BRIDGESTONE/FIRESTONE, INC.

TO Mr. R. O. Martin

FROM B.V. Halverson

DATE March 11, 1999

SECURITY CLASS

SUBJECT "POST PROCESS IMPROVEMENT"ADJUSTED TIRE INSPECTION

Several months ago the New Jersey region reported that they were receiving P235/75R16 Wilderness AT tires that were adjusted for uniformity/vibrations complaints that had Belt Area Seps as evidenced in the shoulder area inside of the tire. There were no external indications of separations. Tires were sent to Akron for inspection.

The Chicago Region advised that they had eight LT 245/75R 16, Dueler HT tires with similar looking conditions as the tires described above. Two of the tires had repairs in them, I had the other six sent to Akron. In addition to the Chicago tires there were other Post Improvement tires that had been sent from the Dallas area several weeks EARLIER ago. The results of the inspections are shown below:

DOT Serial	RTR #	Belt Area	Other comments
7BA3PDB038	CH99 001	BSW- sep under cap strip WSW- sep on top and bottom of wedge	Wedge appears to be reverted Lower sw ozone cracking
7B.....038	CH99 001	BSW Small sep at top and bottom of #2 Stab Ply WSW Small sep at top and bottom of #1 Stab ply Sep between top of wedge and cap strip	Wedge appears to be reverted Lower sw ozone cracking
7B.....038	CH99 001	Sep at edge #2 belt, to edge of #1 belt and under #1 belt. Sep on bottom of wedge	Wedge appears to be revertyed Lower sw ozone cracking
7B.....038	CH99 001	Sep at edge of #2 belt to edge of # 1 belt	Wedge appears to be reverted Lower sw ozone cracking
7B.....147	CH99 002	BSW sep starts at edge of # 1 belt and extends UP toward #2 belt WSW sep at edge of #2 belt and exgendns down to #1 belt under the wedge	Wedge appears to be reverted Lower sw ozone cracking
7B.....147	CH99 002	BSW sep starts at edge of #1 belt and extends UP toward #2 belt WSW sep top and bottom of #2 belt goes down to aedge of #1 belt	Wedge appears to be reverted Lower sw ozone cracking

0500729

BRIDGESTONE/FIRESTONE, INC.

TO Mr. R. O. Martin

FROM B.V. Halverson

DATE April 13, 1999

SECURITY CLASS

SUBJECT ADJUSTED TIRE INSPECTION- "POST PROCESS IMPROVEMENT TIRES"

Recently the New Jersey region reported that they were seeing Wilderness AT tires in P265/75R16, P235/75R15 and P225/75R15 sizes that were adjusted for uniformity/vibration complaints but upon closer inspection they actually had Belt Area Seps. The separations were visible in the shoulder area inside of the tire and several tires had evidence of irregular shoulder wear. 9 tires were sent to Akron for inspection had DOT serials ranging from week 105 to 426.

The analysis from Akron confirmed the presence of the "bubbles" in the shoulder area inside the tire and a separation between the top of the wedge and the bottom of the #2 belt.

The Chicago Region advised that they had eight LT 245/75R 16, Dueler HT tires with similar looking conditions as the tires described above. Two of the tires had repairs in them; I had the other six sent to Akron. The results of the inspections of the Chicago tires are shown on the attached table. Several of these tires had also been removed because of uniformity complaints.

On several of the Dueler, the nylon cap cord appears to be touching the cut edge of the steelcord in the belts.

DQE has several tire sections that have been shown to various groups at ATC.

Greg Rasor has reported that a LT 265/75R16 (C) tire came off the outdoor ATE test with similar separation under the cap strip. A meeting with DQE and ATC was held on April 13, 1999.

Virginia has been asked to review uniformity related adjustments on LTR tires with a cap plies. MKQE will ask Sales Engineering to hold some quantity of LTR tires with cap plies that have been adjusted for uniformity for closer inspection.

B.V. Halverson
MKQE

CC: G. Beckwith, G. Rasor, D. LAUBIE / D. NOLSE, R.L. Mitzner, K. Berger, R. Gilmore, R. Duvall

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LTR Belt Edge Sepa Claim

(Returns by Production '91-'94 vs '95-'96)

Through 8/15/'96

		LT205/75R15		LT215/75R15		LT225/75R15		LT235/75R15		LT245/75R15		LT265/75R15		LT 85's	
Dueler HT	LV														
	Dec				0 7,102	1 955	0 6,128		0 31,523	0 548	1 11,892	0 762	4 30,370	0 1,548	0 6,173
Dueler AT	LV							13 98,731	1 42,517						
	Dec								7 39,030		0 12,251	0 24	29 25,674		
Fhwk RMT	Dec									1 3,205	1 1,338	1 3,841	0 8,407	10 5,272	16 7,682
Fhwk ATX	Jol			3 22,351	0 6,409										
	Dec							25 63,591	10 131,882			2 22,712	3 32,203	4 5,813	1 4,579
Radial ATX	Jol														
	Dec			9 24,105				19 50,207	3 13,135					6 6,801	
Fhwk R4S	Jol	0 16,398	0 4,127	0 1,774	1 1,738			32 41,720	0 113						
	Dec			6 25,260	0 7,430			30 54,954	7 56,690			6 16,061	1 7,679	1 4,632	0 579
Total	LV	0 0	0 0	0 0	0 0	0 0	0 0	13 98,731	1 42,517	0 0	0 0	0 0	0 0	0 0	0 0
	Jol	0 16,398	0 4,127	3 24,125	1 8,147	0 0	0 0	32 41,720	0 113	0 0	0 0	0 0	0 0	0 0	0 0
	Dec	0 0	0 0	15 49,365	0 14,532	1 955	0 6,128	74 168,752	27 272,260	1 3,753	2 25,481	9 43,400	37 104,333	21 24,066	17 19,013

Historically more return, but 27 in 1~1.5 years looks bad.

Recent Problem.
29 in 1-1.5 years with AT is really bad.

Historically more return. (Rather recent problem?)

0500737

LTR Adjustment Analysis
8/96 9/96 Survey

Adjustments By Tire Type

			100	136	139	145	234	235	599	702	750	Grand Total	
			Trd			Belt	SP Edge	SP Edge	Interior	Uniform	No W/M		
	TIRE TYPE		Punct	BLB	TLB	Distort	Sep - Cut	Sep - No Cut	Misc	OOB	found	Grand Total	
	BS D HT	Avg % Wear		40				20				37	Avg % Wear
		# of tires		6				1				7	# of tires
	BS Dueler AT	Avg % Wear		26		20	20	32			23	28	Avg % Wear
		# of tires		12		2	1	28			6	49	# of tires
	Day Stg AT	Avg % Wear		20								20	Avg % Wear
		# of tires		3								3	# of tires
	Dytn Stg Rib	Avg % Wear		30								30	Avg % Wear
		# of tires		2								2	# of tires
	FHWK ATX	Avg % Wear	20	30				46			35	36	Avg % Wear
		# of tires	1	6				7			12	26	# of tires
	FHWK R4S	Avg % Wear		60				60		60	20	40	Avg % Wear
		# of tires		4				1		1	4	10	# of tires
	FHWK RMT	Avg % Wear						34			47	38	Avg % Wear
		# of tires						7			3	10	# of tires
	RADIAL ATX	Avg % Wear						40	60			50	Avg % Wear
		# of tires						1	1			2	# of tires
	STLX R4S	Avg % Wear						40				40	Avg % Wear
		# of tires						1				1	# of tires
	TRANS TRAC	Avg % Wear	60	48				40			20	45	Avg % Wear
		# of tires	1	6				1			1	8	# of tires
	Triph Terr AT	Avg % Wear			20							20	Avg % Wear
		# of tires			1							1	# of tires
	WDTK BJ AT	Avg % Wear		40				30				33	Avg % Wear
		# of tires		1				2				3	# of tires
	Total Average of % Worn		40	34	20	20	20	35	60	60	31	34	
	Total Count of Tire #		2	39	1	2	1	49	1	1	26	122	

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CONFIDENTIAL

Done for Duran/RASM for Sower Tests

81.7

LTR TIRES PRODUCED AND ADJUSTED 1/97 THROUGH 11/99
BELT SEPARATION RETURNS

GROUP	ARTICLE	NAME	SIZE	PLY	RETURNS	PROD	TOTAL	TRD LEAVING CASING	BLT LEAVING BLT	BRK LEAV CASING	CAS LEAV CAS	TRD LEAV BELT	BELT DIST	BES
01	286699	DUELER A/T	32X11.50R15LT	6	1	14	7.1429		7.1429					
01	291692	R273 SWP	LT245/75R16	10	203	38195	0.5315	0.0026	0.2121	0.0026	0.0026	0.0052	0.0105	0.2959
01	291730	R273 SWP	9.50R16.5LT	10	19	3904	0.4867		0.1793			0.0512		0.2561
01	289620	DUELER H/T	LT265/75R16	6	355	93238	0.3807	0.0021	0.0493	0.0011		0.0054	0.0011	0.3218
01	238066	DAYRSTAGHWY	LT235/85R16	10	65	23658	0.2747	0.0042	0.1353				0.0169	0.1184
01	286648	DUELER A/T	LT265/75R16	6	139	58301	0.2384	0.0069	0.0652	0.0017	0.0017	0.0017	0.0172	0.1441
01	282936	FIREHWK ATX	33X12.50R15LT	6	3	1402	0.2140							0.2140
01	280860	STLTEXRDR4S	LT225/75R16	6	3	1412	0.2125		0.0708					0.1416
01	278947	DAY R STGXT	30X9.50R15LT	6	18	8970	0.2007		0.1115					0.0892
01	282995	FIREHWK ATX	LT255/85R16	8	3	1586	0.1892					0.0631	0.1261	
01	272116	DAYRSTAGHWY	9.50R16.5LT	8	4	2241	0.1785		0.0446					0.1339
01	222224	RADIAL ATX	30X9.50R15LT	6	2	1271	0.1574							0.1574
01	294128	DAY STAG LT	30X9.50R15LT	6	24	15873	0.1512	0.0063	0.0441					0.1008
01	281638	DAY STAG AT	30X9.50R15LT	6	37	25155	0.1471	0.0080	0.0596			0.0159		0.0636
01	291277	R273 SWP	LT235/85R16	8	3	2223	0.1350		0.0900					0.0450
01	290750	DUELER A/T	LT245/75R16	6	45	33480	0.1344		0.0239			0.0030	0.0269	0.0806
01	238058	DAYRSTAGHWY	LT215/85R16	8	21	15997	0.1313	0.0063	0.0938					0.0313
01	279439	DAY R STGXT	LT265/75R16	6	25	19774	0.1264	0.0152	0.0657				0.0051	0.0405
01	292338	M773 SWP	LT245/75R16	10	71	59984	0.1184	0.0050	0.0150		0.0017	0.0067	0.0083	0.0817
01	293776	R273 SWP	LT235/75R15	6	14	12706	0.1102		0.0236					0.0866
01	291285	R273 SWP	LT235/85R16	10	77	71758	0.1073	0.0084	0.0404			0.0028	0.0028	0.0530
01	282952	FIREHWK ATX	33X12.50R16.5LT	8	3	2926	0.1025	0.0342				0.0342		0.0342
01	290629	DUELER H/T	LT245/75R16	6	66	66049	0.0999		0.0091			0.0030		0.0878
01	282944	FIREHWK ATX	31X10.50R16.5LT	8	2	2039	0.0981		0.0490					0.0490
01	291749	R273 SWP	LT215/85R16	10	44	48597	0.0905		0.0370			0.0021	0.0021	0.0494
01	238031	DAYRSTAGHWY	7.50R16LT	8	4	4423	0.0904	0.0226	0.0678					
01	291706	R273 SWP	LT225/75R16	8	20	24601	0.0813	0.0041	0.0285			0.0041	0.0041	0.0406
01	278491	DAY R STGXT	LT235/85R16	10	33	42753	0.0772	0.0070	0.0398					0.0304
01	285048	DAY STAG AT	LT265/75R16	6	34	44277	0.0768	0.0023	0.0339					0.0407
01	281654	DAY STAG AT	32X11.50R15LT	6	8	10805	0.0740		0.0185					0.0555
01	279404	DAY R STGXT	LT215/85R16	8	6	8180	0.0733	0.0122	0.0367					0.0244
01	286508	STLTEX A/T	9.50R16.5LT	10	6	8216	0.0730		0.0122					0.0609
01	294322	DA STAG A/S	LT235/85R16	10	20	28981	0.0690	0.0035	0.0104			0.0035	0.0035	0.0483
01	253472	RADIAL ATX	LT215/75R15	6	1	1461	0.0684		0.0684					
01	272108	DAYRSTAGHWY	8.75R16.5LT	8	1	1495	0.0669	0.0669						