

Fred Waller's long, distinguished career with the asphalt industry began when he enrolled at North Carolina State University (NC State) at the age of 16. "I was first introduced to asphalt right in the middle of World War II," said Fred. "I wanted to enlist the day I turned 17." He hoped to be a fighter pilot but ended up at boot camp and aerial gunnery school.

When the war ended, Fred went back to NC State and graduated with a B.S. in Civil Engineering and an officer's commission in the U.S. Air Force. The North Carolina DOT hired him and asked him to start an asphalt laboratory. At the time there were very few asphalt labs. Most mixes were put together based simply on experience.

Fred created an asphalt laboratory and NCDOT hired Bruce Marshall of Marshall Mix Design fame to train him. The Marshall procedure at that time used 50 hammer blows and a manual hammer.

The Waller I-2 Mix

"I was developing NCDOT's lab about the same time the Interstate program began," says Fred. "We were experiencing a lot of failures with our Interstate surface mix because of increasing traffic and heavier loads. It was obvious we needed a better mix. My boss called me in and told me that I had one week to design a new surface mix or I was fired.

"Well, I had been working on a new surface mix, so when the boss called me back in after a week, I was ready. He looked it over, tested it, and said, 'We're going to accept this mix and use it.' " Fred traveled all over the state for NCDOT working with contractors to get them familiar with the new mix.

NCDOT later gave Fred a special award for his work on that mix. The agency

used it for 40 years, until they started using Superpave. Even now, the I-2 mix is used for many local applications.

Humble Oil

After 11 years with NCDOT, Fred joined the Asphalt Division of Humble Oil (later Exxon), serving Virginia and West Virginia. Fred did such a good job that Humble offered him a job in a big office in the Humble building on Times Square in New York City. "Only thing was," said Fred, "I would have had to travel all over the U.S. and I had three little boys at home that I wanted to see grow up. I didn't take that New York City job but I did go to work as an asphalt consultant for Miller-Warden when they moved their office to Raleigh, North Carolina."

Asphalt Consultant

While Fred was with Miller-Warden, he led five key projects with the National Cooperative Highway Research Program (NCHRP). The projects involved the proper use of aggregates and aggregate stockpiling. The purpose of one NCHRP contract was to find the most efficient method of building an aggregate stockpile and feeding the aggregate into the hot mix plant. Fred took 3,000 pounds of aggregate, colored it and screened it into four different sizes, then photographically traced the colored aggregate to show how it would flow down the stockpile.

"Even back in the 1960s, we were trying to build stockpiles to avoid segregation. The NCHRP study was the first to measure and demonstrate how to minimize segregation. We found out it was better to use a system that built stockpiles in

layers rather than building them with a conveyor," explained Fred. While at Miller-Warden, Fred also helped rewrite the pavement specifications for the District of Columbia.

After seven years with Miller-Warden, Fred was called back into active duty for the U.S. Air Force during the Korean War. After 6 and a half years with the Air Force and reaching the rank of Colonel, Fred went to work for Troxler, developing and promoting soil testing equipment. Later, Gerry Triplett, then president of the Asphalt Institute (AI), talked him into coming to work for the Institute.

Asphalt Institute

"I worked for the Asphalt Institute for 19 and a half years," said Fred, "and I enjoyed every week of it." One of the significant contributions Fred made while he was there was writing the *Asphalt Emulsion Manual*. Fred researched and wrote the entire manual with the help of the Asphalt Emulsion Manufacturing Association and FHWA. After writing the manual, Fred went all over the U.S., developing emulsion seminars.

While Fred was at the Institute he saw a need for practical guidelines for repairing utility cuts with asphalt, so he developed an extensive slide show training program for AI field engineers.

During his career with the Institute, Fred was active with a host of asphalt industry organizations. He is still an active participant in ASTM Committee D-4 on Road and Paving Material. During his 45 years of membership with ASTM, he served as

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chairman of numerous subcommittees. He was chairman of the *Use of Waste Materials in Hot Mix Asphalt Symposium*, for which he received the Award of Merit and the 2003 ASTM Charles B. Dudley Award.

Fred is a lifetime member of the Association of Asphalt Paving Technologists and served as its President in 1994. He has also been an active participant in the Transportation Research Board for 35 years.

How did AI most help the asphalt industry?

After working in the asphalt industry for 50 years, Fred has some perspective on its achievements and also on its current needs. And he has a good fix on AI's contributions. "I think the Institute has contributed significantly to the development of good pavements and to long-term pavement performance," stated Fred. "And more than any other organization, I believe AI deserves credit for developing and promoting Superpave."

As for the current needs of the industry, Fred believes that "long-term pavement performance is still the biggest challenge. Fifteen or twenty years ago, we built asphalt pavements that would last 8 to 12 years, now we need to build them to last 15 to 20 years."

What are you doing nowadays?

"I just finished overseeing the construction of a 110-space parking lot for a U.S. Post Office facility," says Fred. "We used the right mix, the right structural design and it turned out to be one of the most successful jobs I have seen."

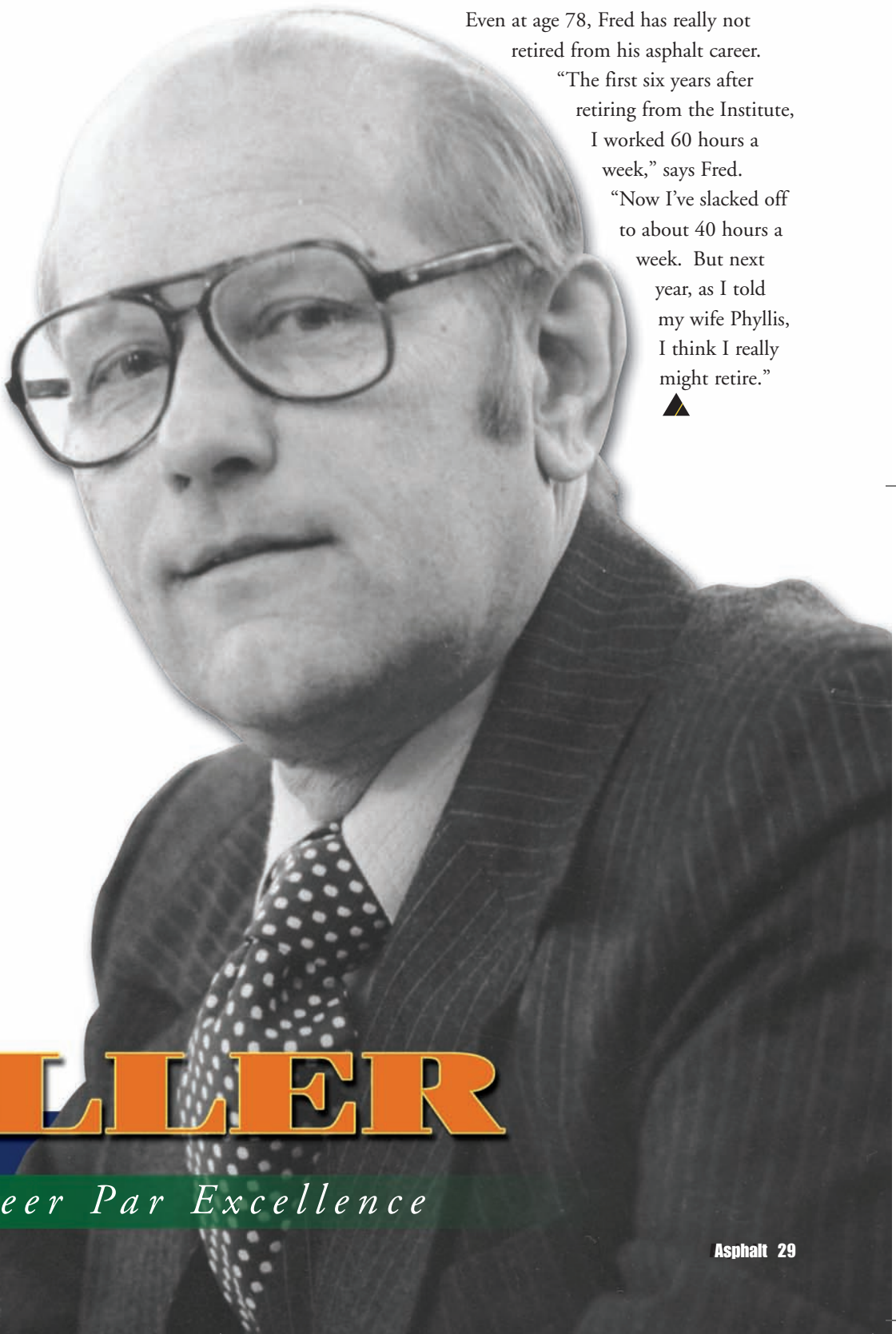
Several years ago, Fred spent 15 months as the volunteer construction supervisor for his new Baptist church building. Upon completion, the congregation grew so fast that another building was built to accommodate the rapid growth. Fred oversaw the construction of that building too.

"A few years ago, I had the pleasure of overseeing the design and paving of a new parking lot for our church," said Fred. "We built it right. We specified 6 inches of aggregate base course and 2 inches of I-2 hot mix asphalt. The only maintenance expense on that lot has been for re-striping."

Even at age 78, Fred has really not retired from his asphalt career.

"The first six years after retiring from the Institute, I worked 60 hours a week," says Fred.

"Now I've slacked off to about 40 hours a week. But next year, as I told my wife Phyllis, I think I really might retire."



WALLER

Asphalt Engineer Par Excellence