T/19

TIRE BURSTS IN FLIGHT - INFLATION MEDIA

1. **Applicability**

This Airworthiness Notice is applicable to all Myanmar Registered Aeroplanes Over 5700 kg MTWA.

2. **Introduction**

2.1 The majority of in-flight tire bursts have been attributed to the tire carcass being weakened by foreign object damage, scuffing, etc., such that a rapid release of pressure takes place. Such failures are usually experienced when the gear has been retracted for some time and the effects of brake heat transfer, internal tire temperature and differential pressure are combined.

2.2 A fatal accident involving cabin decompression and fire has highlighted another mode of tire failure in flight where a tire may fail explosively without any significant prior degradation. A tire inflated with air and subjected to excessive heating, possibly caused by a dragging brake, can experience a chemical reaction resulting in release of volatile gases. Such a chemical reaction in the presence of the oxygen in the contained air may result in a tire explosion in a landing gear bay and/or an in-flight fire since it appears that the protection normally afforded by conventional pressure relief devices in the wheel would be incapable of responding adequately to the rapid increases in temperature and gas pressure associated with auto-ignition.

2.3 Laboratory material and tire burst testing indicates that the risk of auto-ignition can be reduced by using an inert gas for tire inflation and servicing.

2.4 Other potential benefits may accrue from the use of nitrogen as it will tend to reduce wheel corrosion, tire fatigue and the risk of fire when fusible plugs melt due to brake overheating.

3. **Compliance**

3.1 With immediate effect all braked wheels of retractable landing gear units on aeroplanes defined in paragraph 1 will be required to have tires inflated with nitrogen, or other suitable inert gas, and maintained such as to limit the oxygen content of the compressed gases to not greater than 5% by volume.

3.2To ensure compliance with this requirement suitable inflation and servicing procedures must be adopted in consultation with the airframe constructor. At airfields where suitable inert gases are not normally available it is acceptable to use air for inflation or

servicing provided that a suitable entry is made in the technical log and that the tire is reinflated or serviced in accordance with the agreed procedure at the earliest opportunity or within 25 flight hours, whichever is the sooner.

4. **Additional Information**

In addition to compliance with the requirement of paragraph 3 above, tire and wheel assemblies should be maintained such that greases, solvents, powders and rubber dust are excluded as far as practicable from within the inflation volume.