

Subject : INFLATION PRESSURE Tire Trouble due to Underinflation

1. INTRODUCTION

JATMA (THE JAPAN AUTOMOBILE TIRE MANUFACTURES ASSOCIATION , INC.) had carried out on the road tire examinations (highway and local road) 151 times between January and December , 2000.

- The result of tire examinations is as follows.

	2000			1999		
	Highway	local road	Total	Highway	local road	Total
Number of checking a vehicle	5,786	8,123	13,909	2,612	10,179	12,791
vehicles with poor tire maintenance *	1,204	1,211	2,415	409	1,328	1,737
Defective percent	20.8%	14.9%	17.4%	15.7%	13.0%	13.6%

- The items of poor tire maintenance

	Highway		Local road		Total	
	Number of tires	%	Number of tires	%	Number of tires	%
Underinflation	648	48.1	226	16.4	874	32.1
Insufficient Depth	317	23.5	507	36.8	824	30.3
Irregular wear	199	14.8	416	30.2	615	22.6
Damaged tire	59	4.4	54	3.9	113	4.1
Nail through	42	3.1	31	2.3	73	2.7
Other	82	6.1	142	10.3	224	8.2
Total **	1347	100.0	1376	100.0	2723	100.0

The discrepancy between * and ** is because of that there is two or more tires with poor maintenance on one vehicle.

As the above table shows , the main item for poor tire maintenance is Underinflation. Especially in highway examinations, "Underinflation" has about 50% share of the above items. " Underinflation " may cause tire failure and is a dangerous condition.

That's why, JATMA is advertising the importance of air pressure management.

As you know, the demand of the low aspect ratio tires is increasing all over the world. The flexible point (shoulder - side area) of those tires is narrower than compared with standard tires. Thus, it is very difficult to determine whether tires are properly inflated just by looking at them.

The checks show that there are many tires which do not have the correct air pressure.

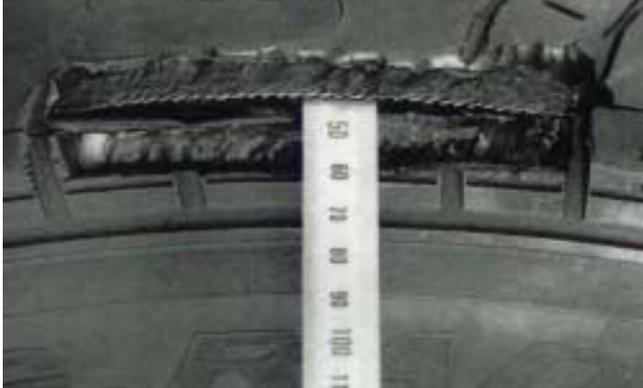
So we would like you to have a new understanding that the most important factor is inflation pressure and that various problems are caused by insufficient or careless pressure maintenance.

Now, we would like to show the dangerous problems caused by underinflation.

TOYO TIRE TALK

2. PHOTO SUMMARY

● TREAD SEPARATION (BELTS SEPARATION)



CAUSE:

- 1 UNDERINFLATION OR OVERLOAD
- 2 SEPARATION DUE TO INJURY

● BUTTRESS CRACK/SPLIT



CAUSE:

- 1 UNDERINFLATION OR OVERLOAD
- 2 EXCESSIVE TORQUE APPLIED TO SHOULDER DURING CORNERING
- 3 RUBBER COMPOUND

● DIAGONAL/TORQUE CRACKING



CAUSE:

- 1 UNDERINFLATION
- 2 RUBBER COMPOUND

● CHAFER SEPARATION



CAUSE:

- 1 UNDERINFLATION OR OVERLOAD
- 2 SEPARATION DUE TO INJURY

TOYO TIRE TALK

● STEEL PLY RUPTURE-UNDERINFLATION (ZIPPER)

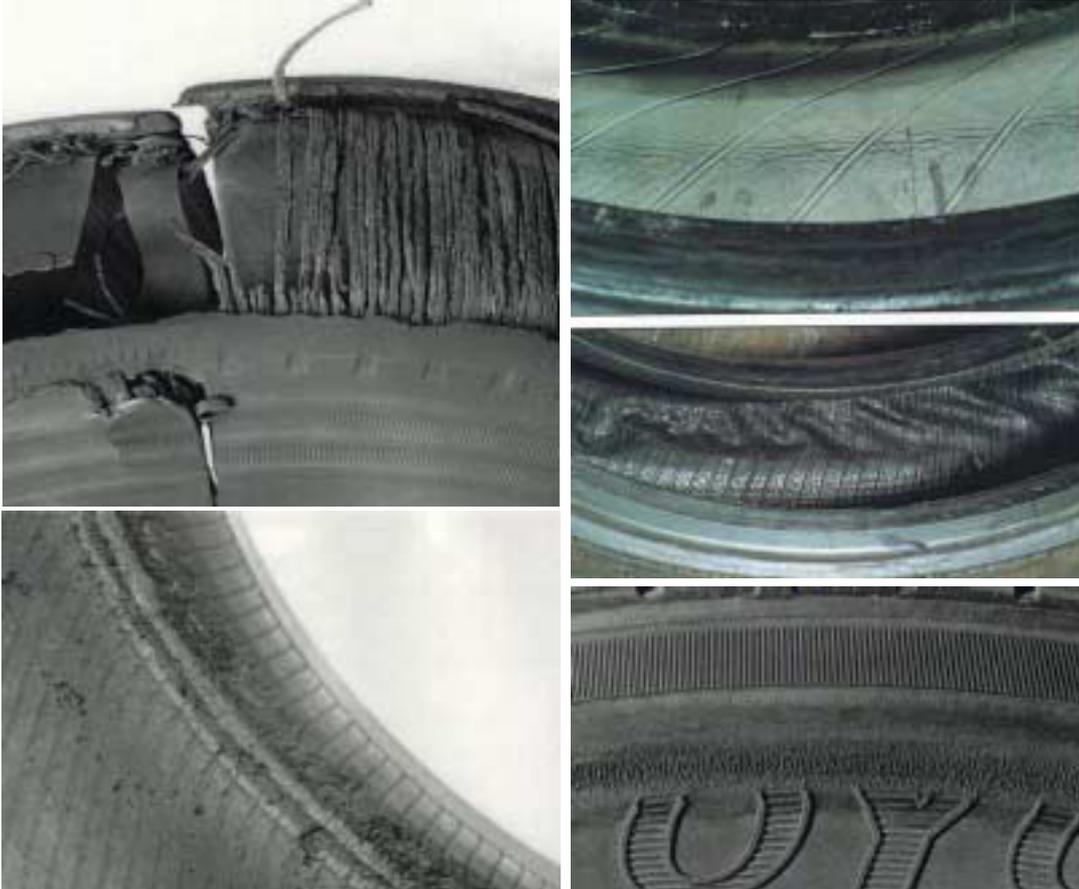


CAUSE:

- 1 TIRE RUN UNDERINFLATED
- 2 CONTINUED TO RUN AFTER AIR LOSS
- 3 OVERLOADING
- 4 MOISTURE PENETRATING STEEL CORD CAUSING RUSTING

When you push the side area of tire, you can hear "click sounds".
The tire is dangerous to inflate!

● RUN FLAT



CAUSE: DEFORMATION OF THE CASING CAUSED BY RUNNING TIRE AT EXTREME LOW INFLATION FOR A LONG DISTANCE

3. CONCLUSION

It is very dangerous for a tire to operate at less than the proper air pressure. This makes it very important to maintain the recommended air pressure and we recommend that the tire pressure be checked at least every week. It is also very important to check air pressure BEFORE the start of a long journey. Of course, the inflation pressure must be checked while tires are still cold.

We will issue the TTT which covers "INFLATION PRESSURE PART-2 (proper air pressure)" in the near future.