Informal document No. **WP.29-147-18**
(147th WP.29, 10 - 13 March 2009,
agenda item 16.9.)

Light Truck Tyres
(C Tyre types and LT Tyre types)
Roadmap for Harmonization

March 2009

Difference from Passenger Tyres

- In developing the gtr for Passenger Car tyres, the principle effort was to harmonize test conditions.
- Passenger Car tyres are typically categorized as either standard load or extra load tyres.
- Differences in load capacity, as defined by Load Index value, are readily accommodated.

- C & LT type tyres are much different….

Differences (cont)

There is no existing consistent way to simultaneously categorize LT type and C type tyres:

- Not by Load Range
- Not by Ply Rating
- Not even by Load Index

without specifying the reference inflation pressure.

(ref. “Complexity of including Light Truck and C tyres in the GTR for Tyres” (TYREgtr-06-01), presented in Sep 08 to GRRF)

How to characterize a light truck tyre?

- Three parameters are necessary to characterize any given C or LT tyre size:
  - Load Capacity
  - Speed Rating
  - Reference Inflation Pressure

- Internationally accepted methodologies address load capacity & speed rating via the service description:
  - Load Index & Speed Symbol

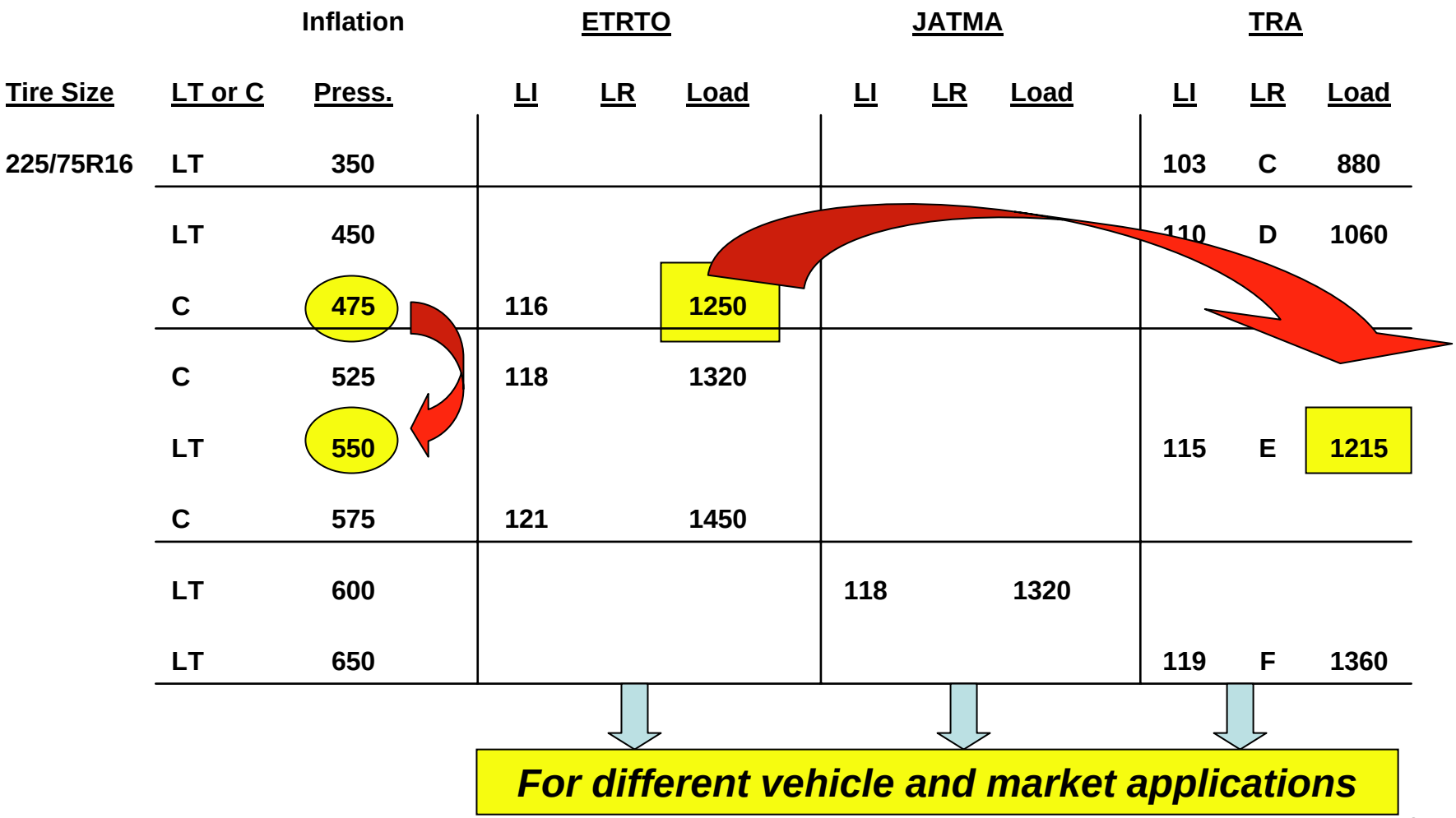
- How to address reference inflation pressure???

Reference Inflation Pressure (cont)

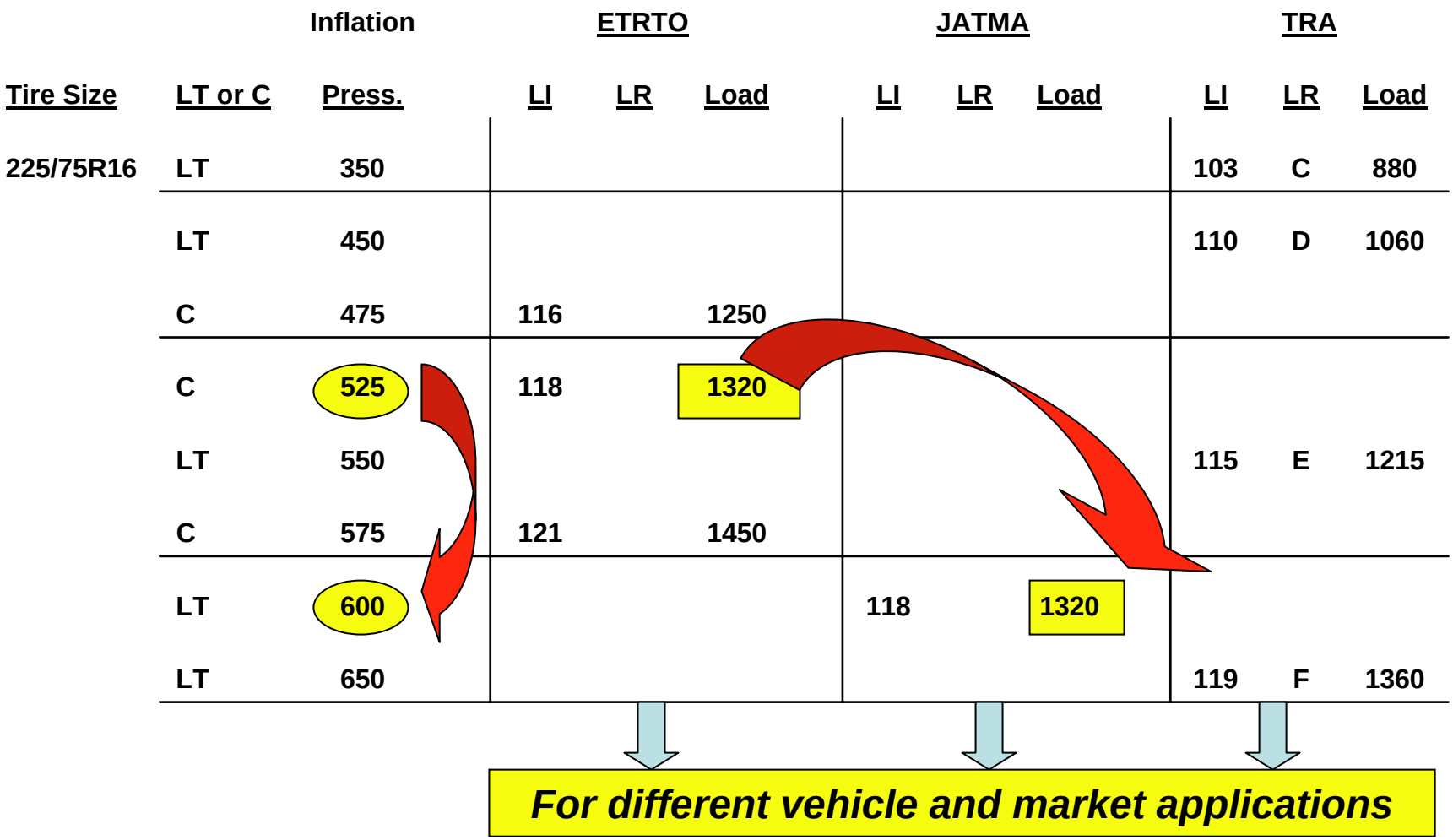
		Inflation	ETRTO			JATMA			TRA		
Tire Size	LT or C	Press.	LI	LR	Load	LI	LR	Load	LI	LR	Load
225/75R16	LT	350							103	C	880
	LT	450							110	D	1060
	C	475	116		1250						
	C	525	118		1320						
	LT	550							115	E	1215
	C	575	121		1450						
	LT	600				118		1320			
	LT	650							119	F	1360

For different vehicle and market applications

Reference Inflation Pressure (cont)



Reference Inflation Pressure (cont)



Reference Inflation Pressure (cont)

- Rationale:
  - The Reference Inflation pressure could be used to characterize tyres for test purposes.
  - Similar to passenger car tyre situation:
    - Light Load & Standard load tyres are tested to one protocol
    - Reinforced (extra load) tyres are tested to a different protocol
  - The reference inflation pressure therefore categorizes tyres for regulatory test purposes

Reference Inflation Pressure (cont)

- Long Term Solution (2° step)
  - Harmonize on discreet inflation pressure increments for LT & C type tyres
  - Possible scenario: 350, 450, 550 kPa
  - Industry load formulae will determine the load for each inflation pressure -> harmonization objective and load capacity shown as Load Index value

Reference Inflation Pressure (cont)

Immediate Solution for GTR

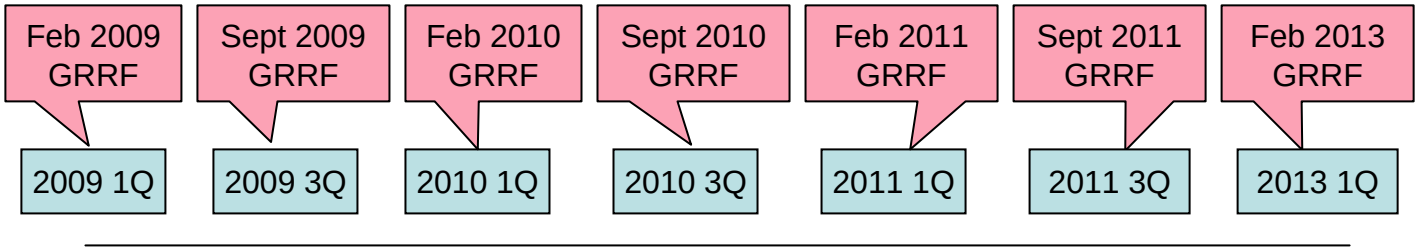
Actual Tyre Reference Pressure (kPa)	"Assumed" Reference Pressure (kPa)
300 - 399	350
400 - 499	450
500 - 599	550
600 - 699	650

Test Harmonization Efforts

		Specified inflation pressure for harmonized regulatory tests			
Actual Tyre Ref. Pres (kPa)	"Assumed" Reference Pressure (kPa)	Endurance	High Speed	Other test 'a'	Other test 'b'
300 - 399	350	TBD	TBD	TBD	TBD
400 - 499	450	"	"	"	"
500 - 599	550	"	"	"	"
600 - 699	650	"	"	"	"

Harmonized regulatory test loads as % of Load Index value.

Road Map for LT and C Tyres



Step 1:

LT and C Modules (ongoing)

Step 2:

Inflation Pressure (9 months)

Step 3:

Load (12 months)

Step 4:

Testing (36 months)

Submit Final Proposal