

Why do those tires look strange



These Bandag retreads were popular throughout the 1960s – 1980s. Leaning on the stack is “Highway” trailer pattern on a radial casing. The top of the tire stack is “Cross Bar,” an aggressive lug drive popular on logging trucks. The middle tire is the “Hi Speed” trailer pattern – which is still sold today – and the “Super Trac” drive is pictured on the bottom.

It all started when an inquisitive Roy Carver, who was in Germany on business, asked about the strange-looking tires on a taxi. The driver said they were retreads from Bernard Anton Nowak of Darmstadt, and enthused, “they never wear out!”

Carver returned from Germany to his home in Muscatine, Iowa with the North American rights to sell the new-fangled retreads. On December 20, 1957, Roy Carver started Bandag, Incorporated. The name comes from Nowak’s initials (BAN); D is for Darmstadt and AG is German for incorporated.

Since 1957, Roy Carver and his Bandag retreads have changed an industry.



What were retreads like before Bandag?

Unpredictable at best. Many service stations and tire dealers retreaded tires but they operated independently. There were no guarantees. No brand names to trust and no warranties to rely on if the rubber was defective or the work was shoddy. Some dealers built first-rate recaps; some did not.

It was tough for dealers, too. Buffing machines came from one manufacturer, hot-cure molds from another, rubber came from still another and so forth. It was up to the dealer to shop the vendors, buy all the various pieces and figure out how to retread a tire. There was no training, and of course, no instruction manual.

Providing a good selection of retreaded tires proved to be difficult.

How so?

Think of all the various sizes of tires required for one community. No retreader could possibly have a mold for each and every tire size and tread pattern – including those used for cars, pickups, tractors, construction equipment and specialty vehicles.

If a fleet owner pulled up with all his trucks, the dealer could be faced with recapping as many as three different kinds of tires. Sometimes he could retread all the tires, every position. Most likely, he could retread only a few.

Before Carver went to Germany, did he have the same problem?

Carver wasn't in the retreading or tire business. He owned Carver Pump Company. Trained as an engineer, he was always curious about how things worked.

During the Depression, he bought broken pumps, took them apart – with his sisters' help – and used replacement parts to rebuild the pumps to good-working order.



Because he took apart so many old pumps, he learned why they failed. He used this knowledge to build a new superior, high-quality pump.

His good timing turned to be his good fortune.

World War II was brewing.

Yes, and his high-quality pumps were very popular in Europe in the late 1930s. The pumps had a reputation for unparalleled performance. Carver refused to make junk, declaring he wasn't wired that way. And so the Carver Pump Company flourished during the war years, and enjoyed continued success during the post-war boom.

Throughout his life, Roy Carver was fascinated with gadgets and mechanical devices. He earned an engineering degree at the University of Illinois before starting his pump company.

So how did he get into retreading?

On a business trip to Germany in 1957. That's when he saw the strange-looking tires on the taxi, and learned about Bernard Anton Nowak's retreads.

He got into the business of retreading when he returned from Germany and opened a retreading plant in an old sauerkraut factory in Muscatine, Iowa.

Wasn't he just another retreader?

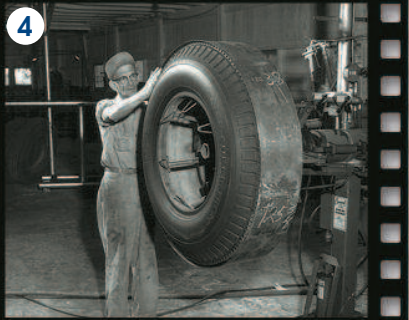
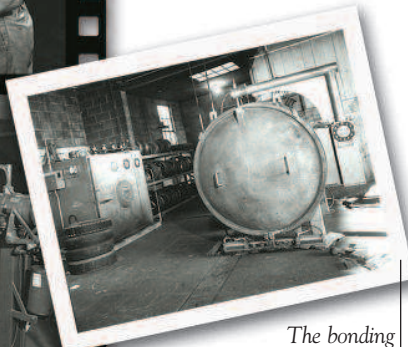
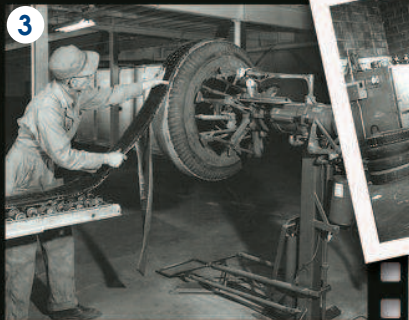
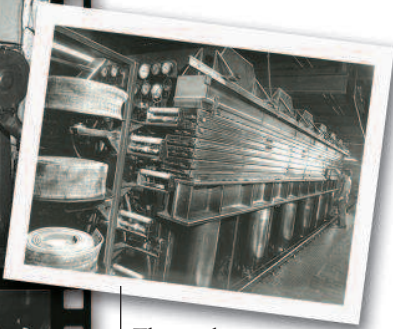
Bandag did operate its own facility, but Carver sold franchise agreements to tire dealers so they could manufacture and sell Bandag retreads. His concept was groundbreaking.

Retreaders used to have to buy from several vendors. Carver put it all in one simplified package: Dealers got everything they needed: the equipment, pre-cure tread, training, sales, technical assistance and advertising support.



The "Modified Highway" was popular on trailer positions because it delivered long mileage. So popular in fact, Bandag offered the tread from the late 1950s to the early 1990s.

These photographs were taken in the "old sauerkraut" factory sometime around 1958 to 1963.



This machine "pressed" the tread design into the rubber – similar to a waffle iron – in about 20 minutes. On the left are three racks of uncured rubber extrusions waiting their turn.

The bonding room was replaced by this "curing chamber" around 1964.

1. A machine buffs away the old tread compound.
2. Before cushion gum was invented, "solution" was used to bond the tread and casing together. Here, the solution is applied to the tread ends.
3. As the employee applies the tread to the casing, he pulls off the paper backing from the tread to reveal an adhesive coating. Notice the buffed casing is already coated in the light-colored solution.
4. A metal band holds the tread in position. The tire has been mounted on a curing rim and is properly inflated.
5. Tires are moved into the "bonding room" and heated to 210-degrees Fahrenheit for 4 to 4 1/2 hours.
6. The newly retreaded tire undergoes a final inspection.

While materials and equipment have continually evolved, the basic concept of Bandag precured retreading is time-tested.

Was this system different from the others dealers were using before?

There were two major differences. Bandag's system uses pre-cure treads that are cured to the casing. The system doesn't require the dealer keep extensive molds on hand for various tread patterns and sizes.

Whether a retread was needed for an over-the-road tractor, a road grader or even a forklift, the Bandag retreader simply cut the pre-cure tread to whatever size was required.

And the other difference?

Since the Bandag process didn't require molds, a metal band was used to apply pressure to the tread and casing during the curing process. Bandag continued to use this method until 1963, when Carver invented the "envelope," replacing the band.

Mounted on a rim and fully inflated, the tire could now be encased in a flexible rubber envelope so uniform pressure can be applied during the curing process.

Another important development occurred that same year. Bandag chemist Edward Brodie invented cushion gum. This un-vulcanized rubber is still used today to cure the tread to the casing.

What was used before the cushion gum?

It was a two-part cement concoction. Workers would paint "solution" onto the tread rubber and tire casing, which would bond hard when heated. Cushion gum saved time and was easier to use. So much so the process eventually could be automated and a machine applied the cushion gum. The retreader finished with a piece of cushion gum at the end of the tread splice.

So 1963 was a pretty good year.

Especially considering Carver almost lost both companies just two years earlier. To keep Bandag moving forward, he drained all the money from his pump company.

The story goes that in 1961 Carver received a call on a Wednesday night from his banker saying he was basically insolvent. There was no cash to cover payroll and no money to pay the bills. Carver was an experienced pilot so he climbed into the cockpit of his plane and started flying. He sold stock to eight tire dealers, raising \$50,000 cash that weekend.

Soon after, his youngest son, Martin – who became Bandag chairman and CEO – remarked, "If the weather had been bad that weekend, Bandag would have been out of business."

Seven years later, in 1968, Bandag stock went public. Before long Bandag became the biggest name in retreading, with dealers in more than 100 countries around the world. **TA**