

॥ नमस्ते ॥

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# AIRCRAFT PRESSURIZATION SYSTEM

The image shows the interior of an aircraft cabin, bathed in a deep blue light. The perspective is from the aisle looking towards the front of the plane. On the left, rows of dark blue seats are visible. In the center, there is a white door with a small window. To the right, a white service cart is positioned. The overhead luggage bins are visible above the seats. The overall atmosphere is futuristic and clean.

# **WHY** cabin Pressurization?

- 1. Assists in making flight possible in the hostile environment of the upper atmosphere (Low Pressure).**
- 2. To ensure adequate passenger comfort and safety.**
- 3. To ensure that passengers and crew have enough oxygen present at sufficient pressure to facilitate full blood saturation.**
- 4. To prevent rapid changes of cabin pressure**
- 5. Circulate air from inside the cabin to the outside at a rate that quickly eliminates odors.**
- 6. Cabin air must also be heated or cooled**

# Human Comfort Conditions

- **Relative humidity : 40% to 60%.**
- **Pressure-: 10.92Psi to 14.70 Psi**

**OR**

**1 Atm to 0.74 Atm**

**OR**

**101.3 Kpa to 75.3 Kpa**

- **Altitude: 0 to 8000 feets**

**OR**

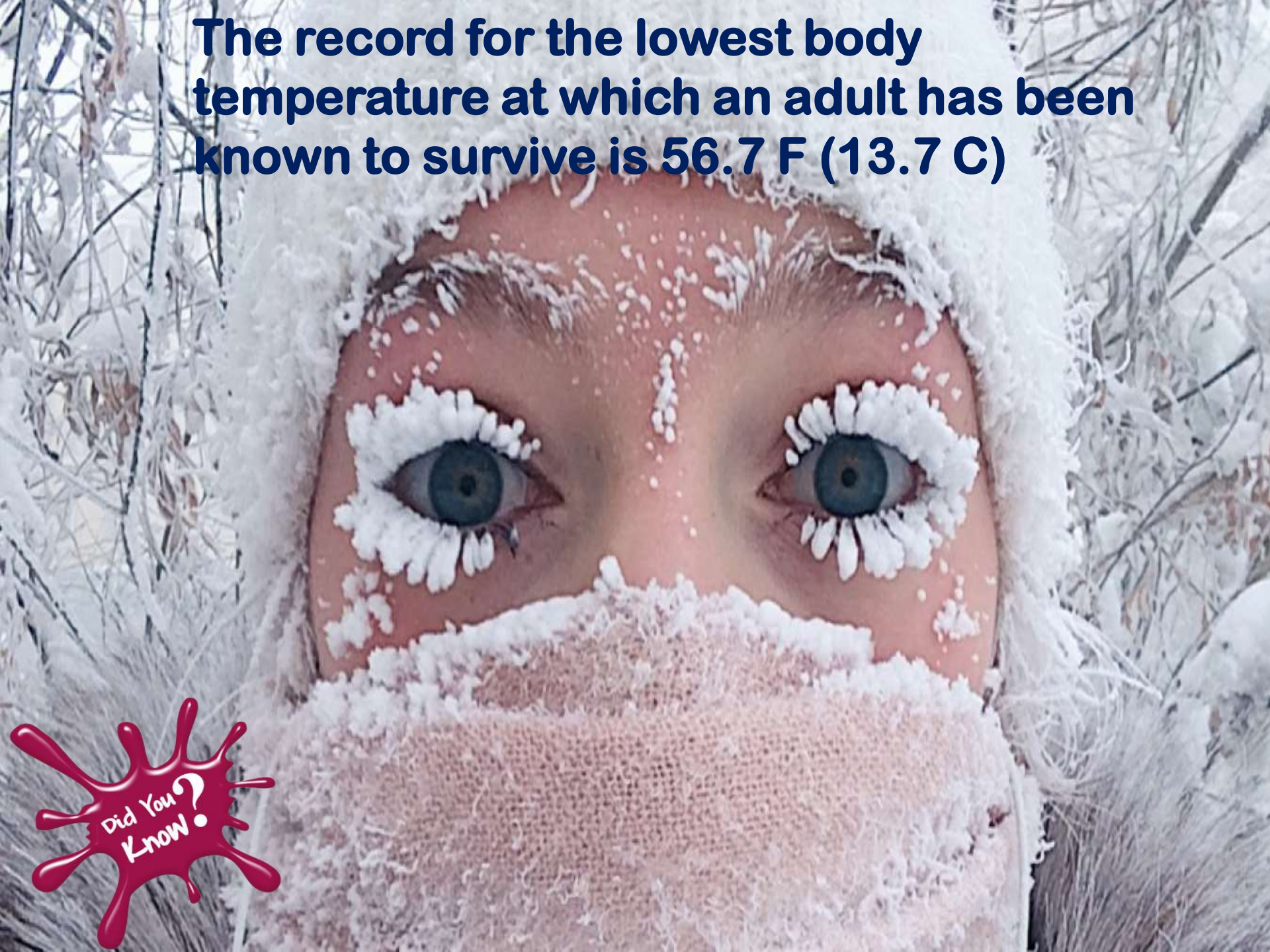
**0 m to 2438 m**

- **Temperature: 22 °C to 27 °C**

**(first cool the air to 14 °C (this removes some of the water from the air), and then heat the air to 24 °C)**



**The record for the lowest body temperature at which an adult has been known to survive is 56.7 F (13.7 C)**



**Did You  
Know?**



**The record for the Highest body temperature at which an adult has been known to survive is 46.5 C(115.7 F)**



# Aircraft Structures Requirement

- **To pressurize, a portion of the aircraft designed to contain air at a pressure higher than outside atmospheric pressure must be sealed.**
- **Compressible seals around doors combine with various other seals, grommets, and sealants to essentially establish an air tight pressure vessel.**
- **Control is maintained by adjusting the rate at which the air is allowed to flow out of the aircraft.**

# PRESSURIZATION TERMS

- 1. Cabin altitude - given the air pressure inside the cabin, the altitude on a standard day that has the same pressure as that in the cabin. Rather than saying the pressure inside the cabin is 10.92 psi, it can be said that the cabin altitude is 8 000 feet (MSL).**
- 2. Cabin differential pressure - the difference between the air pressure inside the cabin and the air pressure outside the cabin. Cabin pressure (psi) - ambient pressure (psi) = cabin differential pressure (psid or ? psi).**
- 3. Cabin rate of climb - the rate of change of air pressure inside the cabin, expressed in feet per minute (fpm) of cabin altitude change.**



Today's Amazing Fact???????

**All worker bees are female &  
Most of the Bees are Female.**

Did You  
Know?







**Any Questions**

# धन्यवाद

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