

## TRUCK TIRE CONSERVATION

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I was interested in tire conservation long before Pearl Harbor. My first experience in real rubber conservation was in the fall of 1927 when a group of us, in an old Ford touring car, left Cambridge, Massachusetts, during the early, dark hours of the morning to go to New Haven for the Harvard-Yale football game. When we had traveled about ten miles, suddenly the right rear side of the car gave out a thundering rattle, as if the whole car were falling to pieces like the famous "one-horse shay". All six of us piled out of the car, in the dark, to see what had happened! To our surprise and consternation, it was not just a tire failure; the whole tire and tube assembly had disappeared. Having no spare assembly, we began a great tire conservation hunt for the missing part. If you have had the experience of a tire running off a vehicle, you can appreciate when I tell you that we hunted until dawn and did not find the tire!

That was my first lesson in the need of tire conservation because, without the tire, we had to abandon the Ford and take a train in order to make the game, as no garages or service stations nearby were open. Second, we all had to make a financial contribution to replace the lost tire and tube. I submit this story as a striking example of what happens when you have a critical shortage of rubber and of the costly economics that follow in its train.

This story can aptly apply to us today, on a national basis, if we are not careful. It is for this reason that our company decided we should do something about it in a tangible way. As a result, we established a Tire Conservation Department, which would furnish a personalized tire maintenance consultant service at a nominal fee to users of rubber who desired such service.

The objectives of this department are four-fold:

1. To conserve rubber in aiding our country's war efforts.
2. To make possible lower operating costs on tire equipment for operators.
3. To help insure continuous operation of our transportation system by making rubber last longer and to avoid costly delays due to tire failures caused by poor preventive tire maintenance.
4. To improve maintenance on vehicle parts other than tires.

We can tell you emphatically that all four of these objectives are being attained! Today, we have all kinds and

types of operators, ranging from large common carriers having 3,500 vehicles to utilities and governmental accounts. Now, you gentlemen will want to know just how we actually execute our Tire Maintenance Consultant Program.

Here is how it operates. Let us say a fleet account, such as a county or state, desires our supervised tire maintenance service. We execute a contract with it, for a year's period, setting out what we will do. We then perform the following:

1. After the contract is signed, we assign a tire maintenance consultant to be in charge of the supervision of the tire maintenance of the account. The consultant immediately starts to analyze all factors that might affect tire life.

2. It has been our experience that the quickest way for a consultant to get a perspective of the factors affecting tire life adversely is to examine the scrap pile. Such things as misalignment, underload, overinflation, bad brakes, overload, heat blowouts, etc., will show up.

3. The next step taken by the consultant is to inspect all garages, docks, or places where the vehicles are used, to see if any hazards which might affect tire life can be eliminated economically.

4. Air pressures are next checked as to volume in relation to the size of tires, frequency of inflation, airing facilities, and accuracy of air gauges.

5. Operating conditions are next checked, such as load, roads, speed, routes, schedules and type of work the vehicles are performing and how frequently.

6. Then mechanical conditions, such as alignment, brakes, wheels, rims, springs, etc., which have a bearing on tire life, are examined.

7. Storage conditions of rubber as to spare parts, infrequently used vehicles, and seasonal use of vehicles are investigated.

8. The functional maintenance procedure being followed, as to repairs, ramps, rotation, flow of tires on vehicle and actual mounting and dismounting of tires, is analyzed.

9. A tire maintenance institute is set up by the consultant to instruct drivers and maintenance personnel and to conduct open forums.

10. Certain posters, wall charts, tire handbooks, and other material are furnished to help the account educate its personnel to do a better tire maintenance job.

11. A system of records on inventory and tire performance is established.

12. A written summary report is furnished, covering all factors set out above and our suggestions and recommendations as to what should be done. On any emergency factors that should be handled immediately, emergency reports are furnished. After the summary report is finished, the con-

sultant periodically checks the account on the most acute factors to be handled to see if they are being corrected. Further reports are furnished as to the progress made.

13. All consultants are equipped with master gauges, wheel-alignment checking equipment, loadometer, rim gauges, tread gauges, and dual-matching measuring sticks so that it is not guess work when they make an analysis of the tire equipment on a fleet of vehicles.

### A TYPICAL EXAMPLE

I know you will think all this is nothing new that we are doing. You are correct; but it has been our experience that unless there is constant checking and supervising of tire maintenance, it is not handled effectively. I could give you numerous factual data to prove this point, but two examples will suffice:

Our own company sells tires on a mileage basis, or so much per bus mile, to bus companies. Under our mileage contract arrangements, we maintain the tire equipment. At first, we trained functional service men in the best routine of tire maintenance procedure, such as the mounting and dismounting of tires, repairing of tubes, casings, etc. A few months after these men were out on the job, tire performance would start to fall off. We would write them asking why, and always they would have a good answer. Still no improvement would show up; so we would have to send somebody out from the factory to check up. We generally found one to three things wrong. Either the service man was not doing what he was supposed to do, or was not doing it often enough, or he had not analyzed the "personality" of the operation so as to perform the tire maintenance necessary to do the job for that particular account. As a consequence, we established what we called "tire mileage engineers," whose job was to supervise our own trained tire functional maintenance men and analyze the "personality" of the operation. As a result of this supervision, we obtained some startling results in the increase in tire life, saving of tubes and flap expense, and elimination of road delays due to tire failures.

The other example is a state, which has bought our consultant service and has had an outstanding record on handling tire maintenance! Here is what we found:

- a. Of 2,612 tires checked on running wheels, 1,421 had low air pressure with a tolerance of eight pounds from the standard pressure recommended by the Tire and Rim Association.
- b. One hundred and eighty-four tires were worn down to the point where recapping is recommended.
- c. Ninety tires were in need of repair.
- d. There were sixty-four mismatched dual assemblies.

- e. Thirty-four tires could not be checked for various reasons, such as valves wrongly bent, wheels wrongly mounted, etc.
- f. Ten tires were found flat.
- g. A large number of 6-inch tires were mounted on 5-inch rims.
- h. Seasonal equipment in many cases was not properly stored.
- i. Far too many valve caps were missing. A few of the garages checked were 100% on valve caps, but the majority were only approximately 50%. Valve caps play a major part in helping to maintain uniform air pressures. They not only seal the valve and keep the air from escaping but help to keep out the mud and other foreign substances that cause leaking valves, of which we found many. This should be given close attention, and if possible all garages should carry a spare supply and see that they are on all valves.
- j. Air gauges seemed to be another problem. While some garages had gauges that check properly and were the right type, many had gauges that were off in readings and not the right type for checking dual equipment. In fact, some mechanics told us that the only way that they could check inside dual tires was to remove the outer dual. It is certain that, if this has to be done, those inside duals are not going to be checked. This, we believe, accounts for some of the great variation in air pressures.

Now here is what our consultant recommended that this State do to correct the above situation :

1. That all garages be given a definite maintenance schedule for lubrication, airing of tires, on-the-wheel inspection of tires for wear—readiness for recapping, need of repairs, wheel alignment, mismatched duals, missing valve caps, etc.
2. That a recommended standard air-pressure chart be posted at all air outlets in each garage.
3. That all garages be supplied, if possible, with the correct types of air gauge, valve cores, and valve caps.
4. That, if possible, one man be appointed to air and check tires at each point.
5. That tires be rotated regularly.
6. That all seasonal equipment be stored properly.
7. That frequently-used equipment be aired periodically and have the proper amount of air when put in use. This also applies to pool cars and equipment.
8. That each garage be equipped with proper tire tools and valve tools.

9. That all vehicles that are used very little have older tires on them and that the newer tires be used on vehicles that are more in use.

10. That proper-sized tires be mounted on proper-sized rims.

11. That each garage, if possible, be supplied two tires of a size that are of same over-all diameter, so that as replacement is needed on one dual tire both can be removed and returned and the matched spare tires applied.

As we see this entire problem of tire conservation, its functions divide themselves into two parts:

1. The establishing and performing of the proper functions and procedures of tire maintenance.

2. Constant checking and vigilance to see that such functional tire maintenance and procedure is being performed properly and adequately.

You can establish the best routine and procedure of tire maintenance possible on paper or in theory; but if it is not actually put in operation and applied practically, it is not effective. It is this weakness that we correct with our tire consultant service. The many operators that have purchased our service are a testimonial to the need of such a service, and what our consultants find in their analysis proves we can help them conserve their rubber.

## YOUR DUTIES AND AUTHORITIES

Otto K. Jensen, State Examiner,  
State Board of Accounts of Indiana

During this year and until the war is won, all of this nation's efforts can have but one paramount purpose. The influence of this war is reflected in our every action and our every thought, and you and every other patriotic citizen should have one chief consideration, how you can best serve to bring this conflict to a victorious conclusion. In whatever I have to say on the general subject of "Your Duties and Authorities," it must be understood that any remarks that do not immediately concern the war effort must be construed as subservient to that end, if there be any conflict of interpretation.

It is my thought that a discussion of your duties must of necessity be a discussion of some of your problems. For with any imposed duties, there are always problems connected. And I might say further that a discussion of your authorities could be nothing further than pointing out and discussing those authorities which are given to you in the acts of the general assembly of our state. We are, of course, not all so fortunate