Aircraft Tire Condition Information

Background

Pilots are required to conduct Exterior Preflight Inspections in accordance with procedures described in the Aircraft Operation Manual, Volume 1, Amplified Procedures. Although Delta has traditionally replaced tires for economic reasons (i.e., to allow the tire to be recapped), once any amount of tire cord is visible, it is permissible for reinforcing ply tire cord to be exposed as long as the tire has been deferred in accordance with procedures listed in TOPP 40-40-05 "Maintenance Carry-Over Items." Section X of 40-40-05 describes "Special MCO Procedures" and includes information specific to worn tires. The terms "monitored," "re-inspected" and "evaluated" are used when describing the procedure.

Purpose

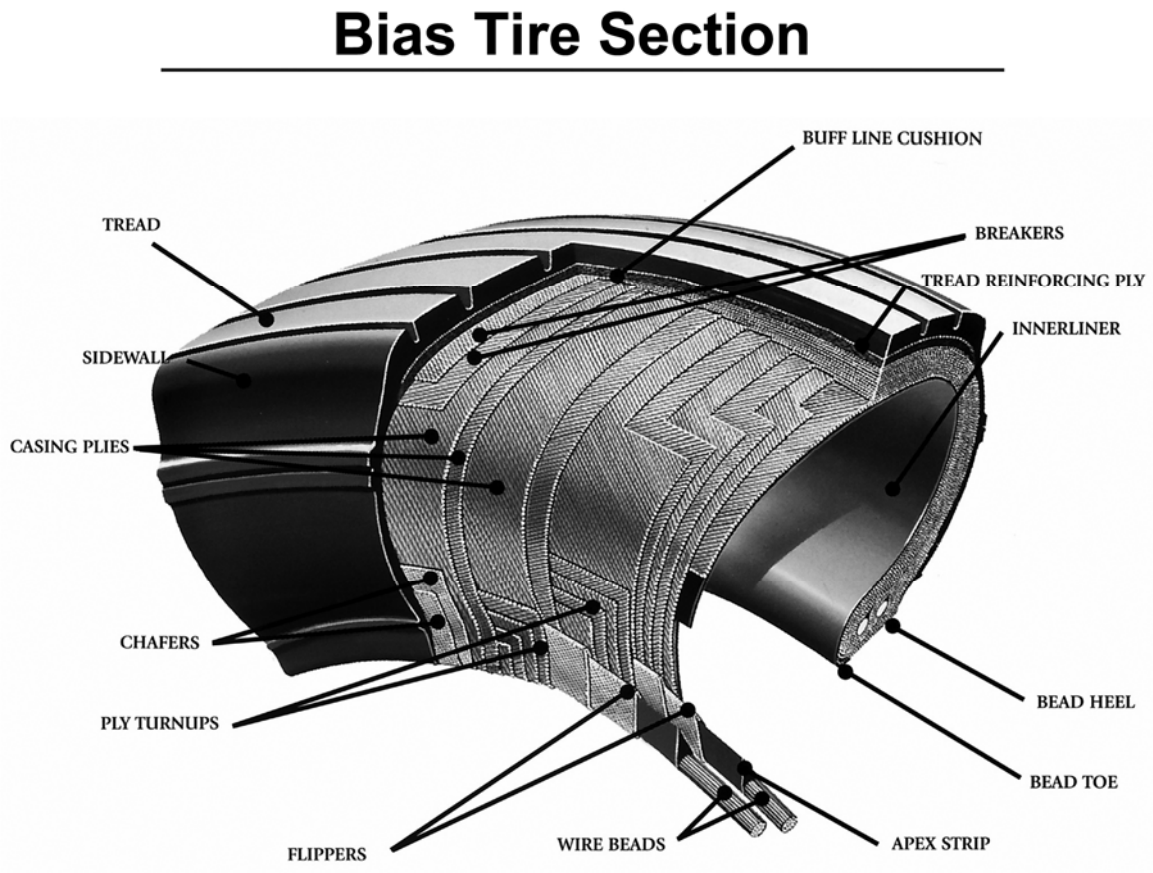
This document provides additional information beneficial to the pilot in determining the wear condition of an aircraft tire.

Tire Deferral Considerations

1. Tire abnormalities listed in the expanded checklist shall be reported to the MCC.
2. The pilot will describe the condition of the tire to the Maintenance Coordinator who will determine if the condition can be deferred.
3. If the tire is deferred, the Coordinator will provide a control number and a specific description of the wear to be entered into the aircraft logbook.
4. A tire may be approved for up to ten (10) additional landings provided tire wear is monitored after each landing.
5. When monitoring a deferred tire with reinforcing ply tire cord exposed, only one layer may be worn completely through. If you have a question about determining the number of layers of cord worn through, contact the MCC.
6. Any additional abnormalities must be reported to the MCC.
7. As stated in 40-40-05, the Captain always retains the prerogative of having the tire changed anytime prior to the ten additional landings.

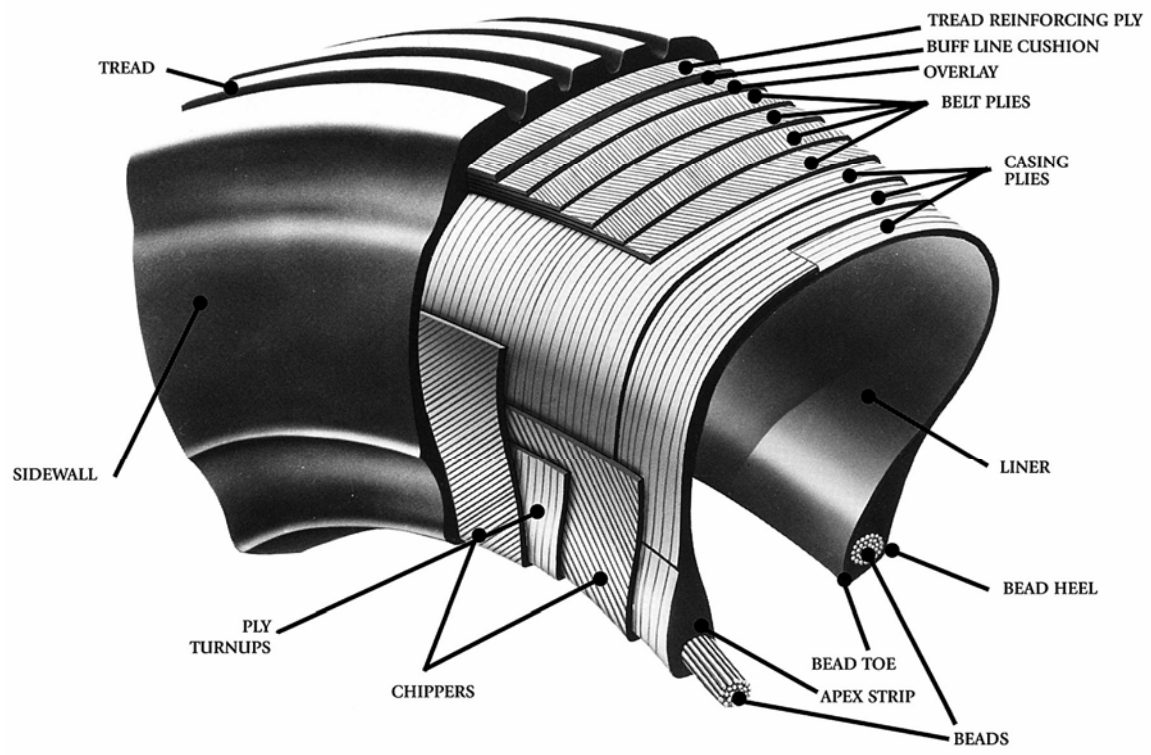
Tire Construction Graphics

The graphics below depict the basic construction of a radial tire and a bias-ply tire.



Note: The “Tread Reinforcing Ply” depicted in this graphic is the portion of a worn bias tire that may be exposed on deferral.

Radial Tire Section



Note: The “Tread Reinforcing Ply” depicted in this graphic is the portion of a worn radial tire that may be exposed on deferral.

Tire Construction Terminology

Belt Plies: This is a composite structure which stiffens the tread area for increased landings.

Buff Line Cushion: The buff line cushion is made of rubber compounded to enhance the adhesion between the tread reinforcing ply and the overlay. This rubber is of sufficient thickness to allow for the removal of the old tread when the tire is retreaded.

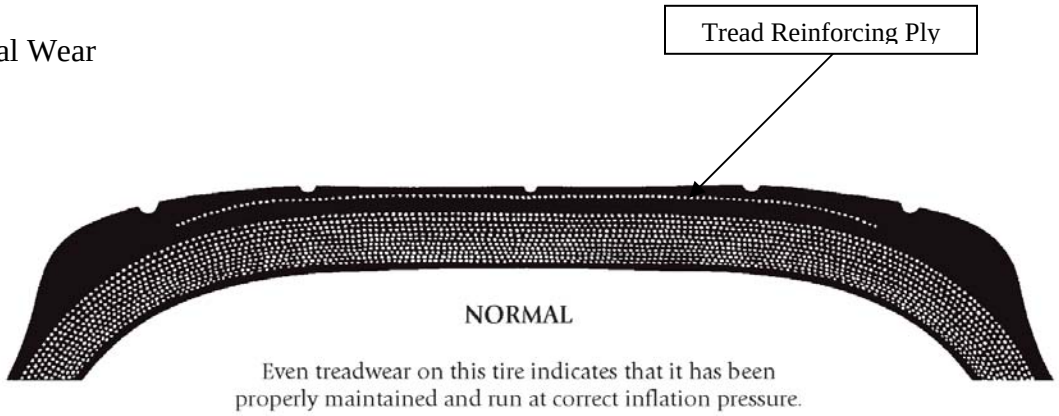
Casing Plies: Layers of rubber coated fabric which run radially from bead to bead. The casing plies provide the strength of the tire.

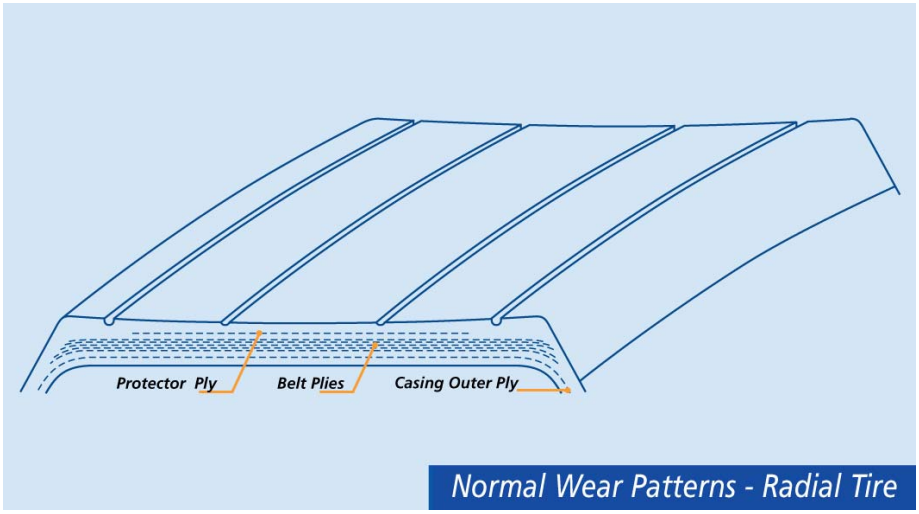
Overlay: A layer of reinforcing rubber coated fabric placed on top of the belts to aid in high speed operation.

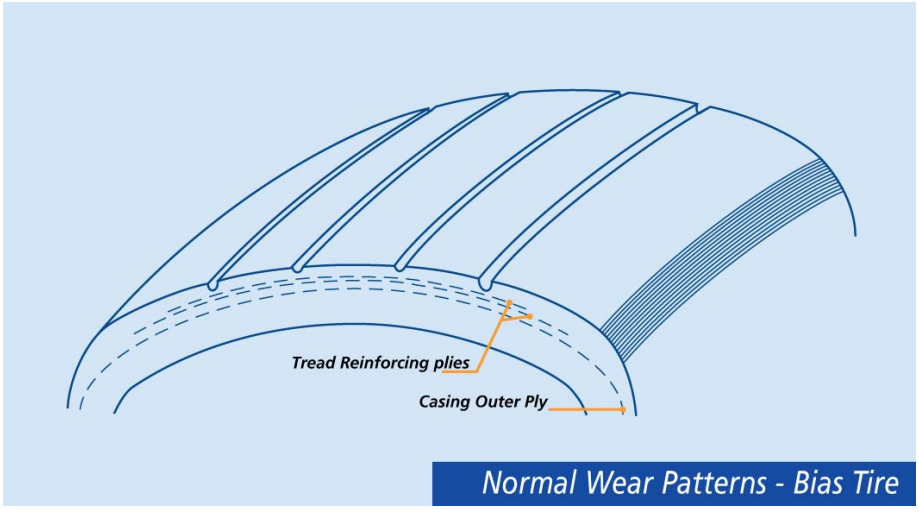
Tread Reinforcing Plies: Tread reinforcement is one or more layers of rubber coated fabric that strengthen and stabilize the tread area for high-speed operation. This also serves as a reference for the buffing process in retreadable tires. This is sometimes referred to as a “Protector Ply”

Wear Indications

Normal Wear



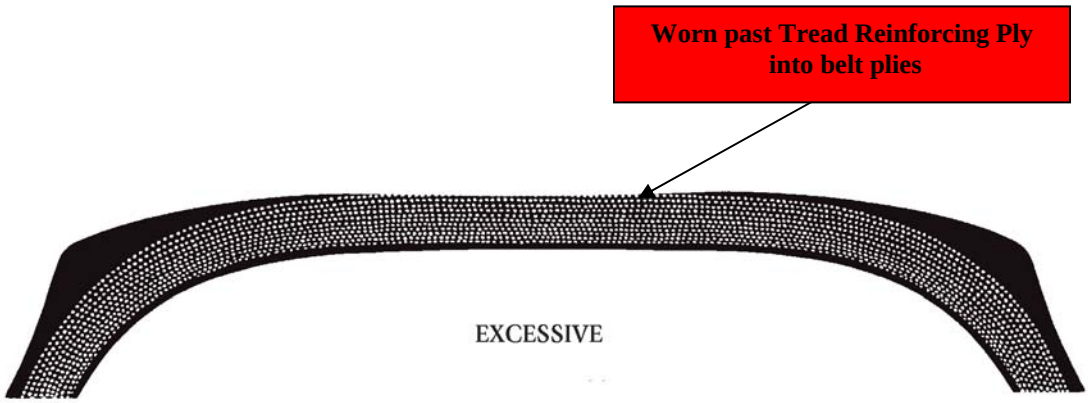


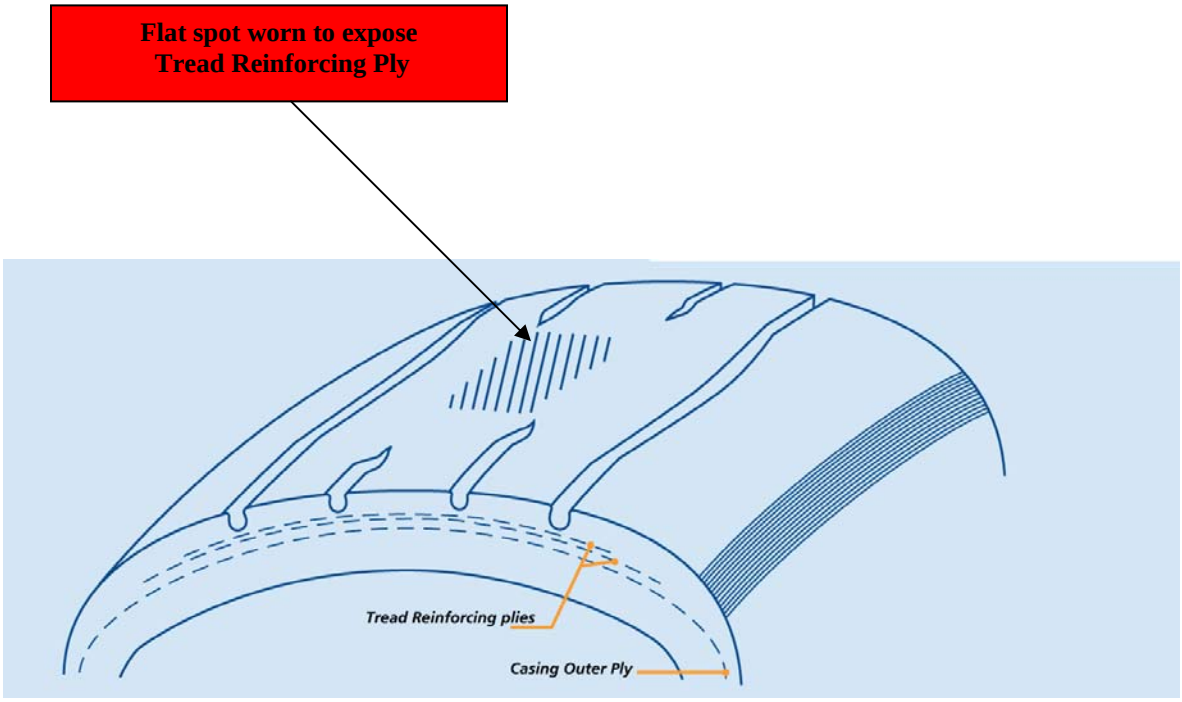


Wear Indications *(continued)*

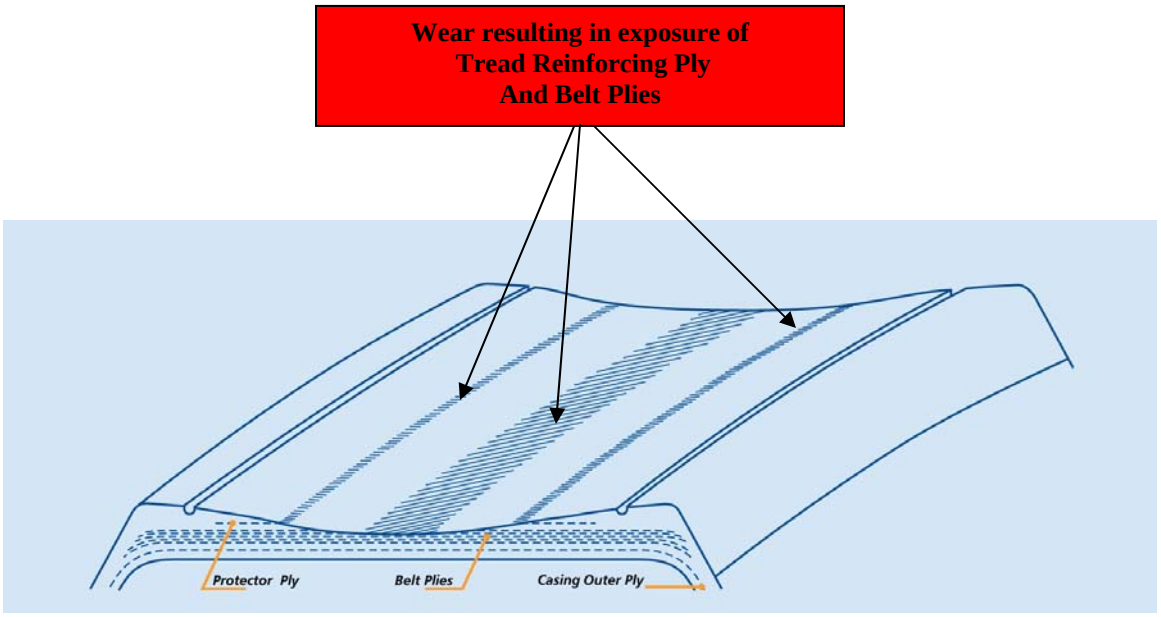
AOM Volume 1 – Exterior Inspection contains a note stating to notify maintenance if:

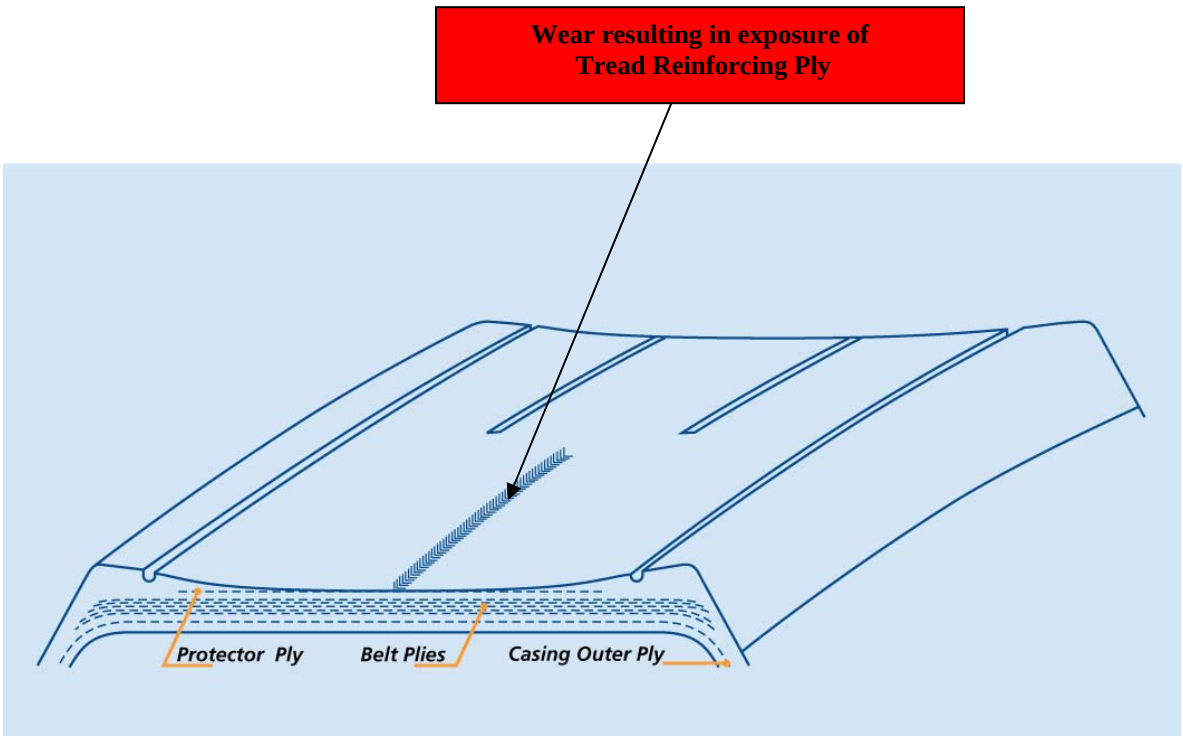
- Any tread groove worn completely around a tire
- Any layer of cord showing
- Any questionable cut
- Any appearance of improper inflation





Wear Indications *(continued)*





Wear Indications *(continued)*

Wear pattern referred to as Chevron Cutting

Cuts in tire sidewall

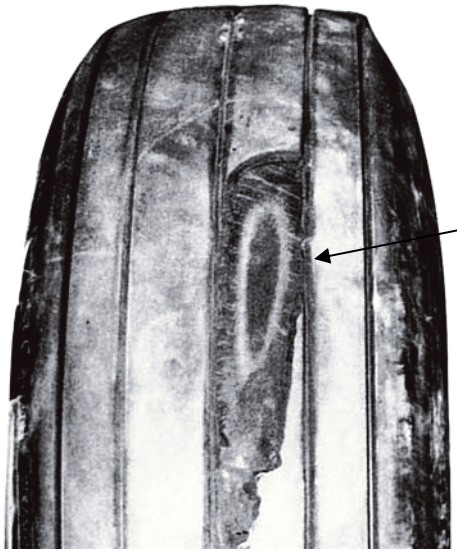
Cuts in tire tread

Wear Indications *(continued)*

Sidewall seperation

Tread seperation

Wear Indications *(continued)*



Peeled rib section of tread.

Note exposure of reinforcing tread plies.

Evidence of a skid.

Note exposure of reinforcing tread plies and belt/casing plies.