



Aircraft Tire Care & Maintenance



GOODYEAR

Introduction



The information in this manual is designed to help aircraft owners and maintenance personnel obtain optimum service from their bias and radial aircraft tires. The discussions contained in this part are designed not only to teach how to properly operate and maintain aircraft tires, but also to demonstrate why these techniques and procedures are necessary.

Aircraft operating conditions require a wide variety of tire sizes and constructions. The modern aircraft tire is a highly-engineered composite structure designed to carry heavy loads at high speeds in the smallest and lightest configuration practical. Tires are a multi-component item consisting of three major materials: steel, rubber and fabric. There are different types of fabric and rubber compounds in a tire construction, each with its own special properties designed to successfully complete the task assigned.

Goodyear aircraft tire technology utilizes Computer Aided Design and Analysis, as well as the science of compounds and materials applications. Materials and finished tires are subjected to a variety of laboratory, dynamometer, and field evaluations to confirm performance objectives and obtain certification.

The manufacturing process requires the precision assembly of tight-tolerance components and a curing process under carefully controlled time, temperature and pressure conditions. Quality assurance procedures help to ensure that individual components and finished tires meet specifications. The Goodyear Innovation Center and all Goodyear Aviation Tire new and retread tire plants are ISO 9001:2000 certified.

NOTE: The procedures and standards included in this manual are intended to supplement the specific instructions issued by aircraft and wheel/rim manufacturers.

Notice: This Aircraft Tire Care and Maintenance Manual effective 03/2017 combines information from previous Goodyear Aircraft Tire Care and Maintenance manuals and supersedes all previous manuals.

5. Inspecting Mounted Tires

Systematic inspection of mounted tires is strongly recommended for safety and tire economy. The frequency of the inspection should be determined by the use and normal tire wear of the particular aircraft involved. With some aircraft, tire inspection after every landing or at every turnaround is required. With all aircraft, a thorough inspection is advisable after a hard landing.

Treadwear

Inspect treads visually and check remaining tread. Tires should be removed when tread has worn to the base of any groove at any spot, or up to 1/8 of the tire circumference.

Return to Base Limits

In order to return to a maintenance base, Goodyear tires can remain in service with top ply cord visible, but only as long as the cord is not worn through or exposed for more than 1/8 of the circumference of the tire or not more than 1 inch wide at the fastest wearing location. Tires within these limits can continue in service no longer than necessary to return to a maintenance base and be replaced. (This applies to the proper tires for the aircraft as specified in its aircraft manual.) For all other circumstances, normal removal criteria are still recommended as per the rest of this manual. This does not apply to military tires with Maximum Wear Limits marked on the sidewall.

NOTE: Further use of tires beyond return to base limits may render a tire unsafe or unretreadable.

Uneven Wear

If tread wear is excessive on one side, the tire can be demounted and turned around, provided there is no exposed fabric. Gear misalignment causing this condition should be corrected.

Tread Cuts

Inspect tread for cuts and other foreign object damage and mark with crayon or chalk. Follow the removal criteria below:

1. Follow specific cut removal criteria from the aircraft manual, or tire cut limits on the tire sidewall when available.
2. When specific cut removal criteria are not available use the following Goodyear removal criteria: any cut into the casing plies on bias tires, any cut into the belt package on radial tires, any cut which extends across one or more rubber tread ribs to the fabric, rib undercutting at the base of any cut.



WARNING

DO NOT PROBE CRACKS, CUTS, OR EMBEDDED FOREIGN OBJECTS WHILE TIRE IS INFLATED. THIS COULD CAUSE THE OBJECT TO BECOME A PROJECTILE OR THE TIRE TO EXPLODE, WHICH CAN RESULT IN DAMAGE, SERIOUS INJURY, OR DEATH.

Sidewall Damage

Remove tire from service if weatherchecking, cracking, cuts and snags extend down to the casing ply in the sidewall and bead areas.

Bulges

Bulges in any part of tire tread, sidewall or bead area may indicate a separation or damaged tire. Mark with crayon and remove from service immediately.