

MOST BEAUTIFUL BRIDGE

A bridge spanning the Fox River at Little Chute, Wis., was recently named the most beautiful bridge of its class in America by the American Institute of Steel Construction (see photograph at bottom of page). The structure, built as a Federal-aid secondary project, is 1,047 feet in length. It was started late in 1952 and completed approximately 2 years later at a cost of almost \$800,000. The bridge, a part of the county trunk highway system, connects the villages of Little Chute and Kimberly in the populous Fox River Valley of northeastern Wisconsin.

Removal of the old bridge downstream from the new structure created a navigational problem at a point where part of the old bridge, a drawbridge across the canal paralleling the river and connecting with an island, was left in place. During the past summer a controversy raged bitterly for several weeks before it was decided who would pay the wages of the longtime bridge tender responsible for opening the bridge for passing river traffic, inasmuch as the village and county disclaimed all responsibility for maintaining a movable bridge facility.

Engineer Cited

H. DEAN FRAVEL, JR., planning engineer in the Office of Assistant to the Commissioner, recently was given a citation for his contribution to the work of the Commission on Organization of the Executive Branch of the Government. The citation was signed by ex-President Hoover, Chairman of the Commission. Mr. Fravel spent about a year with the Commission's Task Force on Water Resources and Power and the Task Group on Improvements to Navigation. Upon completion of this assignment, Mr. Fravel returned to the Washington office to assist Mr. Schnepfe in emergency relocation and civil defense activities.

51 YEARS OF SERVICE

WILLIAM A. GRANT of the Physical Research Branch will retire from the Bureau on November 30 after 51 years, 9 months and 6 days of continuous service. Mr. Grant entered the Office of Public Roads in July 1905, when the activity of the organization that was to become the Bureau of Public Roads consisted largely of building "ob-

ject lesson roads." His first assignment was as a student assistant testing cement and aggregates for concrete under Dr. Alton B. Cushman, assistant to Logan Waller Page who was in charge of the laboratory. The entire office comprised some 20 people among whom were Prevost Hubbard, John Eldridge, and Maurice O. Eldridge who later became Director of Traffic for the District of Columbia. The laboratory was located at 14th and B Streets, S. W., across the street from the old Bureau of Printing and Engraving Building.

Soon after Mr. Grant's entry into the service, Mr. Page arranged for him to receive special training in the Office of the Geological Survey where he learned the technique of making, polishing, and mounting thin sections of mineral and rock specimens for petrographic study and classification. The preparation of these microscope slides and other types of

special rock specimens has been his responsibility since that time. His patience and skill in this work have contributed materially to the quality and value of the research that has been done by the Bureau on the description and classification of road-building rocks.

Mr. Grant holds a unique place in the respect and affection of his associates. The importance of doing his work conscientiously and with pride in the result has always been his principal concern.

With a record of service exceeding that of anyone in the Bureau, William Grant is still an active person and he is looking forward with zest to much activity in his flower garden at home.



William A. Grant

Record Traffic

More and more freeways and expressways are being completed throughout the Nation and more and more motorists are driving out of their way to use these facilities. Reports from Los Angeles indicate that the Hollywood Freeway now carries about 168,000 vehicles per day and has reduced traffic on arterial streets 2 miles on either side by as much as 34 percent. It is interesting to note also that the intersection of this freeway with the Pasadena-Harbor Freeway serves approximately 242,000 vehicles each week day. California believes this to be the world's busiest highway intersection.



BUREAU AIDS IN DISASTER AREAS

In an October 5 memorandum from Secretary Weeks to Commissioner Curtiss, the Secretary commended employees of the Bureau as follows:

"With the termination of the first and most urgent phase of the disaster caused by hurricanes Connie, Diane, and Ione, I wish to express to you my gratification with the splendid manner in which the Bureau of Public Roads rose to assist in meeting the demands of the emergency. It is by such prompt and effective action in the face of an urgent situation that the Department once again proves its value."

"Please express to all the people in your Organization who had a part in this operation, my sincere thanks for a job well done."

Hurricane Connie, which caused serious damage to coastal installations in North Carolina on August 13, was followed by Hurricane Diane on August 19. The latter not only did extensive damage along the coast of North and South Carolina, but brought such heavy rains that serious floods resulted in the northeastern section of the country.

Cooperation With FCDA

The Bureau of Public Roads, working in close liaison with the Federal Civil Defense Administration and the Department of Commerce, alerted the field offices on August 19 to the approach of Hurricane Diane in order that they would be prepared to offer assistance in the emergency. The President declared North Carolina a disaster area on August 19, and the next day, included the following: Georgetown and Harry counties, S. C., eastern Pennsylvania, Connecticut, Woonsocket, R. I., parts of New Jersey, and Massachusetts.

Our field offices were advised to work closely with the regional offices of FCDA. According to law, the Bureau is required to furnish that agency with information on road conditions, to supply engineers, other personnel and equipment, and to perform disaster relief work.

On August 23, two Public Roads engineers were assigned to the FCDA office in Harrisburg, Pa., and six more to their office in Newton Center, Mass. On August 31, two additional engineers were assigned to New Jersey.

Damage Surveys

Immediately following the storms, each District Office in the affected areas sent engineers to survey and

report on road and bridge damage. These reports were summarized and sent to FCDA and the Department.

In the meantime, Bureau field offices were cooperating with highway departments at all levels. Roads were inspected on all systems and reports were furnished with estimates of requirements for restoration. The district offices assisted the States in planning their emergency work under Section 7 of the Federal-aid Highway Act of 1952. Letters of intent to request Federal assistance were filed by the following States on the dates indicated: New Jersey, August 20; Connecticut and Pennsylvania, August 22; Massachusetts, August 23; and New York, September 5.

On September 19, the three eastern division offices were alerted on the approach of Hurricane Ione. This storm struck the North Carolina coast and then passed out to sea below Norfolk. The following day the North Carolina District Office had four teams in the area evaluating the damage. All of the heavy road damage occurred on the Federal-aid systems in North Carolina. The State did not request aid under the Federal-aid laws.

Under the law, one-half of the cost of emergency work on the Federal-aid highway systems that is performed on and after the effective date of the letter of intent is reimbursable, provided the work is within a project later approved for inclusion in the emergency program. Reimbursable damage on the Federal-aid systems for States filing letters of intent was estimated at \$31 million; damage on off-system roads was estimated at \$41 million.

White House Meeting

On September 6, a meeting was called at the White House to discuss flood disaster coordination. Members of the White House staff, the FCDA Administrator, and representatives of the Corps of Engineers and the Bureau of Public Roads attended. As a result of these discussions, the areas of responsibility for the several agencies were more clearly defined. The Bureau was given responsibility for clearance and restoration work on the Federal-aid systems. The Corps of Engineers was to assist in temporary clearance and restoration of off-system highways with the cost being paid from FCDA-Army funds.

The size of the disaster and the heavy concentration of the flood relief workload in the Northeast made it necessary for the Bureau to augment its engineering personnel in that area by temporarily transferring personnel from other district offices. Bureau engineers are working

with the State highway departments on the permanent restoration programs. The Bureau has already approved over \$6.9 million of the permanent restoration program, and the planning and design work has been completed on a large portion of the remainder. It was estimated that about \$15 million of Federal funds will be required for the Federal share of the emergency programs. However only \$9.1 million of flood relief money are available under Section 7 of the Federal-aid Highway Act of 1952.

Just as emergency work was being completed following the August floods, States in Division 1 were visited by another disaster caused by heavy rains from October 13-16. Again, Connecticut was the hardest hit, but New York, Massachusetts, and New Jersey also suffered additional damage.

Five of the six engineers from Division 1 who served with FCDA, had just returned to their regular duties when a new call for help was received. In addition to R. D. BEE who had not yet been released by FCDA, the following engineers were sent to Hartford, Conn.: JACK SMITH and RAYMOND W. BERGERON, Maine; ROBERT E. KIRBY, New Hampshire; CECIL W. UTLEY, Vermont; and SHERBURNE HILL, Jr., New York.

Schools

An Aerial Surveying School was held at Lincoln, Nebr., Nov. 1-17. The classes were conducted by WILLIAM T. PRYOR of the Washington office. Mr. Pryor was assisted by FRED TURNER and C. R. WRIGHT of his staff and PRESTON C. SMITH of the Physical Research Branch. In attendance were 32 engineers from the State highway department, Public Roads division and district offices, and from other State and city governmental agencies.

L. W. YEARKE, Division 1, K. J. ZINKAN, Division 4, and E. H. THOMPSON, Division 8, participated in on-the-job training in urban and geometric design at the Washington office for the period, Sept. 26-Oct. 28. Similar training was also given in administrative and audit work at the Washington office for the period Sept. 19-Oct. 7 for PAUL FAKLER, Wisconsin District Office, and PAUL E. BURKITT, Division 3 Office.

ROBERT A. LIPPARD and JOHN W. JAYNE, mechanics at the Denver Equipment Depot, attended training schools in heavy automotive equipment at Peoria, Ill., and Springfield, Ohio, during September and October.

Educational Counseling

Public Roads employees of the Washington office are invited to bring their educational problems to the Office of Personnel and Training. In this office there is kept a file of college and university catalogs which are available at all times for use of employees. In addition, Robley Winfrey, Chief of Personnel and Training, will be glad to discuss any educational problems or give advice and counseling on any matters connected with education and training.

For Public Roads employees in the field offices, Mr. Winfrey would be glad to give counsel or answer questions concerning educational problems by way of memorandums upon receipt of any request by mail.

Junior Engineer Recruiting

College students are now being recruited for the eleventh annual class of the Junior Engineer Training Program of the Bureau of Public Roads. As in past years, the various colleges and universities in the Nation are being visited by Public Roads representatives who interview students expressing a desire to work for Public Roads. The college interviewing will be completed before January 24, 1956, which is the last day for applying for the training program. Students who apply for the junior engineer positions will take a Civil Service examination on February 25, 1956.

In April, Public Roads will appoint the new junior engineers, GS-5, and junior engineering aids, GS-4, from those individuals who rate highest as a result of the examination.

Since 1946, when the current training program was started, Public Roads has appointed 263 junior engineers at grade GS-5, and 133 junior engineering aids at grade GS-4.

Ladies' Day

Washington area employees extend to FRANK CARLSON, District Engineer in Hawaii, sincere thanks for the beautiful orchids received October 10, Mr. Carlson's hobby is giving away these beautiful flowers. His visit to Washington was announced by the arrival by airmail of 1,000 baby orchids for distribution among all employees, together with corsages and sprays of the rare Hawaiian varieties seldom seen even in the flower shops in Washington. All of the orchids were put on display for the enjoyment of all who wished to see them, and it was a display well worth seeing.

Lady Road-Builders

It may come as quite a surprise to learn that women have engaged in work in the highway field that, in general, is reserved for men.

During World War I, women actually took part in the manual tasks of building roads. A strange sight it is to observe the fairer sex spreading gravel with a full-size shovel. The photograph is evidence of just such activity.

In 1918, the State Highway Engineer for Oregon wrote an article for one of the trade magazines in which he praised highly the efforts of women in highway construction. The highway department found that women were well fitted for many of the jobs in highway work, such as time-keeper, inspectors of pavement and materials, bookkeepers, and for driving automobiles and operating light machinery. A young school teacher spent a summer operating a gasoline roller to the complete satisfaction of the road superintendent.

Women were particularly capable in checking materials delivered to the construction site, and sent in neat and accurate reports far superior to those submitted by most men.

Following World War I, several women became quite successful as construction contractors. One early pioneer, a graduate engineer, was appointed road supervisor in Washing-

ton County, Ala. She had this to say of the drainage problems in those days—"I did what had never been done before in this region—drained the roads. I was told by our county agent that during the past ten years, \$100,000 had been spent on the roads in moving earth alone, yet there were no roads, only tracks and all of them in deplorable condition."

According to a bulletin of the International Association of Road Congresses, published in 1922, Dr. Lou Alta Melton was invited to attend one of their meetings in Chicago and was singled out as being the only woman bridge engineer in the country. Dr. Melton, a graduate civil engineer, was employed from 1919-22 by one of the district offices of the Bureau of Public Roads. She was the only woman engineer employed by the Federal Government at that time.

During World War II when manpower was in short supply, women again took on the tasks of maintaining the roads in some areas of the country. They drove dump trucks, operated rollers, and performed various other jobs of a lighter nature. As truck drivers, they were found to be more dependable, more careful, and easier to instruct than the general run of male drivers. As "flagmen," they were praised for their courtesy and efficiency. None were found wielding a shovel, however, as was the case in World War I.



Women employed on road work in Wisconsin and Maryland (inset) during World War I.

Public Roads Wins Again

HURNIE H. WHITEHEAD, operating engineer at the Langley Research Station, Virginia, won first prize of \$75 in the Department of Commerce Fifth Quarterly Suggestion Contest which closed September 30. At Mr. Whitehead's suggestion, the large boilers at the Langley Research Station were used down during the 4 summer months and the use of a small "bucket a day water" was substituted, saving approximately \$5,500 in operating costs. Public Roads now holds the distinction of being the only primary unit in the Department to win first prize for a second time in the quarterly contests. Rufe U. Popejoy, Division 6, was the first winner. The contests will continue indefinitely.

Suggestion Awards

Suggestion awards were made recently to the following employees:

NATHAN GORDON, design engineer in the Engineering Division of the Washington office, received \$50 for his suggestion that authority be delegated to the division offices to approve urban area boundaries in connection with Federal-aid projects. Besides expediting program approval, this change will result in an estimated annual savings of approximately \$50.

Mrs. BERNICE R. ELFORD, clerk-stenographer in the Division 8 Office, was awarded \$25 for her suggestion that Government employees be instructed in paper stock quality and values. This suggestion was accepted by the Department of Commerce, Office of Administrative Operations, which will issue instructions for the general information of all Department employees.

GEORGE R. HAYES, engineer in the Indiana District Office, received \$10 for his suggestion that vellum or similar paper, from which reproductions can be made, be used in the preparation of the maintenance inspection forms and listing of project data for railroad company certification. This suggestion applies only to Indiana, Montana, Ohio, and Virginia district offices. Annual savings were estimated to be \$35.

Federal Service Entrance Examination

Modern management looks into the future when it thinks about recruiting—looks into the future to assess what kinds of skills, aptitudes and experience will be needed to accomplish their objectives next year, 2 years, or 5 years from now. In or-

der to insure that we have the quality, the skills, the abilities we need, in 1960, 1965, or 1970, we must consider the nature of our recruiting now.

A fundamental requirement for the successful and efficient operation of the Federal service in the future is a systematic intake of people with potential for development during long-term careers. At the present time, the Federal Government is not obtaining a sufficiently high percentage of the Nation's college graduates—the major source of this calibre of new employee. Recruiting efforts have been generally successful in terms of quality, but have not resulted in an adequate quantity of placements to fill the long-range needs of the Federal service. To assure that the Federal service will have sufficient new blood at the entrance level each year, we must recruit, hire, and develop more college-calibre employees than ever before.

Improved Recruitment

With the advice and assistance of an inter-agency group committee on entrance level recruitment, the Civil Service Commission has developed a plan to improve and expand its program to recruit people desiring a career in the Government service. A major objective has been to develop a recruiting and examining program which will provide the Federal service with greater numbers of high-level ability people for all types of positions at the entrance level. Another objective has been to simplify the problem for applicants by reducing the number of examinations at the entrance level of the Federal service. Coupled with the strengthening of sound agency career programs and implementing the President's training policy announced January 11, 1955, it is believed that the new plan will go far to ensure the future strength and vitality of the career service.

The plan was put into effect through the announcement of a nationwide Federal Service Entrance Examination on October 18, 1955. This examination will cover a wide range of professions and occupations and should assure the Government of a balanced intake of highly qualified people at the entrance level.

It will not take the place of current entrance examinations in the physical science, engineering, or certain other technical fields. It will, however, be open to holders of bachelor or higher degrees regardless of subject matter specializations or fields of major study and to persons who have had appropriate equivalent experience.

You Can Help

If you know of someone who would meet the general standards for this examination and might be interested in the opportunity for a Government career, it is suggested you call their attention to the new examination. Detailed information will be available from any of the Regional Civil Service Commission offices, or from the post offices and local boards of U. S. Civil Service Examiners.

Our own Bureau needs able people to meet the future. You can help to find them and to arouse their interest in a career in public service.

Cycle Completed

The District of Columbia District Office moved again—this time from the new Post Office Building, 12th and Pennsylvania Avenue, to the Winder Building at 17th and F Streets, N. W. Incidentally, District Engineer Noland, who began his career with Public Roads in the Winder Building, finds that it takes 20 years and 16 moves to return to the original site.

DETROIT EXPRESSWAYS DEDICATED

On October 11, a milestone was passed with the dedication of the Detroit Expressways Interchange. This celebration symbolized the culmination of the greatest public program ever undertaken in Michigan on a co-operative basis, in providing for the construction of the John C. Lodge and Edsel Ford Expressway system. To date \$132 million have been spent on this program which is about 70 percent complete. When completed Detroit will have nearly 23 miles of depressed expressways crossing the city from west to east and south to north.

Since this improvement is on the Federal-aid system, it was fitting that Commissioner Curtiss was invited to be the principal speaker at the dedication ceremony. Mr. Curtiss commented on the fine cooperative spirit between City, County, State, and Federal officials as evidenced by the satisfactory accomplishment of this program. He also emphasized the continuing need for additional improvements of this high standard to handle the ever-increasing volume of urban traffic.

In addition to Mr. Curtiss, Commissioner Ziegler representing the Michigan Highway Department, Mayor Cobo representing the city of Detroit, and L. C. Smith, Engineer-Manager of the Wayne County Road Commission, also made appropriate dedicatory remarks.

New Assignments

THOMAS A. APPLE, engineer in the Florida District Office, was temporarily assigned to the New York District on work related to storm damage.

ROGER W. APPLETON, engineering aid, joined the staff of the Physical Research Branch in September.

ROBERT M. ALEXANDER, JR., engineer, was assigned to Division 9 in September.

ALFRED H. BARKER, JR., formerly with the Arkansas District of Division 15, was recently assigned to the Gatlinburg, Tenn., District. Mr. Barker was severely injured in an accident some time ago and spent many months in a Veterans hospital and at home recuperating.

DOUGLAS D. CHAMBERS recently joined the staff of the Physical Research Branch as instrument maker. Mr. Chambers had previously been a tool and instrument maker at the Naval Gun Factory. He has a background of nearly 25 years' experience in this type of work.

JAMES B. COOLEY, junior engineer, was assigned to the Division 3 Office for a period of one month following a 5-month assignment in the Florida District Office.

JOSEPH W. DUCKWORTH accepted employment with Division 15 at Eupora, Miss.

J. F. EMONDS, Wisconsin District Office, was assigned temporarily to the New York District Office to assist in Federal-aid work, while many of their engineers were engaged in emergency work resulting from the hurricanes.

CHESTER FULMER and MYRON COLLINS of the Delaware and Virginia districts, respectively, were temporarily detailed to the New Jersey District Office during the latter part of September to assist with Federal-aid work. These assignments were to continue until R. D. BEE and WILLIAM SCHMITT of the New Jersey Office completed their work with FCDA.

IVAN G. JENKINS, Urban Highway Branch of the Washington office, was assigned to Division 3 in Atlanta. Mr. Jenkins had just completed a 19-month training period in Washington.

LOUIS E. LYBECKER was assigned in October to the Urban Highway Branch in the Washington office for training. He had spent about 2 1/2 years on the WASHO road test project in Idaho, and an additional 10 months with the Physical Research Branch assisting in the preparation of the report for this test road.

JAMES M. NEWTON, Urban Highway Branch of the Washington office, reported to the Division 8 Office in October to work in programing and planning as well as urban design. Mr. Newton had just completed a 15-month training period in Washington.

WILLIAM I. REAMS, engineer in Division 15, returned to the Gatlinburg District after spending 7 months in the St. Paul, Minn., District. His present assignment is in the Everglades National Park.

JOEL Q. MADDOX and NATHANIEL E. MOSBEY, engineering aids, are new employees of Division 15. They have been assigned to work in the Everglades National Park.

CHARLES K. SCHWER transferred recently to Public Roads from the Bureau of Standards where he has served as a laboratory mechanic for the past 16 years. He will do similar work in the shops of the Physical Research Branch.

RICHARD L. SHARP, former engineer in the Wyoming State Highway Department, was assigned to the Bridge Section of the Division 9 Office.

RALPH H. SHULTZ, engineering aid, is a new employee with the District Office in the District of Columbia. He was formerly employed by the Pennsylvania Department of Highways.

WILLIAM H. STANHAGAN, junior engineer, has elected to work in the Hydraulic Research Branch for one month as part of his training in the Washington office.

GEORGE S. THROWER, engineer, transferred from the Roanoke, Va., District of Division 15 to the District Office in Florence, Ala.

D. L. TRUEBLOOD, formerly with the Highway Transport Research Branch in the Washington office, was assigned in September as programing and planning engineer for Division 5.

NORMAN B. WOOD has been appointed Chief of the Inter-American Highway Office, and in this capacity will supervise all Inter-American Highway activities under the direction of F. C. Turner, Assistant to the Commissioner.

Transfers and Resignations

Mrs. JOSEPHINE BRANTLEY, clerk for Federal Projects Branch of the Washington office, transferred to the Fish and Wildlife Service, Department of Interior, during October.

SHIRLEY GREENSPAN, clerk-typist in the Financial and Administrative Research Branch, transferred during October to the Department of Agriculture.

Mrs. LAURA POHUTSKY resigned from the Highway Transport Research Branch to join her husband in California, where he was recently assigned by the Air Force.

Mrs. CLARA V. ROTTMUND, Real Estate and Right-of-way Branch of the Washington office, resigned during September to accompany her husband, upon completion of his military duty, to their home in Lancaster, Pa.

Mrs. LEOTA L. WHEELER, clerk-stenographer in the Florida District Office, resigned in August to take a position with the Florida State Road Department. Mrs. Wheeler had been with Public Roads for 5 years.

PAUL H. WINCKLER, engineer for the South Dakota District Office, transferred to the U. S. Federal Civil Defense Administration at Battle Creek, Mich.

Retirements

Mrs. FRIEDA M. CARLON, Legal Division of the Washington office, retired in October. For the past 25 years, she served with the Legal Division. Mrs. Carlon began her Government career with the War Department in 1918 and transferred to the Bureau of Public Roads in 1920.

She resigned her position in 1923 and was reinstated in 1930. Altogether Mrs. Carlon completed nearly 31 years of Federal service.

RAY W. GEHRING, supervising highway engineer for the Construction Branch of the Washington office, retired in November after 19 years of service with the Bureau. He received his engineering degree from the University of Wisconsin, following which he was engaged in public utility and heavy commercial and industrial construction engineering in Wisconsin and Michigan. In 1936, Mr. Gehring left the Michigan State Highway Department to accept employment with Public Roads as a field technician on the State highway planning surveys. This was followed by an assignment to Division 6 where he was engaged as a field engineer on Public Works projects in Texas. In 1940 he returned to the Washington office for administrative duties. In April 1948, he transferred to the Turkey Division where he remained until September 1951. Upon his return to the Washington office he was assigned to the Engineering Division.

FLORENCE C. ODSTED retired during September from the Bureau's Washington office after serving more than 37 years in the Government. The past 36 years have been with Public Roads. She was employed in the Legal Division before transferring to the Fi-

nancial and Administrative Research Branch of the Division of Research. She will continue to live in Washington.

LEWIS P. SCOTT, District Engineer in Michigan since 1945, retired in September.

After graduating from the University of Missouri in 1910 with a degree in civil engineering, Mr. Scott was employed by the Great Northern Railroad Company, the U. S. Army Engineers, the Illinois Division of Highways, and the Kansas State Highway Commission. He also served as a 1st Lieutenant in the Corps of Engineers during World War I.

Mr. Scott joined Public Roads in 1923, and in 1928 was assigned as senior highway engineer for Michigan. He held that position until 1945, when the District Office was established in Lansing.

During his 9 years' residence in Lansing, Mr. Scott has been active in church, civic, and professional affairs. He is a member of the Lansing Engineering Club, a life member of the Michigan Engineering Society, and the American Society of Civil Engineers. Mr. Scott is also a registered engineer in both Illinois and Michigan. Mr. and Mrs. Scott plan to remain in Lansing.

Mrs. AUDREY E. SPIVEY, statistical assistant for the Highway Statistics Section of the Washington office, retired in October after completing 30 years of Federal employment.

Mrs. Spivey entered the Government in August 1918 as an employee of War Risk Bureau, an agency of the U. S. Treasury which later became the Veterans Bureau. She remained with that organization for almost 5 years and then resigned prior to the birth of her daughter. Mrs. Spivey returned to the Government in 1930, and was employed by the Bureau of the Census for a short time before transferring to Public Roads.

Her early employment in the Bureau was in the Purchasing Office, and later she joined the Highway Planning and Statistics Section. When the Highway Statistics Section was formed in 1942, she became an employee of that section where she remained until retirement.

Mrs. Spivey is now a full-time housekeeper. Upon the retirement of her husband from private employment, the Spiveys plan to move to Florida.

Former Employees

A. W. HEYER, senior highway engineer in the Division 6 Office at Fort Worth for approximately 24 years prior to his retirement in 1948, was a recent visitor to the Division Of-

fice. Affectionately known as "The Skipper" he recalled the time when he kept a staff of junior engineers busy reviewing plans, checking vouchers, and compiling Federal-aid statistics. Mr. Heyer has now retired from all active work, but keeps mentally alert by studying literature on nuclear physics and keeping abreast of real estate market values.

J. T. VOSHELL, retired Division Engineer for Division 4, lives at 760 E. Washington Street, Martinsville, Ind. He is enjoying good health and celebrated his 81st birthday in October.

JESSE E. WILLIAMS, former District Engineer, visited in the Colorado District Office and reported that the first year of his assignment in South America was interesting and enjoyable. Mr. and Mrs. Williams returned to Denver in order that he could undergo surgery. They expect to be there for about a month after which they will return to complete the second year of Mr. Williams' assignment as advisor to the Minister of Public Works at Bogota, Colombia.

BILL REES, former employee of the Tennessee District Office, is now working for a contractor in Colombia, South America.

Obituaries

JAMES R. BLAIR, formerly of the Indiana District Office, passed away on August 11. Mr. Blair was educated at Iowa State College. He served in the U. S. Navy during World War I and in 1923 started work with the Bureau of Public Roads in the Chicago Office. He was associated with the Indiana District Office as highway engineer from 1946 until March 1952, at which time he retired. After retirement he lived at his farm home, Blairoft, north of Indianapolis.

Mrs. Elizabeth L. Cornell, wife of EZRA B. CORNELL, resident engineer in the Alaska District Office of Division 8, was shot and killed on September 14 in her office in the Territorial Health Department where she had been employed for 2 years. She was the innocent victim of a man seeking revenge against the Health Department. Her husband and daughter, Betty Jo Cornell, a student at the University of California, survive.

RICHARD R. TIPTON, former bridge engineer in Division 5, died of a heart attack in Berkeley, Calif., on October 4. Mr. Tipton retired from Public Roads in July following 30 years of service.

M. D. WILLIAMS, a retired employee formerly with the Alaska District Of-

fice, died September 28th after an extended illness. Mr. Williams was 79 years old.

ALBERT H. WORLEY, former engineer with Public Roads, died of a heart attack in Kansas City, Mo., on October 11.

The Bureau of Public Roads extends its sympathy to the bereaved families.

Personals

WM. A. WOOD of the Division 8 Office married Mrs. Harrison Griffith on October 15.

Proud parents of new offspring are as follows:

RUBEN J. EDINGER, Montana District Office, a daughter, Dorothy Jean, born in October.

DAVID A. GORMAN, Highway Transport Research Branch, a daughter, Rochel Deena, born in September.

IVAN C. JENKINS, Division 3 Office, a son, Ivan C., Jr., born in September.

CURTIS C. KELLEY, Division 3 Office, a son, Terry V., born in September.

ROY S. MARCY, Division 1 Office, a son, Douglas Glen, born in October.

VANCY H. MIZZELL, Ohio District Office, a daughter, Emily, born in October.

JOHN D. O'FALLON, Bridge Branch of the Washington office, a daughter, Mary Catherine, born in August.

Public Roads employees completing short tours of active duty with the armed forces were as follows:

Lt. Col. J. H. GROENIER, Wisconsin District Office, Camp McCoy, Wis.; Lt. Col. R. D. HUNTER, Maine District Office, Fort Rodman, Mass.; Lt. Col. RICHARD C. LUCKNOW, Jr., Division 8 Office, Yakima Firing Center, Wash.; Maj. J. W. WHITE, Michigan District Office, Camp McCoy, Wis.; and Lt. Comdr. D. F. WORLEY, North Carolina District Office, U. S. Naval Station, Key West, Fla.

Col. W. P. PRIVETTE, district programming and planning engineer for Oklahoma, was called to active duty with the Army for a 75-day period. He is serving as liaison officer for the Army Engineers and State and local highway authorities in the maintenance and repair of roads by engineer troops during the current maneuvers in Louisiana.

WILLIAM A. BLANCHETTE, Division 15, received his certificate as a registered professional engineer in New Hampshire.

PAUL C. FAKLER and BLANCHE L. JOHNSTON of the Wisconsin District Office

represented Georgetown University and the University of North Dakota, respectively, on the occasion of the 110th Rededication Ceremonies for the Wisconsin Historical Society at the University of Wisconsin campus.

Claude Newton O'Donnell, 19-year old son of C. W. O'DONNELL of the Tennessee District Office, was selected as a member of the Nashville Symphony Orchestra for the 1955-56 season. He was one of three members of the Nashville Youth Orchestra to be selected for the Symphony.

FRED B. FARRELL, MALCOLM F. KENT, and EDWIN C. GRANLEY, Research Division of the Washington office, are members of the Silver Spring Toastmasters Club No. 1314. This is one of 1,700 clubs of an international organization of professional men interested in speech development. Fred Farrell was one of the originators of the Silver Spring Club and has served as president and vice-president of the organization.

A. C. TAYLOR, former Division Engineer for the Philippines, was guest speaker at the first fall meeting of the NFFE BPR LOCAL No. 2. He described conditions confronting our engineers and their families on foreign assignments and gave interesting sidelights of road building in the Philippines.

Mr. Taylor returned in October from a meeting of the Technical Committee of Experts of the Pan American Highway Congress held at Lima, Peru, Sept. 19-25. He was U. S. delegate at the meeting. On his return to the United States, he traveled over portions of the Inter-American Highway from Panama to Guatemala City, and visited most of the Bureau's offices along the way.

Mr. Taylor said that he found the highway in much better condition than he expected it to be.

H. Q. THOMAS, District Engineer for New Hampshire, was elected president of the Concord Congregational Union. This organization is over 100 years old and comprises the six Congregational churches in Concord and environs. The organization departed from tradition in electing a layman to the office—ministers have traditionally held the office.

The following Public Roads employees of the Washington office have joined the Department of Commerce Chorus: ELEANOR S. CHRISTIAN, MORRIS P. BLUMENFELD, BARBARA ROSSON, MARION HAVENER, CATHERINE L. LAPENOTIERE, and MAE R. KING.

Illnesses and Injuries

Mrs. ANNA BUENAVENTURA recently returned to her duties in the Urban

Highway Branch of the Washington office after an illness of 6 weeks due to a respiratory ailment.

LOWELL S. COY, engineer in Texas District Office, spent 3 weeks at home recuperating from minor surgery.

FRANK H. HORTON was injured seriously in a blast on July 18 while at work on the Inter-American Highway in Guatemala. Mr. Horton, who transferred from the Maine District Office in June, is recovering in a hospital from a compound fracture of one leg, knee-cap fracture, and multiple cuts on arms, legs, and face.

Friends of Mr. Horton in the Maine District have recently received letters from him stating that he is making a satisfactory, although slow recovery.

BERNARD L. KING, engineering aid assigned to forest and park work in Division 9, was injured in a recent automobile accident. The accident occurred in the vicinity of Hot Springs, S. Dak. Mr. King suffered lacerations and severe fractures of one leg and is in a Hot Springs hospital. He was temporarily assigned on the highway construction project at Wind Cave National Park, S. Dak.

HENRY J. MCKENNEY, Rhode Island District Engineer, is undergoing treatment at Our Lady of Fatima Hospital, North Providence, R.I., for a cerebral hemorrhage suffered late in August. He is showing slight improvement.

D. K. SHEPARD, District Engineer for Honduras and El Salvador, returned to Washington in October to undergo an eye operation. R. T. Turner will act for Mr. Shepard during his absence.

PEGGY STARK, Highway Transport Research Branch, returned to work following a 3-week illness.

EDWARD MCGUIRE TURNER, District Engineer in Amman, Jordan, is in the Bethesda Hospital where he underwent vascular surgery. The latest report is that the operation was successful, and that he may have visitors.

EDWIN C. TILLACK, Engineering Division, is at home recuperating after undergoing surgery at George Washington Hospital.

Foreign Assignees

Inter-American Highway.—M. L. HARSHBERGER, District Engineer in Costa Rica, spent 2 weeks in the Washington office working with the staff in preparation for issuing bid calls for construction projects in Costa Rica. Mr. Harshberger was accompanied by his wife, and they will take a short leave before returning to Central America.

A. P. RINELLA, equipment specialist in Costa Rica, returned to duty following a period of leave in the States.

Bids were opened in Guatemala City on September 10 for three Inter-American Highway projects at a total bid cost of about \$10 million. Work contemplated is grading, draining, and base coarse preparation on about 90 miles in northern Guatemala, including the presently impassable section near the Mexican border. Work is scheduled for completion in 1958.

Ethiopia.—SHERMAN L. HULL, highway planning engineer, and FRANK J. GUINN, equipment specialist, were assigned to Ethiopia. Mr. Hull was formerly with the Wyoming State Highway Department.

Jordan.—JAMES S. MARSHALL, equipment specialist, was recently assigned to Jordan.

Safety Program

Division 8 has instituted a unique safety program for its field engineers. A memorandum dealing with common accidents and their prevention is sent to each field party at intervals and is read to the crew. Illustrated cartoons, contributed by talented employees in the field, are reproduced and circulated to all field projects for posting on bulletin boards. A good example is shown here.



Library Notes

Are you going to make a speech or write a report? Have you been appointed chairman of a conference? If so, the Library has books which will help you. These are available for loan to field as well as Washington office employees.

Here are a few suggestions: How to Conduct Conferences, by Alfred M. Cooper; Principles of Speech, by Alan H. Monroe; Public Speaking for Businessmen, by William G. Hoffman; and Report Preparation, by Frank Kerekas and Robley Winfrey.

PREFAB TUNNEL LINING

Prefabricated homes, lift-up and tilt-up techniques for larger buildings, and precasting for bridge superstructures are now commonplace. With such a background of accomplishment it was logical and only a question of time until prefabrication (precasting when applied to concrete work) would invade the tunnel lining field. By employing a combination of precast lightweight concrete tunnel-liner rings and cast-in-place natural aggregate concrete sections between rings, a 280-foot tunnel lining job has now been completed on the Stevens Canyon Highway in Mt. Ranier National Park. The rings were cast in Portland, Oreg., and hauled 175 miles to the site. Their inside radius is 14 1/2 feet; they are 10 inches thick and 2 feet wide, and each quarter circle segment weighs 4,050 pounds.

After erection at 9 feet, 8-inch centers on previously cast walls, the tunnel rings become templates for forming both the inside and outside surfaces of the lining. They are cast with projecting bolts from which the interior forms can be hung, and the rings thus completely support all the dead load of forms and fresh concrete without any interior falsework to clutter up the working area and impede traffic. This is a decided advantage.

By using precast tunnel lining it is possible to follow closely behind the excavation, furnishing any necessary support with the permanent

lining and eliminating the usual intermediate step of temporary timber lining.

Grout Injector Used

Concrete placement in the cast-in-place sections is easily and economically performed using a pneumatic grout injector. Although developed to handle grout, this machine easily handles concrete of normal proportions and water content and with 3/4-inch maximum size aggregate. After the concrete is dumped into the 6-cubic foot bowl of the machine, air at 100 p.s.i. pressure supplied by a trailer-mounted air compressor forces the charge through 3-inch diameter steel pipes and flexible hose into the forms. The bowl can be recharged very rapidly. On this project concrete in the cast-in-place sections was placed at a rate of 5 cubic yards per hour using only light and easily maneuverable equipment.

Cost of the method is about the same for this project as a cast-in-place lining, but the contractor is enthusiastic over the results and would undoubtedly bid lower on future jobs of this type.

14 Aids to Effective Management

W. W. Johnson of the Veterans Administration published in the September 1955 issue of VA Personnel Information Bulletin, an article entitled YOU AND EFFECTIVE MANAGEMENT.

We will not attempt to quote his entire article, but thought you might be interested in reading what he considers 14 good habits of thought and action which, if used and practiced, would lead to more effective management. We too think they are excellent ideas and believe they will be helpful to our work in Public Roads.

1. Make notes.
2. Ask questions as a way of getting your thinking started.
3. Organize, deputize, and supervise.
4. Give attention to first things first.
5. Get the facts.
6. Develop good assistants.
7. Give and gain cooperation.
8. Have a place for everything and keep everything in its place.
9. Pass on unclassified information.
10. Be careful with classified information.
11. State your problem in writing.
12. State your plan in writing.
13. Test your plan.
14. Carry your plan through.

Pavement Deflection

Two of the pavement deflection measurement beams developed by A. C. Benkelman are being made available by the Bureau to the States in Division 6 for demonstration purposes. To date they have been used in the Waco District of the Texas Highway Department. Several recently constructed Federal-aid projects indicated reasonably small deflections under the 18,000-pound axle legal load limit; however, two old roads which have required extensive maintenance show very large deflections under this same load.

The exact limiting deflection is not known at this time, but any deflection in excess of 0.050 inches is tentatively being considered as excessive. This is the thickness of a penny.

Thomas H. MacDonald, who is now at Texas A. & M. College, was among the visitors at the demonstrations.



Precast concrete tunnel-liner rings

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