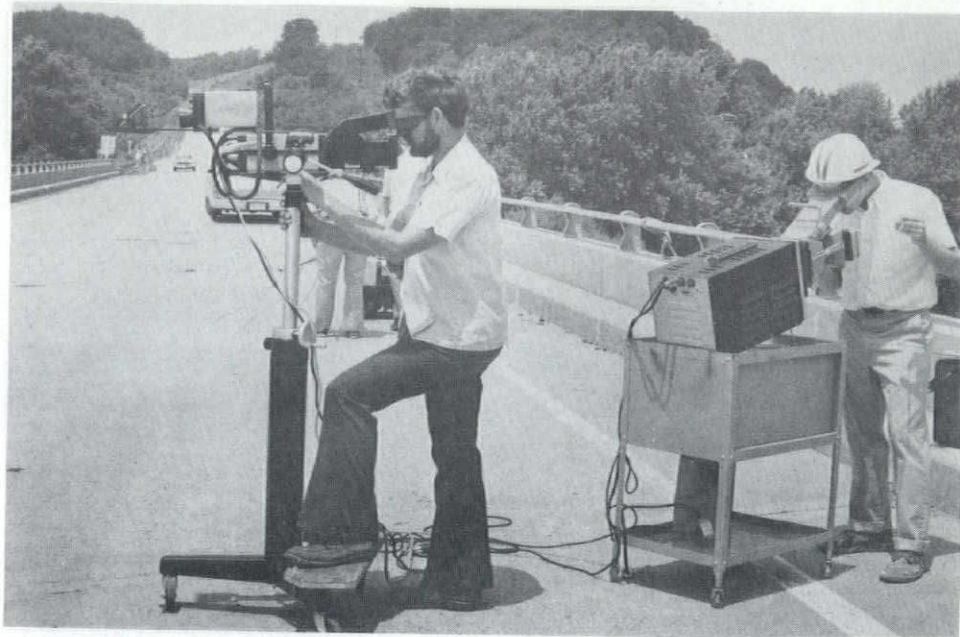
twenty years of its existence. The broad policy of the Council is established by a five-member administration board composed of the chief engineer and the director of planning from the Department of Highways and Transportation, the dean of the Engineering School and head of the Civil Department from the University of Virginia, and the head of the Council. All operating funds, however, are derived from either the Department of Highways and Transportation or the Highway Safety Division of Virginia, and the employees are considered a part of the staff of the Department of Highways and Transportation.

In addition to the permanent staff of thirty-two specialists, ten faculty members of the University and ten to fifteen students in the Council's graduate assistantship program are employed in the research effort. The diversity of the highway transportation field and the need for specialization have necessitated a high level of training and expertise in many subject areas. Members of the professional staff are required to hold a Master's degree and many have a doctorate.

The Virginia Department of Highways and Transportation has encouraged a dynamic applied research program and provided the Council the funds and independence essential for the conduct of that program in an objective manner. The Council has benefited also from an innovative organizational and funding structure which permits great flexibility in project selection and high motivation for the research staff. The quality and depth of the permanent research staff is probably unmatched in any other state transportation research agency.

The Council was one of the first state research agencies to integrate operational personnel into the planning research and into the implementation of research findings. Approximately a hundred members of the operations and field staff of the Department of Highways and Transportation are intimately involved in the research program through participation in the activities of the seven advisory committees that guide

The advisory committee arrangement constitutes a force for innovation and change within the Department and counteracts any reluctance to accept change that sometimes besets large governmental organizations. Input from contractors is also mobilized through these committees. These members of the private sector have been most supportive of the innovations emerging from research and have operated fully in installing field test sections, often at their inconvenience and own expense.



*Infrared scanner system adopted for use in locating and delineating concrete delaminations of different severities in bridge decks. Experimental results have indicated that the technique is more effective than the conventional techniques using sounding devices.*

The projects conducted by the Research Council are as varied as the highway transportation field itself, as is illustrated by the following examples.

Recent research on structures has included a study of the load-carrying capacity of bridges built in the 1920-45 period that provided information for officials responsible for increasing load limits and granting overload permits; the development of a trussed web girder composed of reinforced plastics and exhibiting a ratio of 107 for live load to dead weight; the experimental use, with much success, of a technique for constructing bridge decks in two courses that allows economy in the use of materials; the adoption of infrared thermography for detecting delaminated areas in concrete decks; and evaluations of prestressed panel sub-decks and of press-lam timber in bridge construction. Environmental research comprised studies to monitor and alleviate air pollution and noise in highway corridors; and numerous projects leading to improved control of erosion and sedimentation through the use of straw barriers, silt fences, and vegetative ground cover. Several preliminary suggestions have come from an ongoing study of energy use in the Department's operations, background information has been developed for a switch to the use of gasoline-methanol blends in Department vehicles should economics dictate such a move, and experimental work has proven the feasibility of re-

cycling asphaltic pavements. Toward the dual goals of conserving energy and increasing the people-moving capacity of existing roadways, recommendations have been developed relative to organizing and operating van pools and to the planning of express bus-fringe parking facilities. In the realm of traffic safety, attention has been given to the effects of the energy crisis on accidents, the safety characteristics of precast concrete traffic barriers, for use in construction areas, the use of raised pavement markers to prevent wrong-way driving, and to drinking-driving attitudes, knowledge, and behavior. Rounding out the research activities are studies such as the ongoing evaluation of the Department's public hearings and relocation assistance program, a comparison of semiannual and annual motor vehicle inspection programs, the development of criteria for the preservation and adaptive use of historic highway structures, and a determination of the impact on travel of the removal of tolls on major highway facilities in Tidewater Virginia.

Noteworthy activities in addition to those cited above are the limited participation of the staff in the formal instructional program of the University, the development and presentation of short courses, and the worldwide dissemination of research findings through the publication of reports and the presentation of papers to professional and technical groups.



# VIRGINIA'S OUTDOOR ADVERTISING

By Donna L. Purcell, Editorial Assistant  
Virginia Department of  
Highways and Transportation



*Logo signs such as this one for nearby gasoline stations are becoming a familiar sight along Virginia's interstate system.*

WHY do we still see those jumbo billboards along Virginia's interstate highways when federal and state laws have been passed to remove them? Well, according to the state's Department of Highways and Transportation, those signs ARE coming down — slowly, but surely.

Boyd Cassell, coordinator of the operations and maintenance section in the environmental quality division of the department, says the development of current policies regarding billboards has had a long and complicated path to follow.

"Back before the interstate system was started in the 1950s, policies concerning the size and spacing of billboards along Virginia's highways were pretty permissive," Cassell said. "Emphasis was placed mostly on whether or not the sign owner had a permit for the sign, and permission from the landowner, and on the appearance and condition of the sign.

"But through the passage of federal and state laws concerning billboards, policies are much stricter now," he said.

After the interstate system got under way, minor changes were made in the billboard policies, but it wasn't until 1965 that they got some real clout.

The 1965 Highway Beautification Act — the Lady Bird Act, named for

President Johnson's wife's strong interest in the issue — was passed in an effort to control the ever-increasing mass of billboards and posters which were becoming jarring eyesores along the country's roads. The act retained the 1958 incentive bonus available to those states participating in the program which gave them one-half of one percent of the money spent on interstate highway construction. Virginia received \$239,000 of the bonus.

The act, made to strengthen outdoor advertising controls and including provisions related to highway beautification, generally prohibited billboards within 660 feet of the interstate system and federal aid primary systems. There were a few exemptions to the act, Cassell said. Areas where the interstate right-of-way overlapped the right-of-way acquired prior to the advent of the program were not included, and areas zoned for commercial and industrial use, or unzoned areas being used for those purposes, were also exempt.

Amendments to the 1965 act extended federal controls to federally-aided primary roads, eliminated the overlapping right-of-way areas, and included size, lighting, and spacing for signs located in commercial and

industrial areas on both the interstate and federally-aided primaries.

The states had good reason to enact the legislation, otherwise they faced 10 percent penalty on federal money appropriated for highway construction — a possible loss of as much as \$2 million annually.

Signs already in existence on the effective date of the adopted state law are classified as "non-conforming" and must be bought from the sign owner and landowner before removal. Federal funds cover three-fourths of the cost; state funds one-fourth. Even though the act was made into law in 1965, it wasn't until 1970 that federal funds became available for sign removal.

After eliminating a "clutter" of billboards on I-95 in Caroline County, the department won special recognition from the U. S. Department of Transportation (DOT). It cost approximately \$100,000 to compensate the landowner and advertisers for the nine non-conforming signs.

Some advertisers set their signs back 661 or more feet from the interstate and then made them super-sized. The state had serious reservations about buying small signs within the 660 foot limit when a jumbo billboard was just behind the limit. So, in order to have a meaningful program of sign control and



removal, Congress, with amendments to the act in 1975 and 1976, prohibited any billboards within sight of interstate and federal aid primary highways (located outside of urban areas), no matter how far away.

Some advertisers were understandably upset with the new law, but Virginia had become involved in a successful project involving both the advertiser and motorist.

In 1966, the Federal Highway Administration proposed standards for specific information signs and chose Virginia for an experimental project. Informational signs with logograms of nearby gas, food, lodging, and camping facilities were placed on Interstate 95 between Ashland and Woodbridge for nearly a year.

The Virginia Highway and Transportation Research Council in Charlottesville made studies and surveys of motorists' reactions to the signs (after their removal) and found them to be quite favorable.

National standards and criteria for the signs were set in 1969 and the provision was added to the 1965 Highway Beautification Act. In 1972, the Virginia Highway and Transportation Commission authorized a pilot project of the logo signs for I-95 between the North Carolina state line and Woodbridge near Washington, D. C. The state's criteria are even more stringent than the national.

The blue 14 by 18 feet signs hold the easily recognizable logograms (supplied and maintained by the individual

businesses) of the closest qualifying establishments, according to W. C. Nelson, Jr., an assistant traffic and safety engineer for the department. The six gas stations shown are within one mile of the exit ramp, the four food and lodging facilities are within three miles, and the four campgrounds are within ten miles.

The businesses are interviewed to make sure they qualify for placement on the signs. Some of the criteria involve having a public drinking fountain and public telephone, rest rooms, and a specific number of operating hours.

If a new qualifying place of business opens closer to the ramps, the one furthest away must come off the logo sign after having been there for at least one year.

Since their implementation in 1972, the logo signs have become extremely popular and people all over the state want them used in their area.

"But we can't do that right now," Nelson said. "The federal government pays 90 percent of the cost and the state pays 10 percent. At the moment, there are other priorities to consider."

"However," he went on to say, "the Highway and Transportation Commission has authorized logo signs for all of I-81 and signing for I-64 is in the preliminary stage." The signs are not put in urban areas, since it is felt the motorist can easily find the necessary establishment once he gets off the interstate.

Oregon has also established the logo sign program and many other states

across the country are in various stages of developing similar programs for themselves.

At this point, the only outdoor advertising signs permitted other than logo signs are:

Class 1 — official and directional signs to educational and historic facilities, or natural phenomena such as Luray Caverns, and areas naturally suited for outdoor recreation. These signs are limited to a certain size.

Class 2 — on-premise signs such as "This property for sale."

Class 3 — signs in commercial or industrial areas such as a cigarette billboard advertising a tobacco factory.

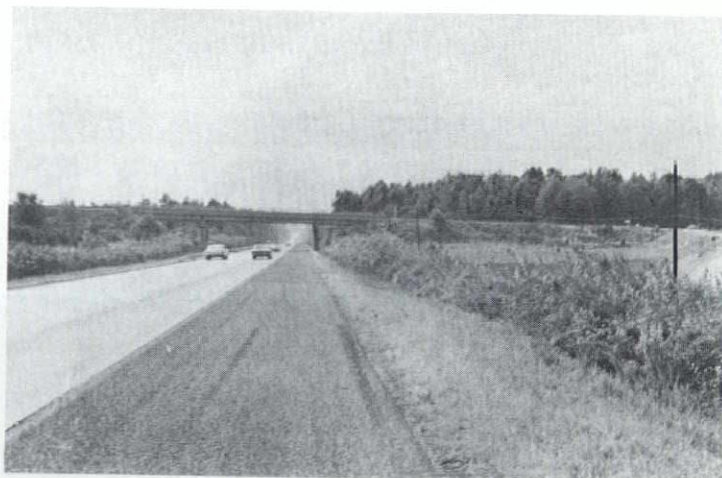
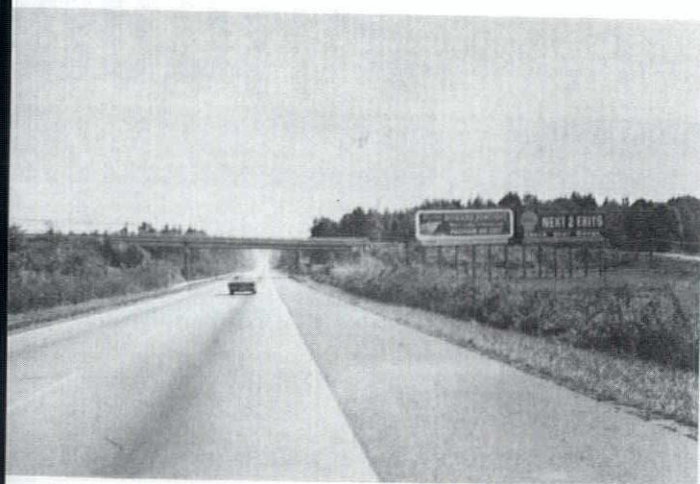
There have been more than 434,000 signs removed from highways all over the state since the 1930s, according to Cassell. These include illegal signs, and ones which are abandoned or whose permits have expired.

In 1976-77, 327 illegal signs and 5,638 illegal posters were removed, and 336 non-conforming signs have gone the same route. There are over 3,700 non-conforming signs left.

Non-conforming signs generally are removed first from routes along areas of natural beauty. However, the department is currently expanding the removal program to procure the signs as requested by their owners.

"This helps the advertisers better plan their advertising budgets and schedules," said Cassell.

So, you see, those giant billboards are coming down, Virginia. It just takes a little time and patience.



Virginia's Department of Highways and Transportation won special recognition for eliminating a clutter of billboards along I-95 in Caroline County in 1973.

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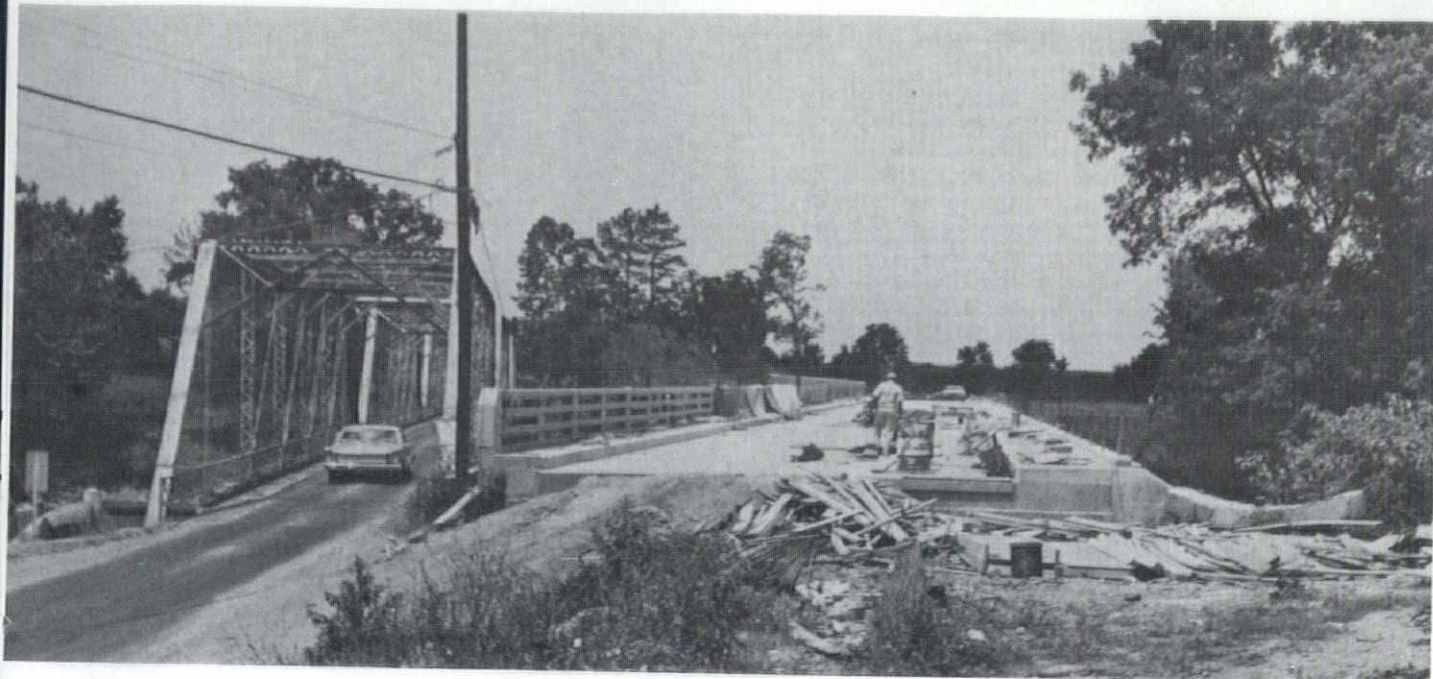
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Replacement of old, narrow, or substandard bridges with new, wide structures such as this one over the Rapidan River make driving safer for Virginia's motorists.

## SAFETY IMPROVEMENTS ON VIRGINIA'S HIGHWAYS

*By Donna L. Purcell, Editorial Assistant  
Virginia Department of  
Highways and Transportation*

NO DOUBT ABOUT IT, spot safety improvements and crash "cushions" are decreasing the number of deaths, injuries, and accidents on Virginia's highways.

Virginia's Department of Highways and Transportation has been developing and testing a variety of methods to make the state's roadways safer for today's motorist.

For example, a recent study made by the department's traffic and safety division comparing the two years before and after improvements were made at 360 locations in 1973 showed a 57 percent decrease in fatalities — a drop of 42 to 18 highway deaths.

J. P. Mills, Jr., the department's traffic and safety engineer, said the study showed total accidents at the 360 locations were down from 2,205 to 1,899, while accidents causing injuries decreased from 534 to 473 and fatal accidents dropped from 32 to 15.

Improved sight distances and pavement grooving produced some of the more significant decreases in accidents.

Improving the distance a motorist can see before entering the flow of traffic resulted in a 100 percent decrease in fatalities, a 43 percent drop in injury-causing accidents, and a 13 percent drop in the total number of accidents at 18 locations, Mills said.

Ever notice those grooves in the pavement of some roadways? They are there to help decrease hydroplaning when you're driving along a rain-slicked highway. Pavement grooving in five locations has resulted in a decrease in the total number of accidents from 271 to 138, or 49 percent, and decreased injury-causing accidents from 70 to 29, or 59 percent.

Other safety improvement projects included widening and improving the alignment of roadways, removing raised medians, improving 19 intersections, and eliminating substandard bridges.

Mills said present and future projects include the replacement of old-style guardrails with newer, stronger types made to prevent possible vehicle impalement (see sidebar).

In total, the projects cost \$6,510,309, of which state highway user taxes financed \$4,605,412 and the federal Highway Trust Fund paid \$1,904,897.

As mentioned before, crash "cushions" or impact attenuators are also responsible for reducing the number of



Crash "cushions" such as these sand-filled containers help reduce the severity of vehicles hitting immobile objects such as bridge piers.



deaths, injuries, and amount of property damage incurred in an accident. Cushions at 48 locations on Virginia's highways reduced what could have been 50 severe or fatal accidents to 10 from which the driver could walk away and 40 others from which motorists promptly resumed their travels.

The cushions are designed to reduce the severity of accidents involving vehicles hitting immovable objects such as bridge piers and concrete abutments. When a vehicle strikes one of these devices, the energy released by the impact is dispersed throughout the device and the vehicle is slowed down. The devices help cushion the impact, thereby lessening the possible damage to the driver and vehicle.

"It was significant to note that although many impacts were in excess of 50 miles per hour, the operator was able to leave the scene," said Mills. "This certainly attests to the effectiveness of these devices." If the devices were not there, the vehicle could collide abruptly with a solid stationary object and the collision could result in severe injury or death.

From the 10 accidents actually investigated by law enforcement officers, there were no reported fatalities and only two injuries.

Mills said the three most promising types of cushions are:

1) Sand-containing devices — high-density polyethylene structural foam cylinders — which yield upon impact.

2) Non-freezing water-filled vinyl cylinders placed in groups called "clusters" or "sandwiches" which also disperse energy when hit.

3) Cylindrical cells of lightweight vermiculite concrete wrapped with coil.

Each site with a hazard deemed impossible to eliminate or otherwise improve is evaluated for its special characteristics and the safety device judged most effective for that site is placed there.

The impact-reducing devices were installed at the 48 locations for a total cost in excess of \$500,000 and approximately 50 more locations throughout the state are scheduled to have the devices installed.

Of course, Mills said, Virginia must remember that spot safety improvements and crash cushions will never be a substitute for good defensive driving habits all motorists should practice. But they are there to help ensure safer driving.



*Hopefully, scenes of vehicles speared by guardrails will be eliminated with the installation of new, safer guardrails.*

## Scary, isn't it?

• Severe injuries and even deaths have been the results of accidents like the one you see here. But due to the development and implementation of new guardrail styles, hopefully this scene will be eliminated from Virginia highways.

The Virginia Department of Highways and Transportation is introducing safer guardrails along the state's roads, said E. S. Coleman, Jr., an assistant location and design engineer for the department.

A guardrail with curved-down ends replaced many of the open-ended rails, but vehicles hitting the rail at high speeds were often flipped over. Now, two other types are being installed.

The preferred style features ends which are buried into the cut slope. This serves two purposes as the vehicles can't get to the end of the rail and are prevented from getting behind the rail and into a dangerous area such as a sharp drop-off.

The other type is the Breakaway Cable Terminal, or BC. The first two posts on the rail are grounded by a cable, but will break away if hit by a vehicle, thereby slowing it down and preventing it from being speared. These are just now being installed along Interstate 64 and one is south of King's Dominion on I-95, said Coleman.

An updated design of the guardrail now in use helps keep a vehicle from being "pocketed" or "captured" after it hits the rail. The posts behind the rail are not attached directly to the rail, but are separated from it by a block. The posts are all six feet, three inches apart — half the distance featured in the older model.

The closer posts allow the vehicle to slide along the rail instead of bringing it to a sudden stop. The vehicle can even move back into the stream of traffic without much difficulty.

These guardrails are being used on all new installations and will gradually replace the old style along the interstates. But no matter what type of guardrail is installed, it is really a compromise for the driver, said Coleman.

"A guardrail is only installed when it's the lesser of two evils," Coleman said. "It's a bigger target for a motorist to hit, but it's safer than hitting whatever it's protecting the motorist from."

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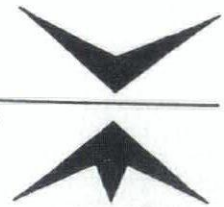
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# THE TALL, GENTLE MAN FROM BOWLING GREEN

## A Reflection on Senator Paul Manns

By

Lola A. Murray

I guess I never really noticed Senator Paul Manns during my two years as a Legislative Aide, although his height and slimness reminded me a great deal of my father. I do recall one instance in which Paul's good friend, Speaker of the House of Delegates John Warren Cooke, chided him in a humorous fashion for coming into the House and not following the somewhat rigid procedure for announcing the Senate's disposition of a bill. Rather than proceeding through the somewhat cumbersome language of the previous Senator's announcement, which went something like the following, "Mr. Speaker, I have been directed by the President of the Senate to inform the House that the Senate insists on its amendments to House Bill Such-and-Such and respectfully asks for a Committee of Conference," Senator Manns, having heard this same declaration many times during his years in the legislature, said with a twinkle in his eye and a lift to his voice, "Well, I want you to do the same thing with this House Bill!" Somewhat taken aback (Senator Manns was known for his adherence to the rules of the assembly) Speaker Cooke said, "Will the Senator from Bowling Green please repeat his announcement?" John Warren, as is his fashion, then thrust his tongue into the side of his cheek, looked at both sides of the House, and then held back a laugh that was building inside him. The Senator, ever gracious and obliging, then proceeded to retrace his words and, in the language he knew by heart, made the announcement he had been instructed to deliver. At first the House was silent, but as he went on, small outbreaks of laughter began to trickle forward until, at the end of his speech, there was genuine laughter, not at the Senator, but with him as he sheepishly strode back from the microphone.

As I mentioned, the times were few when I had paid great attention to the Senator from Bowling Green. This was to change, though, as I embarked upon a new profession. I had heard of an opening with the newly-formed Governor's Council on Transportation in March of 1976. I made an appointment to see Senator Manns, re'sume' in hand, and needing a job very badly. My first visit with him, although not of the earth-shaking variety, provided me with some insight as to the type of individual who, as Chairman of the Council, would be my future boss. I was treated with the utmost

respect and courtesy, qualities I was to observe frequently in the Senator. In the following two years, I observed these traits often in his dealings, not only with me, but with everyone he encountered.

Paul was truly a Southern Gentleman. He made those he had met recently feel as close to him as those he had known for years. He was, in the truest and rarest forms, a friend. He was never too busy to stop for a few moments to chat, to ask about your family, and to honestly let you know that he was concerned and involved if things were not going well for you.

I remember one day I told him that I would be glad to provide him a ride to McLean where the Council was holding a meeting. As I journeyed on Interstate 95, I was struck with the thought, "What in the world can I talk to him about for two hours on the way up and two hours on the way back?" I am one of those persons who feels that silence over a long period of time must prove that I am a horrible conversationalist. My fears, however, were soon diminished. No sooner was Paul in the car than the chatter started. We talked about everything under the sun. I even found that when I brought him back home that afternoon, I was not ready for the conversation to end. It was almost like two small children who cannot wait for school to start the next morning to catch up on all of the events of the past 12 hours. There was so much more to say.

I guess I feel that way now. I wish he were here so that I could say all the things that we mortals fail to express until it is too late. I imagine there are a multitude of people, not only in Virginia but across the country, who share my sentiments.

To say goodbye is all we could do, but to know that he touched our lives is comfort to us. He shall be missed, but he will never be forgotten. He was truly a friend — the tall, gentle man from Bowling Green.

*Editor's Note: The foregoing article, written by Lola Murray, is a tribute to a man whose passing has left a void in the lives of all who knew him or knew his work. Mrs. Murray is a staff assistant for the Governor's Council on Transportation and has worked with this agency since its inception, April 1976. A native of Roanoke, she moved to Richmond in 1970, and she and her husband Don reside in Bon Air.*

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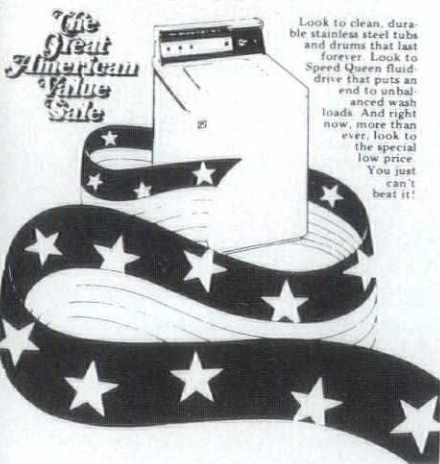
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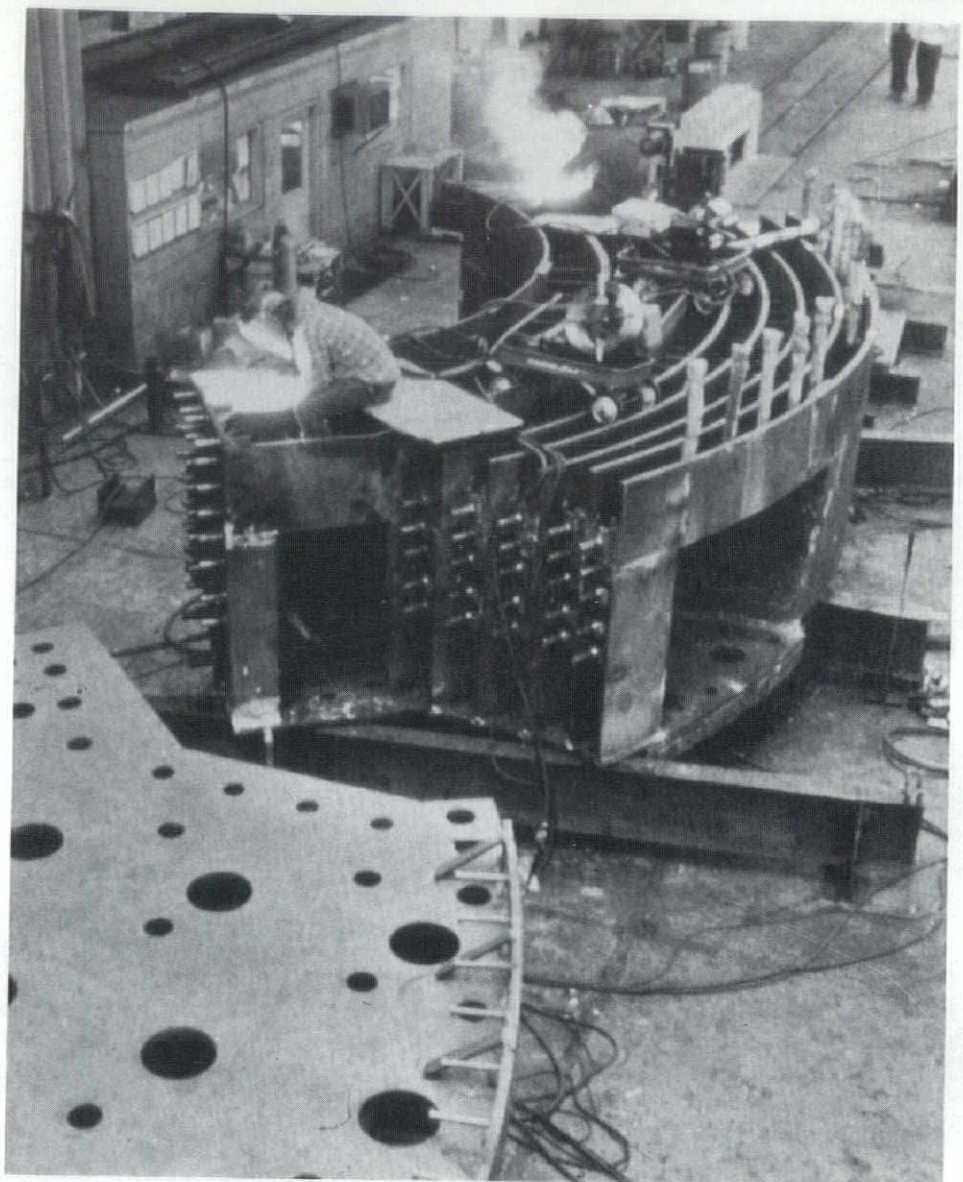


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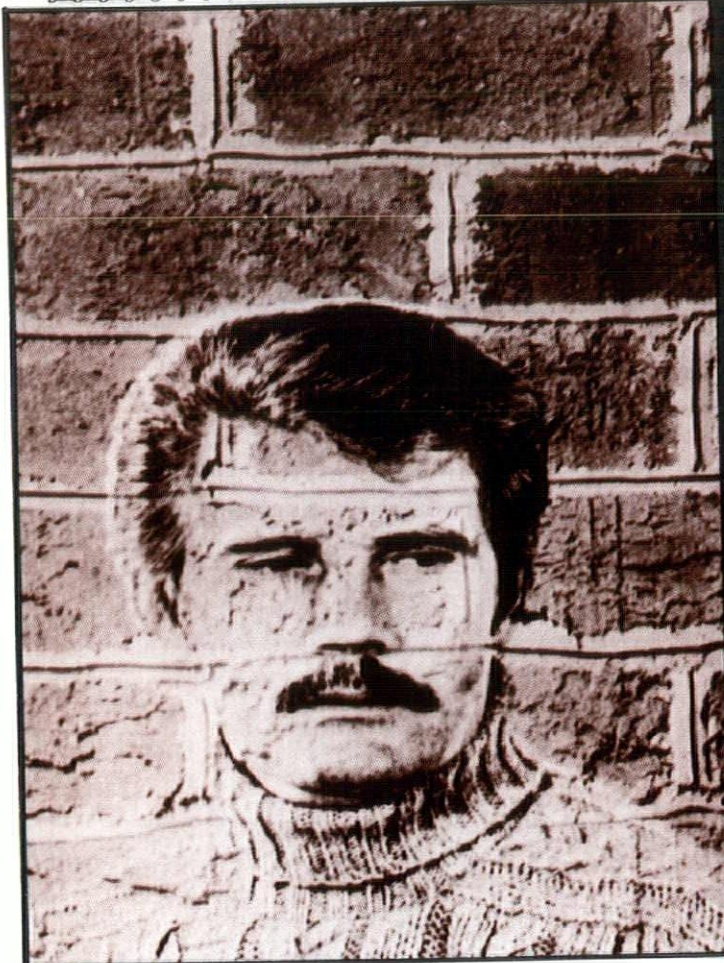
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# VIRGINIA A.G.C. REVIEW

OFFICIAL SECTION VIRGINIA BRANCH A.G.C.



## ENERGY GAINS IN IMPORTANCE IN BUILDING CONSTRUCTION

*By James E. Gehman  
President, Enercon, Inc.  
January 1978*

SINCE the 1973 Arab oil embargo contractors, architects and building owners have become increasingly concerned with the cost of operating buildings. Prior to that period the market demanded lower first cost and little or no attention was directed to the long term or "life-cycle" cost. But with energy prices tripling in the last 4-5 years, energy consumption has become a primary concern. To understand why our priorities have changed we need to consider the sources of our energy.

We as a nation consume 35% of the world's energy, more energy per capita than any other country in the world. This is partly because we have a highly mobile and technological society. The world prominence of the United States depends substantially on our ability to procure and utilize large quantities of energy. Our primary energy is in the form of petroleum products. The heating oils for our homes, buildings and industry, heavy oils for ships, diesel for trucks and buses, the gasoline for our cars, aviation fuels for our air transports, natural gas for heating, cooking and industrial processes all come from the world's petroleum supply.

Our growth as a world power is due in a large part to our abundant petroleum supply. We are still one of the world's greatest producers of crude oil. Our vulnerability during time of war, our weak bargaining position in world politics and the constant deficit in our balance of payments are all symptoms of an increasing reliance on foreign oil. This, then, is the "Energy Crisis" we face. It is not one of dwindling resources but rather a growing dependence on a tenuous supply.

Each of our domestic sources: coal, oil, gas, geothermal, nuclear, solar, hydro, and wind have great problems and potentials. Technological breakthroughs have been made and will continue. The real incentive to switch from foreign oil is economic. As the cost of foreign oil rises the comparative cost of a solar collector or a "scrubber" for a coal fired boiler becomes more of a bargain. We cannot, however, assume a business as usual posture and wait for these breakthroughs that will take decades. In the meantime, we must make the best use of the resources at hand. Some building owners have become so used to paying high energy bills that they presume that energy, along with rent, insurance and taxes, are "fixed expenses." This is no longer the case.

Reducing energy costs as much as 50% in new buildings by proper design and construction and 30% in existing buildings is not uncommon. In new buildings, spending money on proper insulation, shading devices, controls and other energy saving features will often reduce the size of the heating ventilation and air conditioning plant. In this case an energy efficient building cost no more than a wasteful one. In existing buildings, operating changes which cost nothing or small investments which have very short paybacks (a few years or less) can transform a wasteful building into an efficient one.

Why worry about wasting a few barrels of oil when what we should be doing is finding more? There are several good reasons for the conservation approach. One is that the oil and gas we will find will be more expensive to produce. It may be



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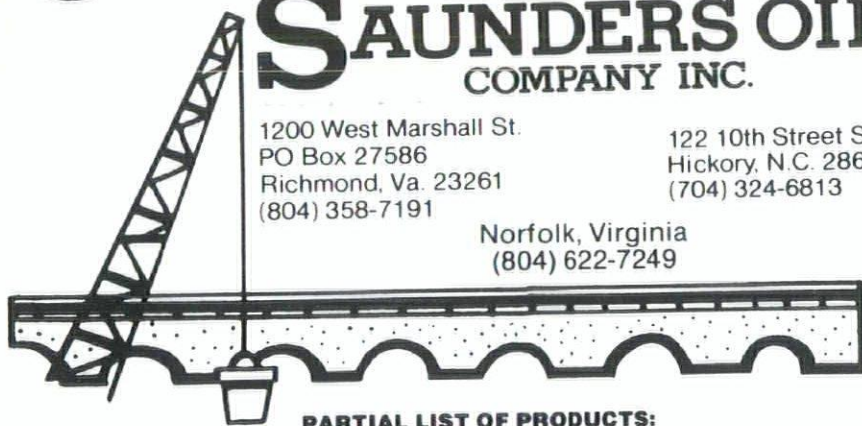


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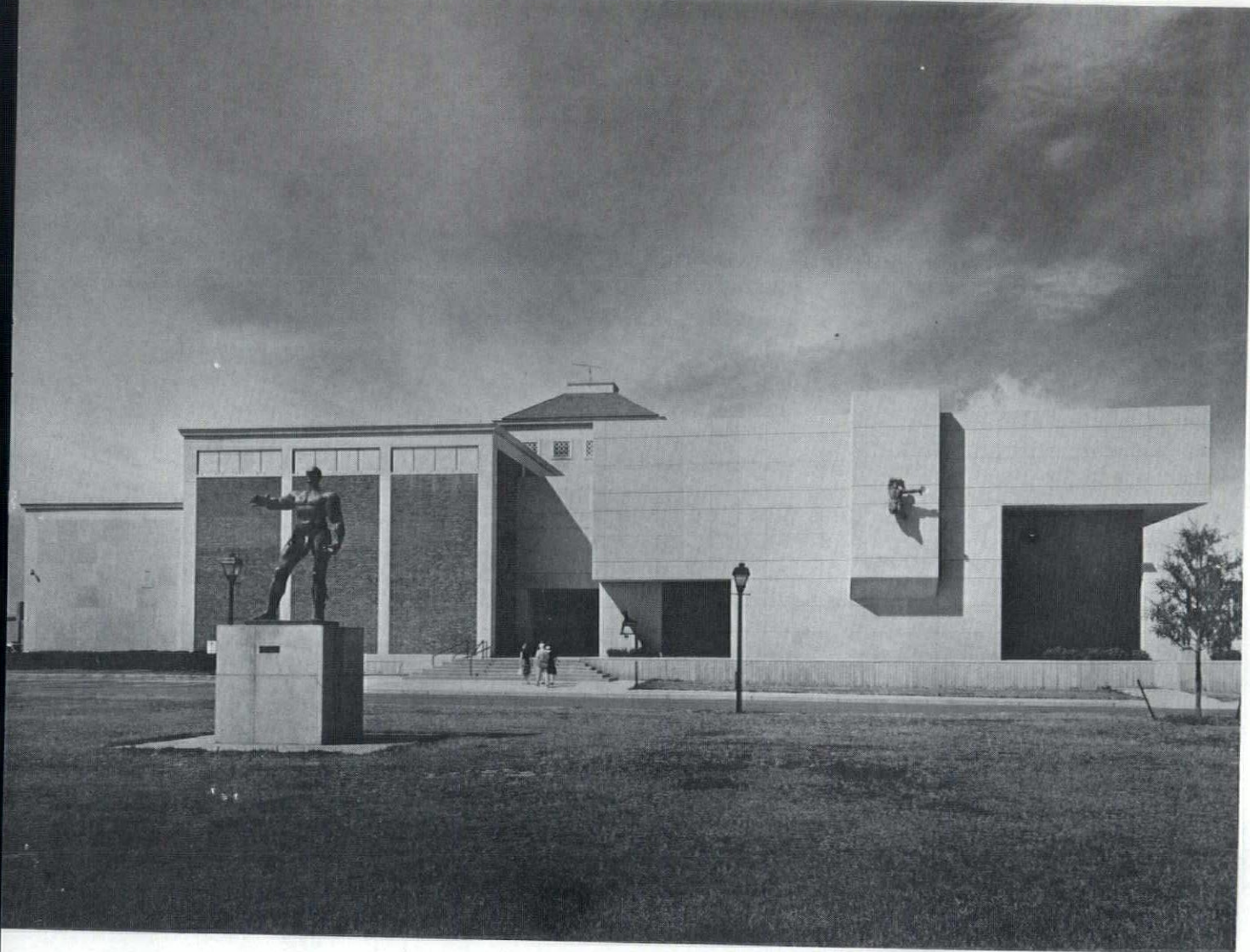
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*The Chrysler Museum at Norfolk is making no-cost improvements based on a consultant's recommendations. E. T. Gresham Company, Inc. of Norfolk was contractor for the addition shown. (Photo by Ronald Maratea)*

offshore or come from shale but the "cheap" oil has been pumped and used. We should not accelerate our entry into expensive energy. Another is that we can conserve in buildings and equivalent of up to 12.5 million barrels per day by 1990 according to American Institute of Architects estimates. This is projected to be equal to two-thirds of the amount of oil we will be importing then, not a total solution in itself but a substantial impact on the problem. Another reason to pursue conservation is that it affects a large, labor intensive industry, construction. In times of high unemployment we need to be diverting our capital from escalating energy costs to job producing construction improvements. From the businessman's point of view it makes good sense to invest in energy conservation. The AIA estimates that following a policy of energy conservation in buildings will free up about \$500 billion in capital over a 15 year period nationwide. There is no question that we should pursue additional sources of supply of fossil fuels and continue to develop alternative sources of energy but at the same time use wisely what we have.

Since the cost of energy has become a major part of an owner's operating budget many products have flooded the marketplace. Claims of energy savings from 10 to 30% are

not uncommon. There is the story of the optimistic building owner who bought several devices whose total savings exceeded 100% of his bill. The utility company, however, did not respond by sending him a check instead of a bill. Almost all of the devices from automatic boiler tube scrubbers to sophisticated computer control systems save energy and money. The decision as to which one will be best for a given building must be made after analyzing the needs of the building and the effect of the device on the buildings various systems.

Every building that uses energy should be considered as an opportunity to invest in energy conservation. Energy conservation is a safe investment, there are countless case histories of improvements which have resulted in substantial savings. Energy conservation provides a good return on the investment (ROI). There are so many investments that will yield paybacks of two or three years or less that little attention need be paid to those with larger paybacks. Conservation makes good business sense.

Many different approaches to conserving energy in buildings are emerging as more and more building owners see the savings possible. Conservation techniques in residences are widely known and practiced, including storm



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windows, insulation and others. The larger and more complex buildings, however, do not respond to that type of treatment. Adding storm windows and insulation usually has little effect on large office buildings or commercial facilities. Changes in lighting levels and ventilation quantities are the types of improvements which most affect the energy consumption of commercial and institutional buildings. The large number of possible energy improvements with a wide variety of costs and paybacks as well as the complex interrelationship of building systems has brought several building owners to hire consultants. Only with a thorough energy analysis can the owner be assured that he is spending his limited capital on an improvement which will give him the best return on his investment.

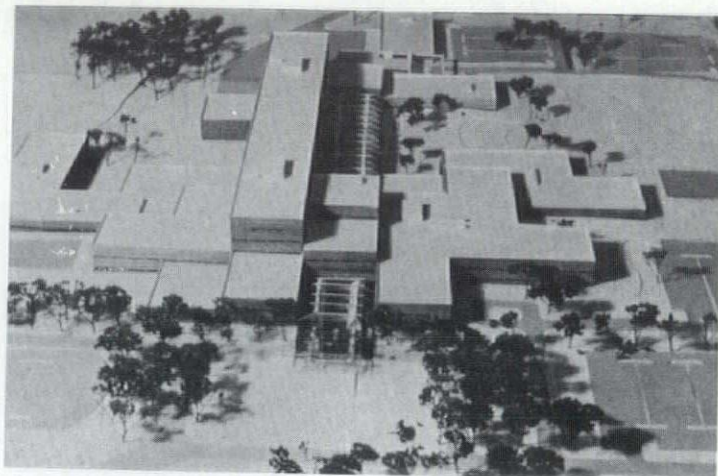
Energy conservation analyses can be both large and small and apply to both new and existing buildings. Enercon, Inc., a Norfolk based energy consulting firm, studied energy cost reduction possibilities at the Chrysler Museum. The results were no-cost improvements such as office area lighting reductions which will reduce the Museum's energy consumption by an estimated 5 to 10%. Areas of greater improvement were found and may be implemented as funds become available. A new Veterans Administration hospital to be located in Richmond was the subject of one of the most exhaustive computer aided energy analyses ever accomplished. Architect, Ken Blankenship of Williams and Tazewell & Associates, Inc., says "The report was published in fifteen volumes and the building so complex that our consultant, Vansant & Gusler, had to modify some of the computer programs to apply them to this building. After the preliminary building design is complete it will be analyzed again and compared with the original model."

While energy conservation is a new field, help is available to owners of existing buildings or potential owners of buildings. For comprehensive services on larger more complex buildings an energy consultant should be retained. He should have architects and engineers on his staff specially trained and experienced in energy conservation. Local utilities are also offering the services of individuals trained in helping their customers make better use of the electricity they buy. In Norfolk, Mr. Norman (Bob) Roberts, Director of Marketing Services heads up Vepco's efforts in this area. Publications are available concerning energy conservation dealing with specific building types. Good sources for bibliographies include:

The Superintendent of Documents  
U.S. Government Printing Office  
Washington, D. C. 20402

The Virginia Energy Office  
823 East Main Street  
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*The new 820 bed McGuire Veterans Administration Hospital was analyzed to determine the energy use of 28 possible mechanical systems. (Photo courtesy of Williams and Tazewell & Associates, Inc.)*

reducing this country's dependence on foreign oil. The National Energy Act is the first attempt at a national energy policy. It legislates and encourages conservation. The remaining effort on the part of building owners, builders and designers will determine whether we go further down the road to increased foreign dependence or embark on a program of eventual self-sufficiency and sustained growth.

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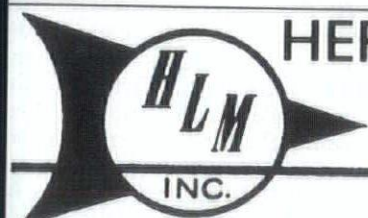
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# Annual Congressional Luncheon Washington, D.C. April 5, 1978

*Congressman David E. Satterfield welcomed Harry Lee and Bob Dunville to Washington for the 17th Annual AGC of Virginia Congressional Luncheon.*



*Congressman Robert W. Daniel, Jr., shared a table with Alex Alexander and Robbi Diggs at the Congressional Luncheon.*

*Bob Heiderer, Congressman Herbert E. Harris and Warren Martin share a light moment before lunch.*



*Bob Heiderer, Warren Martin, Congressman T. Kenneth Robinson and George Bickerstaff discuss legislative concerns of the 95th Congress.*

A NEAR RECORD crowd of Virginia Branch members attended the Annual Congressional Luncheon held in the Rayburn Building, Washington, D. C., on April 5.

Eleven of the Virginia Congressional Delegation attended or sent representation to give those attending information and to hear their views on matters of particular interest to contractors.

Preceding the luncheon members gathered for a tour of National AGC headquarters at 1957 E Street, N.W., conducted by Arthur F. Hintze, Director, Open Shop and Government Services; Val Riva, Assistant Manpower & Training and Education; and Assistant Executive Director Hubert Beatty, Richard C. Creighton, John C. Ellis, and John W. Sroka.

Hubert Beatty explained the organizational set-up of the AGC and the areas of responsibility of the various segments. He also explained his responsibilities with the Publication, Public Relations and Manpower Development divisions.

John Sroka explained his responsibilities with the Building Highway, Heavy-Industrial and Municipal-Utility sections and outline the aims and goals of each.

Richard Creighton's primary area of responsibility is in legislative matters. He explained his work in lobbying on the "Hill" as well as his liaison work with other trade associations on matters of mutual interest.

John Ellis discussed the primary area under his direction — Labor, Safety, Education and the area of government regulation.

Arthur Hintze dealt with the Davis-Bacon problems facing the construction industry and what can be done to alleviate some of the problems.

Val Riva explained the new training program called "Construction Craftman Curriculum." This new approach was designed to meet the needs of the open shop contractors. This is a training program which crosses craft lines.

Those AGC members attending the luncheon included: **Alex Alexander**, Alexander Building Construction, Inc., Richmond; **Harry L. Barker**, Barker Construction Co., Inc., Richmond; **George A. Bickerstaff**, Luck Quarries, Inc., Richmond; **John Blakemore, Jr.**, Blakemore Construction Corp., Richmond; **George S. Brantley, Jr.**, Aetna Insurance Co., Richmond; **Frederic W. Brumbaugh**, Alexander Building Construction, Inc., Richmond; **Joseph C. Brown, Sr.** and **Joseph C. Brown, Jr.**, Beach Building Corp., Virginia Beach; **Richard W. Caldwell, Jr.**, Frit Construction Co., Martinsville; **Walter**



Caldwell, John W. Daniel & Co., Inc., Danville; **Jerry Callis**, Kenbridge Construction Co., Inc., Kenbridge; **Milton J. Collins**, Cooperative Construction Co., Lynchburg; **Larry Conner**, Aaron J. Conner General Contractor, Inc., Roanoke; **Claude Daniel**, Blakemore Construction Corp., Richmond; **Robert M. Dunville, Sr.** and **R. M. Dunville, Jr.**, Robert M. Dunville Bros., Inc., Richmond; **Walker Board**, Commercial Builders, Inc., Norfolk; **A. C. Ford**, Solite Corporation, Richmond; **Howard Gill**, Henderson & Phillips, Inc., Norfolk; and **Sid Alloway**, Honorary Member, Richmond.

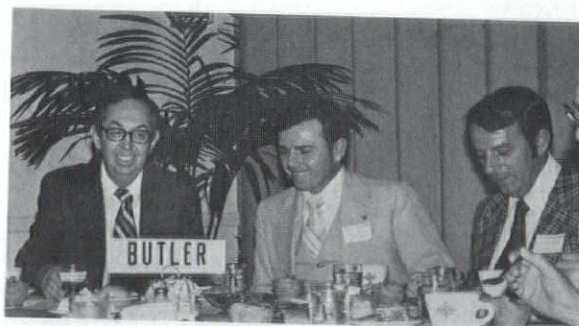
Also, **Rodney Gentry** and **Carl Woodson**, Diamond Air Compressor Co., Inc., Hampton; **George P. Gruber**, Arthur Young & Company, Richmond; **Briscoe Guy**, Conquest, Moncure & Gunn, Inc., Richmond; **Lin and Janice Hendricks**, Hendricks Tile Manufacturing Co., Inc., Annandale; **Mary J. Hunt**, Cooperative Construction Co., Lynchburg; **Lester L. Hudgins**, and **William F. Kayhoe**, Kayhoe Construction Corp., Richmond; **Jeff Keating**, Lewis, Mitchell & Moore, Vienna; **Joe Kemp**, Eugene Simpson & Bro., Inc., Alexandria; **Bob Kersey**, Commercial Builders, Inc., Norfolk; **Charlie Lambert**, R. D. Lambert & Son, Inc., Chesapeake; **Taylor Layne**, Johnson & Higgins of Va., Inc., Richmond; **Harry Lee**, Kjellstrom & Lee, Inc., Richmond; **Pete Lynch**, Travelers Insurance Co., Annandale; **Sam Livingston**, Lasal Construction Co., Inc., Newport News; **Warren Martin**, Edward van Laer, Inc., Charlottesville; and **Joe C. Nance**, Robert M. Dunville & Bros., Inc., Richmond.

And **Edmund Pendleton, Jr.**, Pendleton Construction Corp., Wytheville; **Dave Reed**, John W. Hancock, Jr., Inc., Salem; **Bill Reynolds**, William E. Reynolds Construction Co., Salem; **Hugh H. Riley**, Hudgins Construction Co., Inc., Newport News; **Jack Roberts**, Kenbridge Construction Co., Kenbridge; **Joe Rosenbaum**, Ronoake Engineering Sales Co., Inc., Richmond; **Raymond Stone**, Frith Construction Co., Martinsville; **Henry Taylor, Jr.**, Taylor & Parrish, Inc., Richmond; **M. Tomlinson**, Q.M. Tomlinson, Inc., Roanoke; **Dwayne Trottman**, Aaron J. Conner General Contractor, Inc., Roanoke; **Robert Van Divender**, The Howard P. Foley Company, Richmond; **W. M. Walker**, Waco, Inc., Richmond; **G. B. Wilson**, Thomas Lutherford Bonding and Insurance, Roanoke; **Charles Young**, Gregory Construction Co., Manassas; **Ray Wright**, Chantilly Construction Co., Chantilly; and **Joe Ziglar**, Chesapeake Masonry Corp., Newport News.



*Congressman Joseph L. Fisher and Joe Kemp talked during the Congressional Building tour.*

*Congressman G. William Whitehurst greets Congressman Wampler's Legislative Assistant Jack Wright while Briscoe Guy and Bob Dunville, Jr., look on.*



*Congressman M. Caldwell Butler enjoyed seeing constituents Larry Conner and Dwayne Trottman at the Congressional Luncheon.*

*Dave Reed welcomes Congressman Butler to the Congressional Luncheon while Milt Collins looks on.*







Harry Taylor



Jim Duckhardt



Jim Williams



Dave Kjellstrom



Jack Bays



Aaron Conner and Al Branson, Secretary, Membership Development of National AGC review Sunday Supplement from Richmond Times-Dispatch.



Dave Reed and Ike Hedgepeth



John W. Daniel and Sam Shrum

## Virginia Branch Members Participate In National Convention Activities

SOME 40 members and guests from Virginia Branch attended the National AGC Convention held in New Orleans, March 3 through 8.

Unusually cool and wet weather prevented enjoyment of many of New Orleans outdoor features, but the reception by the city was warm and the activities and meetings progressed at a brisk pace.

Among important actions taken by the Associated General Contractors was adoption of an energy resolution and a Minority Business Enterprise resolution.

Jack Bays of Jack Bays, Inc., McLean, was a panel member for a forum on "Successor in Management", one of a series of four popular forums on Close Held Business Management. Executive Director James F. Duckhardt presented the Virginia Branch AGC system of developing Sunday supplements at Membership Development Committee meeting. Samples distributed generated considerable interest.



Russian Cruise Ship berthed at New Orleans harbor near Convention Center.



Barbara and Earl Morin





President Harry Lee and National Director Robert Dunville attend meeting.



Ann Taylor (Mrs. Henry) and Elizabeth Lee (Mrs. Harry)



Dick Phillippi and Jesse James



Pete Gelvin, Past National President from Amarillo, Texas.



Rocky and Esther Smith with Frances and Al Moseley



Robert Dunville and Warren Martin are a laugh.



Sam Lionberger and Stan Lanford and wife Elise.



Rindy Lionberger (Mrs. S. L.)

Those attending from Virginia Branch were:

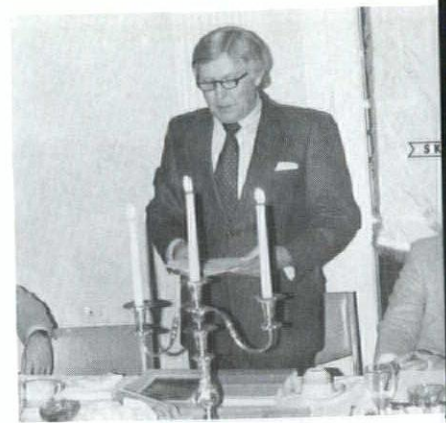
/M Aaron J. Conner, Aaron J. Conner, General Contractor, Inc., Roanoke.  
 /M Larry Conner, Aaron J. Conner, General Contractor, Inc., Roanoke.  
 W. Creech, Nancy McClees, J. W. Creech, Inc., Norfolk.  
 /M Robert M. Dunville, Sr., Robert M. Dunville & Bros., Inc., Richmond.  
 /M R. I. Hedspeth, H & S Corporation, Norfolk.  
 /M George F. (Jesse) James, James Insurance Agency, Wytheville.  
 /M N. David Kjellstrom, Kjellstrom and Lee, Inc., Richmond.  
 /M S. F. Lanford, Jr., Lanford Brothers Co., Inc., Roanoke.  
 /M Harry G. Lee, Kjellstrom and Lee, Inc., Richmond.  
 /M Jim Williams, Jim Williams Construction Co., Chester.  
 /M W. A. Shrake, Collier-Cobb & Associates of Va., Inc., Vienna.  
 /M E. U. Morin, Newport News Industrial Corp., Newport News.  
 /M F. Warren Martin, Edward van Laer, Inc., Charlottesville.  
 /M A. H. Moseley, Jr., Shirley Construction Corp., Portsmouth.  
 /M Richard E. Phillippi, Jr., Richard E. Phillippi, Inc., Wytheville.  
 /M D. W. Reed, Jr., John W. Hancock, Jr., Inc., Salem.  
 /M Samuel H. Shrum, Nielson Construction Co., Inc., Harrisonburg.  
 rs. Esther Smith, Shirley Construction Corp., Portsmouth.  
 /M Henry Taylor, Jr., Taylor & Parrish, Inc., Richmond  
 /M Jack Bays, Jack Bays, Inc., McLean.  
 /M Samuel Lionberger, Jr., S. Lewis Lionberger Company, Roanoke.  
 /M John W. Daniel & Co., Inc., Danville.  
 r. H. Taylor Layne, Johnson & Higgins of Va., Inc., Richmond  
 /M James F. Duckhardt, Executive Director, Virginia Branch AGC, Richmond.  
 Social events included several sumptuous receptions with excellent food,  
 caterpillar Parties aboard the S. S. President on the Mississippi, "The History of  
 jazz" described and performed by Pete Fountain, and many other enjoyable  
 events.





**PIEDMONT DISTRICT** held their first meeting of the year February 21 at the Farmington Country Club, Charlottesville. President Don Sours introduced Harry G. Lee, Virginia Branch President, who gave a brief overview of 1977 accomplishments and an insight into the plans for 1978. The theme of "involvement" was stressed to the membership.

In keeping with the new emphasis on promoting membership, Piedmont entertained eight non-member firms for the occasion. Plans were made to act on local Davis-Bacon Wage Determinations and to set up a scholarship fund.



Warren Martin

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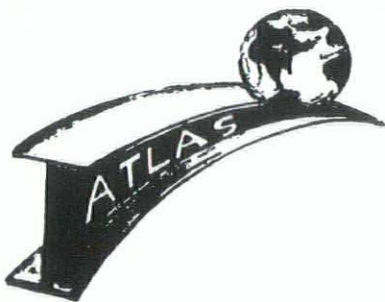
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Harry G. Lee, Virginia Branch President, Kjellstrom and Lee, Inc., Richmond; Don Sours, Piedmont President, R. E. Lee & Son, Inc., Charlottesville; Charlie Pietsch, Association Division Chairman, Manson and Utley, Charlottesville.



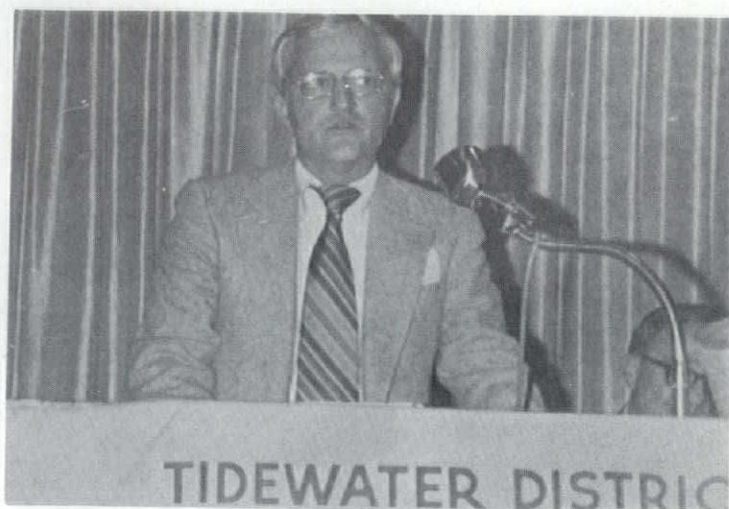
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State President Harry G. Lee of Kjellstrom & Lee, Inc., Richmond, Va.

President Howard Gill of Henderson and Phillips, Inc., Norfolk, Virginia



Associate Division Chairman Charles F. Pietsch of Manson & Utley, Inc.

Executive Director, Virginia Branch AGC, James F. Duckhardt.

The **TIDEWATER DISTRICT**, Virginia Branch AGC, met at the Admiralty Motel in Norfolk on February 7, 1978 with approximately 60 in attendance. President Howard Gill headed a strong program featuring a full discussion of the actions and goals of the Virginia Branch AGC. President Gill also discussed the aims and goals at the District level. State President Harry Lee of Kjellstrom and Lee, Inc. outlined his program and plans for the State Organization.

Associate Division Chairman Charles Pietsch of Manson & Utley, Inc. discussed the duties, responsibilities and benefits of the Associate Members. Executive Director Duckhardt brought the group up to date on the 1978 Legislative Program and other matters of current importance.

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Margaret Caldwell (Mrs. Richard) and Nickie Duckhardt (Mrs. J. F.)



James F. Duckhardt,  
Executive Director.

The annual golf outing of the **SOUTHSIDE DISTRICT** was held at the Yachtman Motor Inn, Myrtle Beach, South Carolina, February 23-24, 1978. Fifty members and guests attended the two-day affair. They enjoyed the beautiful weather and outstanding golf courses. Although the golf matches were very informal, the winner of the Blind Bogey was Ed Cothran, a visiting Central District member.

On Friday evening, there was a reception and dinner with a talk by Executive Director James Duckhardt concerning the AGC activities with special emphasis on the Legislative Program for the year 1978.



District Vice President and Mrs. Henry Andrews, Thompson's Ready-Mix, Inc., Danville and, at right, District President Richard Caldwell, Frith Construction Co., Inc., Martinsville.



Mr. and Mrs. Ed Cothran, Jr. and Ed Cothran of J. I. Cothran Company, Inc., Altavista.

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President Ron Gentry (Rea Construction Company, Hampton) called the PENINSULA DISTRICT Meeting to order at the Fisherman's Wharf, Hampton, on February 14, 1978. Although there was a mix up on the meeting arrangements, there was an excellent turnout of approximately 40 people and the meeting was well handled by all in attendance.

State President Harry Lee spoke on the role of the AGC in the Virginia Construction Industry and his plans for 1978. Executive Director Duckhardt led the discussion on the 1978 Legislative program. Public Relations Chairman Bob Kersey was in attendance and urged all members to become involved.



Virginia Branch AGC President Harry G. Lee (Kjellstrom & Lee, Inc., Richmond), Peninsula District Vice president Marion Newton (Rea Construction Company, Hampton) and District President Ron Gentry (Diamond Air Compressor Company, Inc.)

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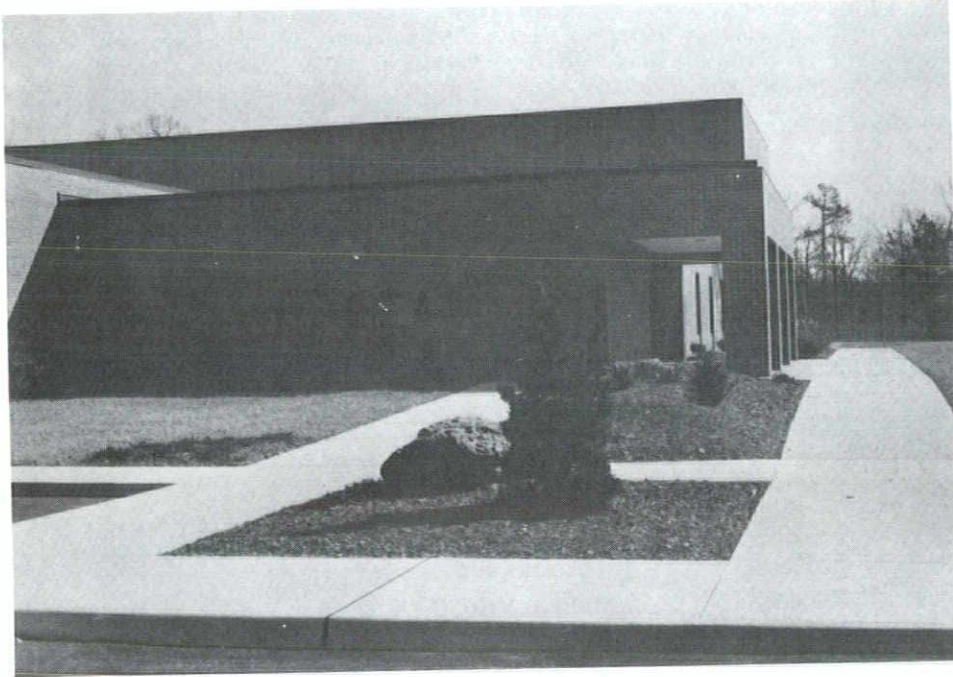
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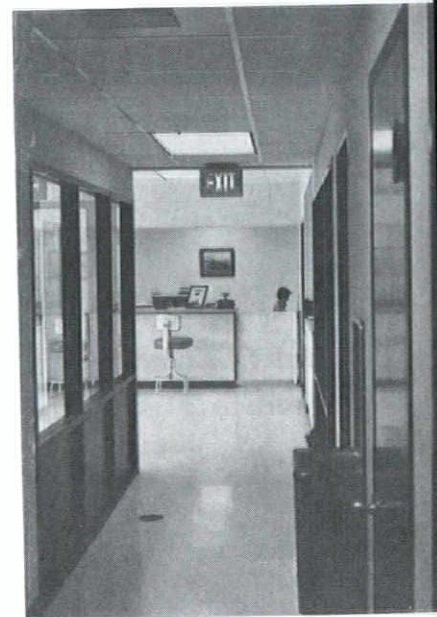
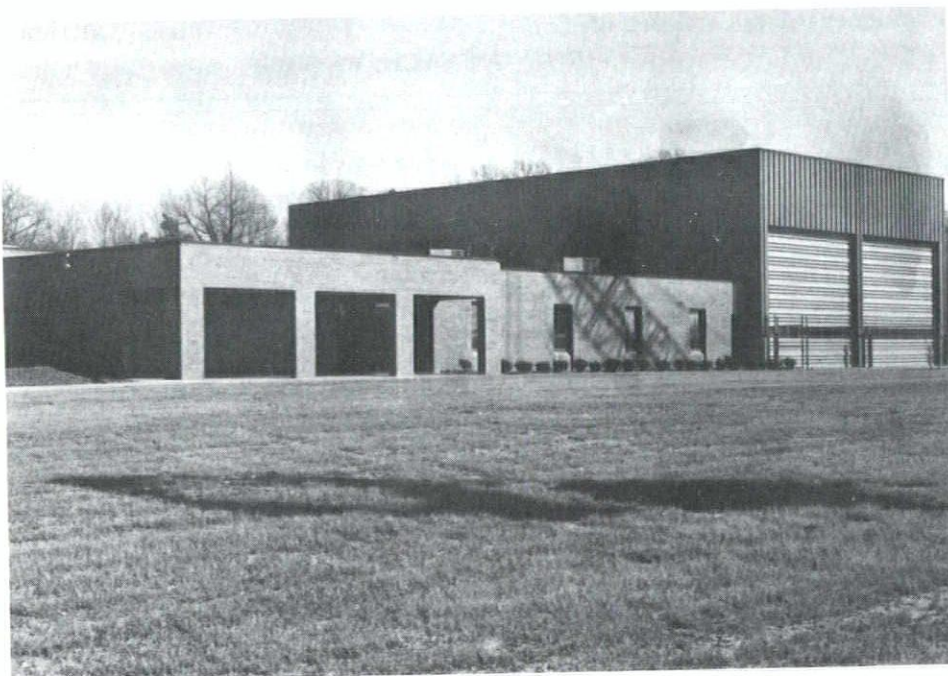


MITCHELL Distributing Company is owned by the Carolina Investment Co. of Virginia and this facility is part of a general expansion of the properties in Virginia. The owner has opened two other branches, one in Coeburn, the other in the Salem area within weeks of this building on West Hundred Road in Chesterfield County. This Chester Branch was constructed at a cost of over \$500,000.00 and was completed for occupancy in mid-September 1977.

A contract was let for construction in November of 1976, and clearing and grading began in December, before the cold weather, but only a portion of the work was done when one of the coldest winters on record settled down over the eastern part of the country. Work came to a complete standstill with the temperatures averaging about 25 degrees, and about 14 inches of snow during the month of January. February was not any warmer and it was about the middle of March before work could again proceed.

The one-story, air conditioned masonry building has a built-up roof, aluminum framed windows and interior walls of drywall.

After a well-attended open house on October 24-25, a spokesman for the firm said, "Now we can get on with what we're supposed to do — selling equipment."





Barker Construction Co., Inc. was general contractor and handled foundations, concrete work and carpentry.

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Included in the design of the four-story building are a prisoner intake area and a separate visitor's area which is set off from the jail proper by its location and the use of a glass separation. Medical, recreational, library and prisoner monitoring systems are among

the features. The monitoring system includes 88 closed-circuit TV cameras with an all-inclusive viewing capacity.

Interiors were planned with the aid of psychologists — all a part of making the Center as humane as possible under





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From Virginia Beach were: Welk Pile Driving Corp., piling; Guille Ste Products Co., steel roof deck; Seaboard Building Supply Co., steel doors, bucks & hardware supplier; Smith Electric Co., lighting fixtures; electrical work; and Reid Associates, Inc., plumbing fixtures, plumbing, air conditioning & heating.

Others were: Kramer Masonry, Inc., Chesapeake, masonry; Barnum-Brun Iron Works, Inc., Chesapeake, steel handrails; Weaver Brothers, Inc., Newport News, windows & millwork; and Atlantic Industrial Painting Co., Aliquippa, Pa., painting.

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