

# ARTBA Helps Achieve First Federal Investment in Roads

By Tom Kuennen

Government and contractor members of the American Road & Transportation Builders Association (ARTBA) helped achieve the birth in 1916 of the Federal Aid Road program.

Their support and input as members of the American Road Makers (ARM), later the American Road Builders Association (ARBA)—as ARTBA was known before

1977—helped American legislators frame a bill that boosted rural road construction in a time of tremendous increase in the number of autos and trucks. As today, ARTBA consulted its members, provided commentary and printed copies of the proposed legislation for distribution to industry leaders.

Also during this time period, in 1914, state highway officials formed the American Association of State Highway Officials (AASHO, later AASHTO).

## Part of a Coalition

In the 'teens, as now, ARTBA was part of a coalition that worked with the federal legislature to craft the 1916 surface transportation legislation. "The American highway coalition was built from the bottom, up," writes Stephen B. Goddard in *Getting There: The Epic Struggle Between Road and Rail in the American Century*.

"... ARM and AASHO ... viewed cooperation as a greater goal than independence," Goddard wrote in 1994. "The gestures of [Logan] Page and [Dorsey] Shackelford [below] in uniting AASHO and the federal road establishment in a joint venture and the unity between private [sector] and government engineers were characteristic of the times."

Also, paved and unpaved roads and streets conceived, designed and built by ARTBA government and contractor members facilitated the boom in passenger automobiles and motorized trucks that flooded the byways of the United States after 1910.

During the decade, the boom in automobiles and trucks further stimulated America's industrial prowess. And for many, rising disposable incomes meant one thing: acquisition of a motor car!

## Great Leap in Vehicles Owned

The decade of the 'teens saw a tremendous leap in the number of vehicles (automobiles and trucks) owned, and this spurred growth in road construction in that period.



The Berlin Pike in New Haven, Conn., was used extensively for testing new cars from various New Haven factories. (1911) Photo courtesy of the National Archives.

The value of highway, road and street construction put in place in the United States in 1915 totaled \$302 million. By 1920 it had more than doubled to \$656 million, some of the spending attributable to the 1916 U.S. Road Act.

The mileage of paved roads rose from 204,000 in 1910 to 369,000 in 1920. But in a pattern that repeats to the current day, vehicle registrations for the period far outstripped the increase of road construction.

U.S. Department of Commerce statistics show that the number of automobile registrations leaped from 458,000 in 1910, to 2.3 million in 1915, to 8.1 million in 1920. The number of trucks registered exploded even faster, from 10,000 in 1910, to 1.1 million in 1920!

"I believe that there is a positive need for a centralized control and a highly skilled supervision on the part of [a road] agency of the state, particularly with reference to the design and inspection of highway bridges, the expenditure of large local bond issues, the handling of local funds for highway work as to systems of accounting and cost keeping, and finally as to the qualifications of the men locally suited to carry on road work."

— Logan Waller Page, director, U.S. Office of Public Roads and Rural Engineering, at the ARTBA-sponsored Pan-American Road Congress, 1915

## ARTBA TIMELINE

**1910**  
The American Road Makers (ARM) is incorporated in New York City as the not-for-profit American Road Builders Association (ARBA).

ARBA meets once again in December in Indianapolis, Ind., and holds trade show with 45 exhibits.

**1911**  
*November:* ARBA holds its eighth annual convention in Rochester, N.Y.

**1912**  
First automatic electric automobile starter.

## ARTBA Serves as Industry Advocate on 1916 Bill

Throughout the decade—in addition to its lobbying efforts—ARTBA provided a platform for the dialogue on how our nation would deal with the explosion of autos and trucks, particularly the 1916 Federal Aid Road bill.

One venue was the ARTBA-sponsored Pan-American Road Congress, held in Oakland, Calif., in September 1915. In a keynote address, U.S. Office of Public Roads (OPR) Director Logan Waller Page said: “The growth of the motor vehicle industry has been not merely rapid, it has been stupendous.

“This phenomenal [automobile] traffic came suddenly upon thousands of miles of water bound macadam and gravel roads which had been built to meet the older forms of traffic,” Page said. “The result was that by the time legislatures awoke to the necessity of providing adequate money and organization, their roads had deteriorated.”



ARTBA's second chairman, James H. McDonald, succeeded Horatio S. Earle and served from 1904-1911.

As state road programs centralized, great progress had been made in recent years from the standpoint of road construction, Page said, but lesser progress toward maintenance.

## 1915 ARTBA Debates Federal Role

At ARTBA's 1915 event, following Page's paper, Pan-American Road Congress Chairman J.H. Pratt questioned whether maintenance should be an integral part of a federal road program. Pratt had been

lobbying for just such a provision in his home state of North Carolina.

But delegate Lamar Cobb, of Arizona, said such a law linking road funds to maintenance would be a “will-o-the-wisp” and was doomed to failure so long as the public wanted more money spent on more road mileage, without thought of maintenance funds.

In the federal bill being discussed, the role of the federal government should be limited to subsidy, not to the construction itself, another delegate warned.

“I am [not] in favor of the federal government going into the road building game, outside of the National Parks,” said delegate C.L. MacKenzie, president, Washington State Good Roads Association. “I have always been afraid it would create an immense ‘pork barrel’ if the federal government appropriated large sums for the direct building of roads ... [so] inclined to build roads for political needs, or for any other service than that of serving traffic.”

## 1916 Federal Aid Road Program Established

Following such national debate, the Federal Aid Road Act of 1916 was passed, from ARTBA's perspective, the most important event of the decade. This achievement established a federal role in road construction and set a pattern in the state-federal partnership for decades to come.

The 1916 bill was derived in large part from legisla-

“... The people want federal road legislation; but they radically differ in opinion as to what such legislation should provide ... The ‘touring roads’ class demands that the United States should limit its road activities to the construction and maintenance of a few ‘ocean-to-ocean’ and ‘across-the-country’ highways of great perfection and then leave the rest of the people to build their own roads or do without ... the ‘business roads’ class ... favor[s] a general system of roads radiating from the towns and railway stations out among the farms.”

— Rep. Dorsey Shackelford, Missouri (1913)

tion introduced by Rep. Dorsey Shackelford of Missouri, an early framer of the 1912 Post Roads bill. That Post Office Appropriation Act of 1912 gave real-world experience as to how federal funds could be used to improve rural roads.

“The [U.S. Office of Public Roads, OPR] learned valuable lessons which Director Page was able to pass on to the framers of the Federal Aid Road Act of 1916,” said FHWA in *America's Highways, 1776-1976*. “The most important of these was that federal aid should be dispensed only through the 48 states, avoiding the complexities of dealing with the Nation's more than 3,000 counties.”

And just as today, federal funds would be distributed with strings attached, to compel the states to adopt federal social policies, FHWA noted. While the Post Roads Act was targeted at improving rural lifestyles and education, “[l]ater legislation conditioned federal grants for roads on state compliance with the 8-hour [daily labor] law, the prohibition of convict labor, the use of hand labor methods, [and] the payment of minimum wages.”

Also, the perpetual donor-donee state struggle dates to this year. “Opponents ...



The first project completed under the Federal Aid Road Act of 1916 was in Contra Costa County, Calif. (1918) Photo courtesy of FHWA.

### ARTBA TIMELINE

Post Office Appropriation Act provides \$500,000 for experimental federal-aid program for postal roads; paves way for 1916 Federal Aid Road Act.

ARBA holds annual convention in Cincinnati, Ohio.

### 1913

December: ARBA's Philadelphia, Pa., Convention draws 4,000 delegates, despite the fact that ARBA membership totals 648. W.A. McLean, chief engineer and director of highways for Ontario, becomes first non-U.S. citizen to head ARBA.

were particularly bitter that the cities, which contributed a very large share of the revenue in all states, got nothing at all from the bill," FHWA noted. Farm states replied that urban areas already were benefiting from federal largesse, in terms of public works such as federal building and harbor construction and veterans' pensions.

The final bill became law July 11, 1916, and established many precedents:

- Federal road funds were apportioned one-third according to a state's area, one-third by population, and one-third according to post road mileage;
- States would have to establish highway departments and meet a 50:50 match for federal funds, federal match not to exceed \$10,000 per mile;
- In an antecedent of annual obligation ceilings, funds were provided at \$5 million for 1917 (\$76.3 million in 2000 dollars), but increasing by \$5 million each year up to \$25 million by 1921 (\$208 million in year 2000 dollars), to allow for increased road construction as the program unfolded; a total of \$75 million over the five-year course of the bill;
- No tolls would be allowed on Federal Aid roads; and
- States would be responsible for maintenance of the road, and if not properly maintained, future federal funds could be withheld.

**"The farmers used to have us buffaloes in Washington [State] like they have you buffaloes in Indiana. As long as you stay buffaloes and until you show them that the money spent on these roads will come back to them, you will not have good roads, unless some of us fellows out here on the Pacific coast contribute money to help build roads in your state."**

— C.L. MacKenzie, president, Washington State Good Roads Association, at the ARTBA-sponsored Pan-American Road Congress, 1915

14th annual convention at Boston in 1917, U.S. Office of Public Roads (OPR) Director Page gave ARTBA members an analysis of this landmark bill the year after it was enacted.

"Road construction, maintenance and management have been revolutionized," the ARTBA members heard. "The passage of the Federal Aid Road Act has served to bring the federal government to the aid of the states through the working out of a great cooperative policy under which the states and the federal government share the expense of road construction."

This new covenant brought responsibilities to both parties, Page said.

"With the states rests the power of initiative and of determining whether or not they will participate," Page told ARTBA in 1917. "If they elect to participate, they have the power of making original selection of the roads for construction. They

make the surveys and prepare plans, specifications and estimates and when the actual work of construction is reached, the duty of directly supervising the work, and of maintaining the roads construction, is allotted to the state, while to the federal government, falls the duty of inspection and approval, to the end that there may be a check and balance provided."

## Highway Construction Bogs Down

Adding more momentum to this potential new work were sizable road bond issues from 1915 on at the state and



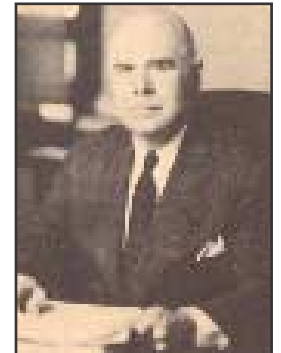
A.E. Palen, OPR senior engineer, on the job in 1918. Photo courtesy of FHWA.

county levels. But discouraging highway construction in this period were severe material and labor shortages, primarily the result of the United States' entering World War I (1917-1919).

"World War I interfered with the implementation of this program due to shortages of material and manpower," reported AASHTO in its 1991 history, *The States and the Interstates*. "Furthermore, tardy state submission of plans and overzealous inspections by federal engineers delayed construction. By March 1919, only 13 miles of Federal Aid highway had been constructed."

To be sure, ARTBA highway contractors had much to complain about, even early in the decade. For example, contractor griefs were voiced at ARTBA's eighth annual convention held in Rochester, N.Y., November 1911.

"The contractor's complaint is that while the cost of labor and living, generally, are increasing, contract prices are going lower, and the lower prices are not producing better work," said C.A. Crane, at ARTBA's 1911 Convention.



In 1919, Thomas MacDonald, chief engineer of the Iowa State Highway Commission, began his career as chief of the Bureau of Public Roads which spanned more than 40 years.

## 1917: ARTBA Hears OPR Analysis

The 1916 act rapidly changed the face of American road building. At ARTBA's

### ARTBA TIMELINE

**1914**  
The American Association of State Highway Officials (AASHO), later American Association of State Highway & Transportation Officials (AASHTO), is formed.

ARBA holds annual convention in Chicago, Ill.

**1915**  
*September:* ARBA and sometime-rival group, American Association for Highway Improvement, hold joint convention in Oakland, Calif., known as the Pan-American Good Roads Congress.



Due to rising prices, road contractors of 1911 were not benefiting from mechanization, he said. “With the introduction of special machinery to supplant manual labor, the prices should be lower; on the other hand, there has been a more than compensating increase in other elements of cost.”

In particular, Crane attacked cost items in bids, recently having been introduced by the New York Highway Commission. “With all due deference to engineers, until they become contractors themselves, or work for a contractor, it is a rare exception to find one who has any real knowledge of cost,” he said. “Itemized costs can have no interest

for the public which is concerned only in the performance, or for contractors who have, or ought to have, more knowledge on the subject than the engineer.”

At ARTBA’s 1911 Convention, Crane also demanded written change orders approved by both parties. “Provisions should be made that if any change materially affected the cost of the work, such change could only be effected by written agreement between both parties,” he said presciently. “As it reads now, a contractor would have no right to recovery for materials purchased for the work, if the state should decide on a change which obviated the use of

such materials.”

Such ARTBA criticism continued in 1913, where at ARTBA’s Pittsburgh, Pa., Convention, a contractor member bitterly complained of archaic contracts.

**“It is unfortunate that there is a more or less prevalent tendency to associate contractors on public work with politics and graft ... in the main, the contractor gives full value for money received and that the exceptions are no more frequent in the contracting than in any other business.”**

— C.A. Crane, ARTBA’s 1911 Convention, Rochester, N.Y.

“The form of contract in use in most of the states and municipalities is a relic of the dark ages and contains certain stock sentences and paragraphs that are absolutely unfair to the contractor and are never included in contracts between individuals,” said John H. Gordon, an Albany, N.Y., contractor.

Uncannily echoing some 21st century complaints, Gordon said: “These clauses seek to make the contractor liable not only

for his own mistakes and misfortunes and the ordinary hazards of construction, but, in unmistakable terms, fasten on him the liability for the errors, inefficiency or carelessness of the state’s agents and employees.”

## Eisenhower Takes Cross-Country Trek

The decade of the ’teens ended on a note of great import as Lt. Dwight



Workers break up stone by hand at this road construction site in Luzerne County, Pa.

## “Apostle of Concrete” Lives In ARTBA-AASHTO-TRB Award

As the first Federal Aid Road Act took effect in 1916, the “Apostle of Concrete” spread the gospel of portland cement concrete roads from coast to coast.

This early promoter was George S. Bartlett, who worked tirelessly promoting road construction from 1916 through World War II. Originally in the employ of cement manufacturers, Bartlett later joined the staff of the Portland Cement Association.

Bartlett’s memory is preserved with the distinguished award bestowed by the highway community each year, the George S. Bartlett Award.

Co-sponsored by ARTBA, the American Association of State Highway and Transportation Officials (AASHTO) and the Transportation Research Board (TRB), the Bartlett Award is conferred annually on an individual who, in the judgment of leaders from the three organizations, has made outstanding contributions to highway progress over his or her career.

The award was established in 1931 by a group of friends of Bartlett to perpetuate the spirit of friendship and helpfulness that he brought to his work in the highway field.

Recent honorees include Federal Highway Administrators Ray A. Barnhart (1988) and Tom Larson (1989); elected officials such as Rep. Norm Mineta (D-Calif, 1994, now U.S. Secretary of Transportation under the Bush Administration); state DOT executives and AASHTO Presidents Charlie Miller (Arizona, 1992), Dean Carlson (Kansas, 1995), Wayne Muri (Missouri, 1996) and Darrel Rensink (Iowa, 1999); long-time AASHTO Executive Director Frank Francois (1997); long-time TRB Executive Director Tom Deen (1993); long-time ARTBA President Dan Hanson (1991) and 1991 ARTBA Chairman Jack Lanford.

### ARTBA TIMELINE

**1916**  
Federal Aid Road Act of 1916 establishes first-of-its kind federal program for disbursements to states.

A monument to ARTBA’s founder, Horatio Sawyer Earle, former Michigan state highway commissioner, is dedicated in Mackinaw City, Mich.

ARBA holds annual meeting in Pittsburgh, Pa.

**1917**  
Some 3,500 persons attend annual convention in Boston in February. More than 106 exhibits are part of trade show and A.W. Dean, a state highway engineer of Massachusetts, is named chairman.



ARTBA founder Horatio S. Earle standing alongside the monument dedicated July 14, 1916, to: "HORATIO S. EARLE, FATHER OF MICHIGAN GOOD ROADS."

Eisenhower rolled into San Francisco from Washington, D.C., in September 1919, after having concluded a transcontinental convoy for the U.S. Army.

Was our great Interstate highway system born during that convoy?

"[Eisenhower's] first realization of the value of good highways occurred in 1919, when he participated in the U.S. Army's first transcontinental motor convoy," wrote FHWA historian Richard F. Weingroff in *Public Roads* magazine in June

1996, on the 40th anniversary of the Interstate system.

"On the way west, the convoy experienced all the woes known to motorists, and then some," Weingroff wrote. "For the soldiers, worst of all, speeches, speeches and more speeches in every town along the way."

Later, after the Second World War, Eisenhower would visit Germany and see its fabulous autobahns. "The old convoy," Eisenhower said, "had started me thinking about good two-lane highways, but Germany had made me see the wisdom of broader ribbons across the land."



W.A. McLean, chief engineer and director of highways for Ontario, Canada, became the first non-U.S. citizen to head ARBA in 1913.

But much more would happen before the Interstate system would see the light of day. **TB**

## NEXT MONTH: Roads Fuel the Roaring Twenties (1920-1929)

### About the Author

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# 100th Anniversary Trivia..

1. What year was the first federal-aid highway act signed into law?

- A) 1908
- B) 1912
- C) 1916
- D) 1922

2. Who was the first woman to be named an ARBA officer?

- A) Ethel Birchland

- B) Louise Wynn
- C) Betty Lanford
- D) Charlotte Upham

3. What year did ARBA move its headquarters from New York City to Washington, D.C.?

- A) 1918
- B) 1922
- C) 1928
- D) 1932

4. What was the first state contractor chapter to join ARBA?

- A) West Virginia Road Builders Association
- B) Georgia Road Builders Association

- C) Virginia Road Builders Association
- D) Michigan Road Builders Association

5. What year did ARBA help find the "Road Gang?"

- A) 1922
- B) 1932
- C) 1942
- D) 1952



Answers: C, A, C, B, C

## ARTBA TIMELINE

ARBA curtails activities in light of U.S. entering World War I.

### 1918

First wheel load tests for roads conducted in Virginia.

ARBA meets in St. Louis, Mo. Increases number of directors to 21, including Delaware state highway engineer Charles M. Upham, who would serve as ARBA's business manager and later secretary (later engineer-director) for 21 years. H. Eltinge Breed is named chairman.

### 1919

*April:* Federal Highway Council—a coalition of road advocates—urges support of national highway system in lieu of rural roads supported by 1916 Federal Aid Road Act.

*July:* Thomas MacDonald, chief engineer of the Iowa State Highway Commission, is appointed chief of the U.S. Bureau of Public Roads.

Arthur Blanchard is elected ARBA chairman, the first non-government person in that position.

*September:* After 62 days on the road, Lt. Dwight D. Eisenhower arrives in San Francisco from Washington, D.C., after having led the U.S. Army's first transcontinental convoy.