

# Time to Re-tire?

By Frank Daly

Those of you who read the Yahoo Airflow Message Board, or automatically receive all posts via email, will note that a couple of months back the issue of tires (whitewall vs. blackwall, radials vs. bias ply, tubes vs. tubeless) reared its head, as it periodically does. And whenever five guys discuss what is 'right' as far as tires on old cars go, there are usually at least six different opinions expressed!

Well, just to keep things exciting, I thought that I'd use the power of my editorial quill to keep the waters muddied. I will start by stating outright that I am not an expert on tires. However, due to my err... "incidents" while driving from Seattle to Durango and back, I AM somewhat of an expert on....blowouts. And as a result of losing two tires at 60 mph+ (steel belted radials!) on that journey (one heading out, one heading home) I (a) had the upholstery cleaned and (b) did a LOT of research on tires and old cars.

Regarding the issue of whitewalls vs blackwalls, this is really not an issue. Members have produced factory photos, or factory-era photos, which confirm that both options were chosen at the time. Do what you like! No points are deducted during Airflow Meet judging due to sidewall color.

Bias ply vs. radial tires is a much more heatedly discussed issue. At this point, the approved judging sheets mandate a deduction for radial tires. This is in the interest of authenticity, and the rationale that I hear most often is that "ACA deducts for radials". I am supportive of promoting originality and authenticity, and thus I support the deduction which the judging guidelines currently mandate. I predict, however, that in the not-too-distant future this might change (both at ACA and AACA). That's just one man's prediction.

Putting the issue of judging points aside for a moment, let's see if the facts point us one way or the other as far as appropriate tire selection for our Airflows. First, just for fun, a review of what differentiates the two types of tires.

In radial tires, the sides and the base (part that contacts the road) of the tire body function somewhat independently of each other. The sidewalls flex under load and road conditions, permitting the footprint (base) of the tire to remain in contact with the road. This generally improves traction considerably, but it can make non assisted steering cars difficult to park! This flexing also absorbs road irregularities to some



degree. In bias ply tires, the base and side are a single unit. There is much less flexing of the side/sidewall.

Radial tires were first introduced in the USA by Sears, Roebuck and Co. in 1966 in an effort to goose sagging tire sales. The public instantly embraced the Allstate branded tires, and Sears had difficulty keeping up with demand. In those days, replacement of the bias ply tires which came standard on new cars was often an annual event. Once a car owner replaced his bias ply tires with radials, he rarely went back. Better handling, improved road grip, greater resistance to punctures and a much longer life had him sold.

Automobile manufacturers resisted, primarily due to the higher costs of the radial tires. Total cost to the owner was actually less over time with radials due to far greater longevity, but this was a tough sell in the showroom. Finally Ford saw the writing on the wall and introduced radials as standard on its flagship Mark III in 1970. Cadillac soon followed, and by 1975 – less than 10 years since radials were introduced – 90% of all cars were equipped with radials as standard equipment. The higher cost of the radials was more than offset by superiority in almost every other regard.

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Well, what's an Airflow owner to do? The bottom line in this glorious land of freedom is that it's up to the owner, and it somewhat depends on how you plan to enjoy your Airflow. Do you intend to drive your car (regularly, and with some distance involved) or do you plan to primarily show it?

I believe in driving my cars, and thus I choose to run radials. I have enough miles on most of my cars with bias ply tires before having switched to radials to know that the difference is astounding once you are out on the highway. They have all been completely different cars once the switch was made! Where I live, there are a lot of grooved concrete roads (due to the rain). Driving on bias ply tires involve constantly wrestling with the car to keep it in the lane. The ruts caused by studded tires and large trucks make lane changes almost a competitive sport! A few hours of driving like this can be quite fatiguing - I am willing to sacrifice a slight departure in original appearance in return for far more pleasurable driving. But that's me!

If you plan to primarily show your car, or drive it to the odd cruise in, original looking bias ply tires might be just the ticket for you. And let's face it, if you are a stickler for originality but still want to drive your Airflow as Carl Breer intended, it CAN be done with bias ply tires – you'll just get a bit more exercise doing it!

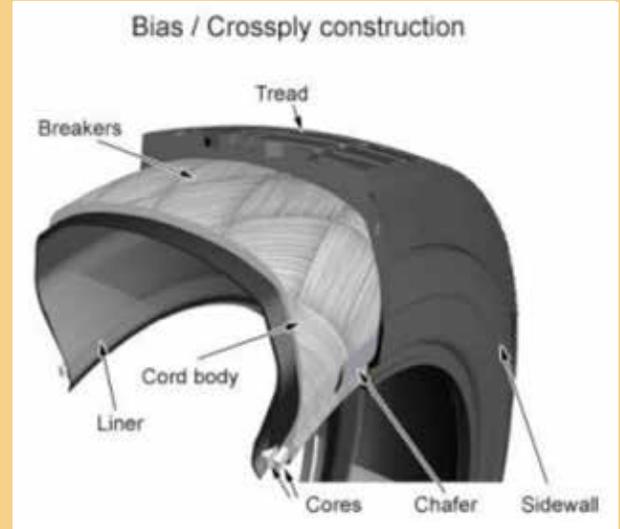
The last topic for discussion generally gets the least amount of 'airtime' on the message boards: tubes or tubeless? This might be the most important part of this little re-tiring article, so read on.

Once again, this is one man's opinion, but AS STRONGLY AS I AM ABLE TO DO SO I suggest that you do NOT run radial tires with tubes. In fact, if you choose to run bias ply tires I just as strongly suggest that you get tubeless tires. This is based on my experience as well as the substantial research to which I referred at the beginning of this article. Space does not permit me to list my references, but if you are interested, Google "blowouts on radials with tubes" or "tubes vs. tubeless" and you'll find a plethora of interesting information – some of it sort of frightening!

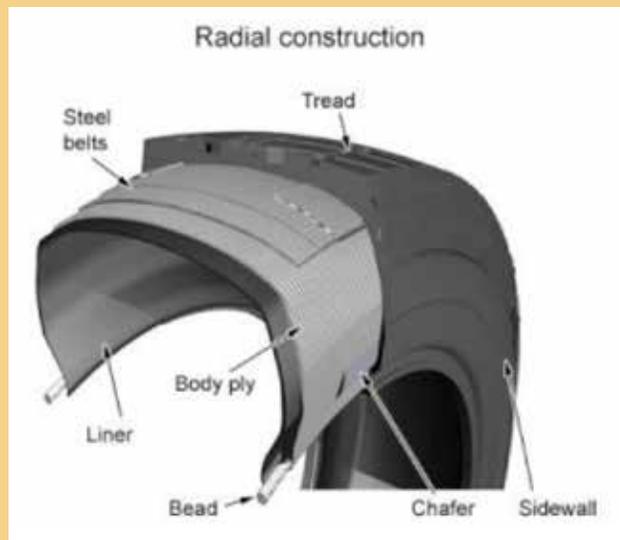
**Tubes** blow out far, far more often than **tires**. "In the day" when someone had a blowout, it was usually the tube. We have all seen pictures of tires falling apart but still getting down the road, usually held together (nominally) by the tube and the remaining carcass of the tire. The TIRE (not tube) part of the tire rarely fails catastrophically. Tubes were used when the technology to build a tire which could hold its shape as a result of inner air pressure was not available. As long as you can seal a tire on the rim, a tire constructed today does NOT benefit from having a tube installed.

ONE of the factors which should discourage you from using tubes in a radial tire is temperature. Radial tires flex in the sidewall. This is by design, and one of the features which makes them advantageous compared to bias ply tires. However, too

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*Bias ply tires are typically constructed with nylon belts on the "bias", approximately 30 to 45 degrees from the centerline of the tread.*



*Radial ply tires are typically constructed with steel belts running perpendicular to the centerline of the tread.*

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much flexing leads to temperature buildup. This is not good when running tubeless radials, but it is absolutely terrible if you have slipped a tube in that tire. In general, you MUST run radials at or close to their sidewall pressure to prevent too much heat buildup, but if you for some reason choose to install tubes, it is CRITICAL. The flexing leads to chafing of the tube which exacerbates the elevation in temperature and KABOOM. I believe that this contributed to my first blowout in my Airflow.

The second blowout was just as exciting, and again it was the tube that went. In this case, “CSI Tire Shop” led to the unanimous conclusion that tube #2 went because of improper tube installation (yes, it was the same location on the car which blew both times). The seemingly knowledgeable shop which installed the tube on the spare in Idaho had left the tube folded over on itself. Again, chafing of the tube against itself abraded a hole in the tube and KABOOM number two. I am sure that the poor Airflow was wondering what kind of dunderhead was responsible for tires on her wheels!

This brings me to another point. Most tire shops do not know how to properly install tubes. They might be familiar with motorcycle tires, but a 7.50 x 16 Airflow tire is a completely different beast. In addition to powdering the tube to prevent sticking, I am told that you have to inflate, deflate, massage and repeat until you are confident that there are no folds in the tube. Not so with motorcycle tires – they’re so much smaller. I asked my local (chain) tire shop how often they put tubes in passenger car tires and his answer was short: “No one has ever asked us before”.

I was interested to learn that there are no domestic (or Canadian) manufacturers of passenger car inner tubes. I called three large “classic” car suppliers, and it took some pressure but they all revealed that their tubes are manufactured in China.

Some general thoughts on things which I picked up while trying to learn about tires on old cars.

There is a school of thought that says that old style wheels couldn’t take the ‘forces’ imparted by the flexing sidewalls of radial tires and led to wheel failure. Not true. To some extent, the flexing might reduce transmission of road irregularities to

the wheel. More importantly, when radials were introduced, they were introduced to replace bias ply tires on the wheels which came with the car. There is no “cut-in date” before which it is not OK to put radials on wheels. If wheels intended for bias ply tires failed when radials were mounted, there would have been an incredible number of wheel failures starting in 1966. It didn’t happen!

The purpose of the “safety bead” on the later Airflows and on later cars in general, is to retain the body of the tire in the event of a blowout. Its operation is unaffected whether there is a tube in the tire or not. Lack of a safety bead is not a reason to use a tube.

Incidentally, while learning about the development and purpose of the safety bead, I found on one site – not Airflow or even Mopar - that Carl Breer was driving one of those “new” Airflows and experienced a blowout on the highway. The experience was sufficiently unnerving (I agree!!) that he got back to the office and challenged his engineers to do something about it. Thus Chrysler had the safety bead as standard equipment some ten years before some of the other manufacturers embraced the feature.

If you puncture a tube with a nail or similar sharp object, that’s usually all she wrote. Blam and you are on the side of the road. A tubeless tire will often run quite a while, as long as you don’t pull the nail out. IN GENERAL, tubeless tire failures are slow-occurring events while tube blowouts are explosive and infinitely more exciting as Jim Boggs, Jon Carson and I know.

The DOT recommends replacing tires every six years, regardless of mileage. I have heard anecdotally that radials are more susceptible to age related failure, but I was not able to find any evidence one way or the other. If someone can enlighten us here, please do.

Incidentally, early in my career I had the opportunity to work on hydrazine propelled devices. Hydrazine is an extremely powerful explosive. Occasionally an engine would blow up – quite a dramatic event. The report to management would say something like “Test cell #3 experienced a RUD today”. RUD stood for Rapid Unplanned Disassembly”. Tube/ tire blowouts certainly qualify as RUDs! Let’s hope that you never experience one!