



Technologies and Properties of Aerospace Materials



The Importance of Materials in Aerospace:



1988, Aloha Airlines plane 243

WHAT TYPES OF MATERIALS ARE USED IN AEROSPACE?

Aluminum, titanium, composites (carbon fiber and fiberglass), ceramics for high-heat parts, and plastic for interiors.

FACTS:

Aluminium, Titanium

Fuselage and wings

Ceramics

High-heat parts

Plastic

Interior

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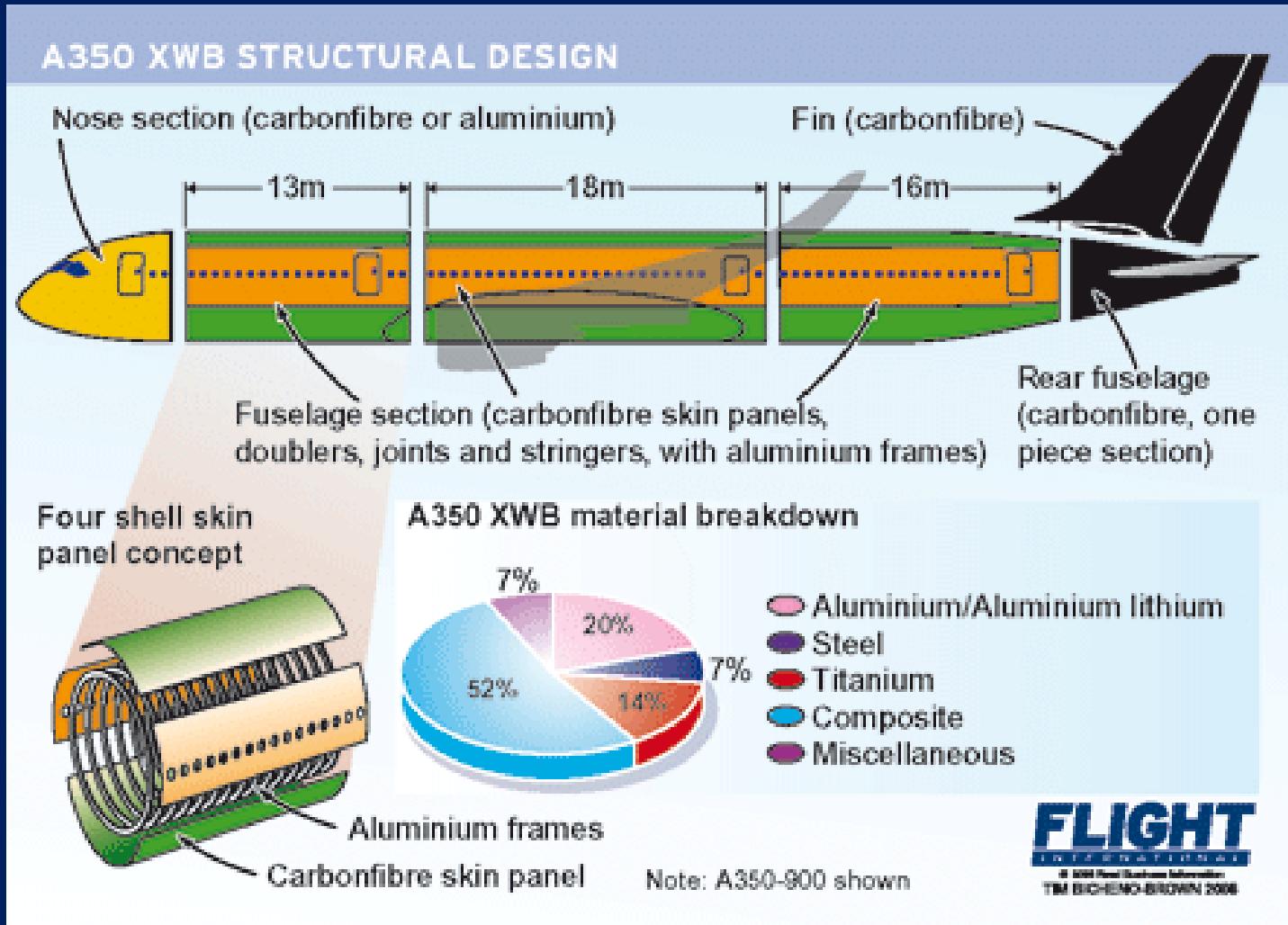
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High-heat parts

Plastic
Interior

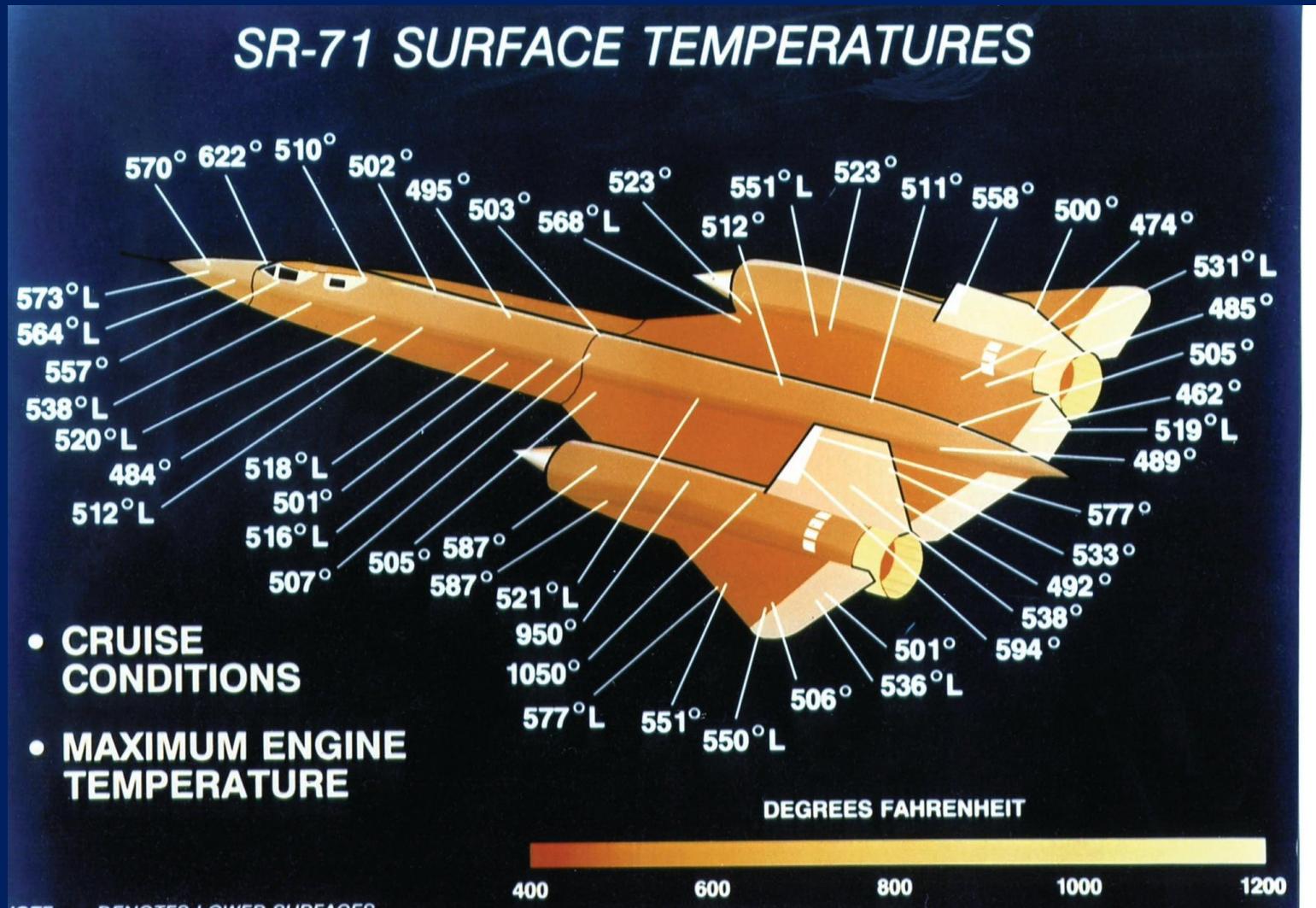


Boeing 787 Dreamliner

Why aluminum and titanium?

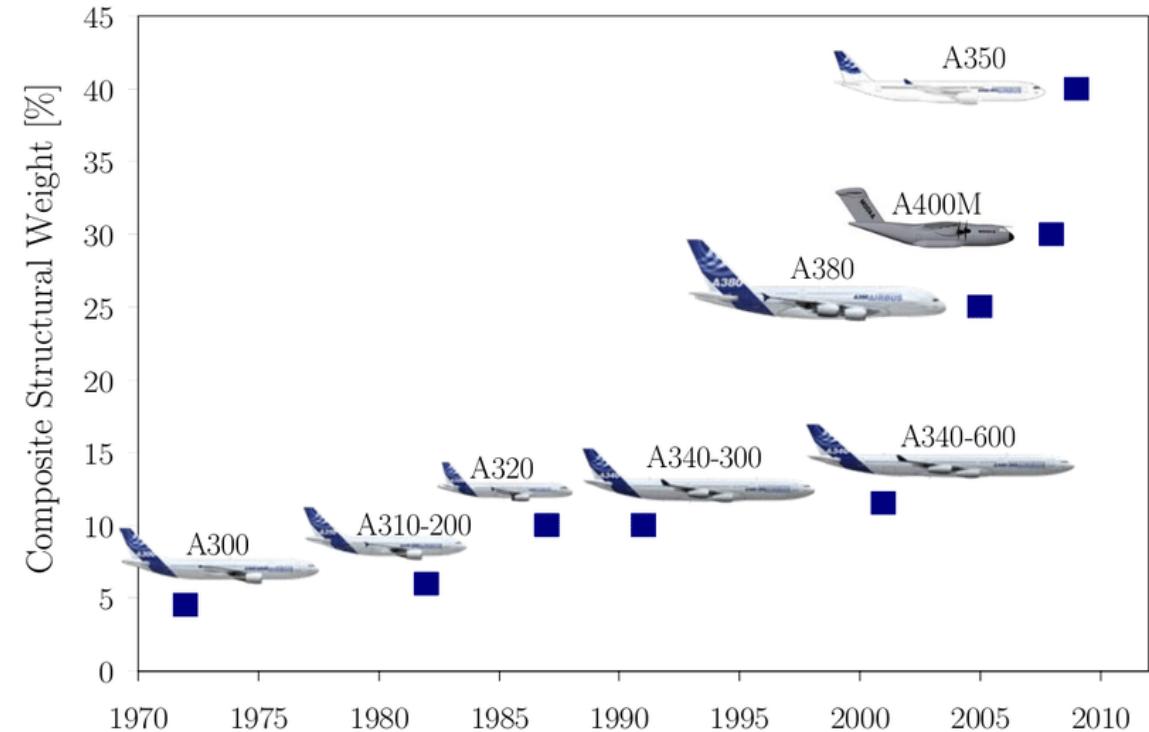


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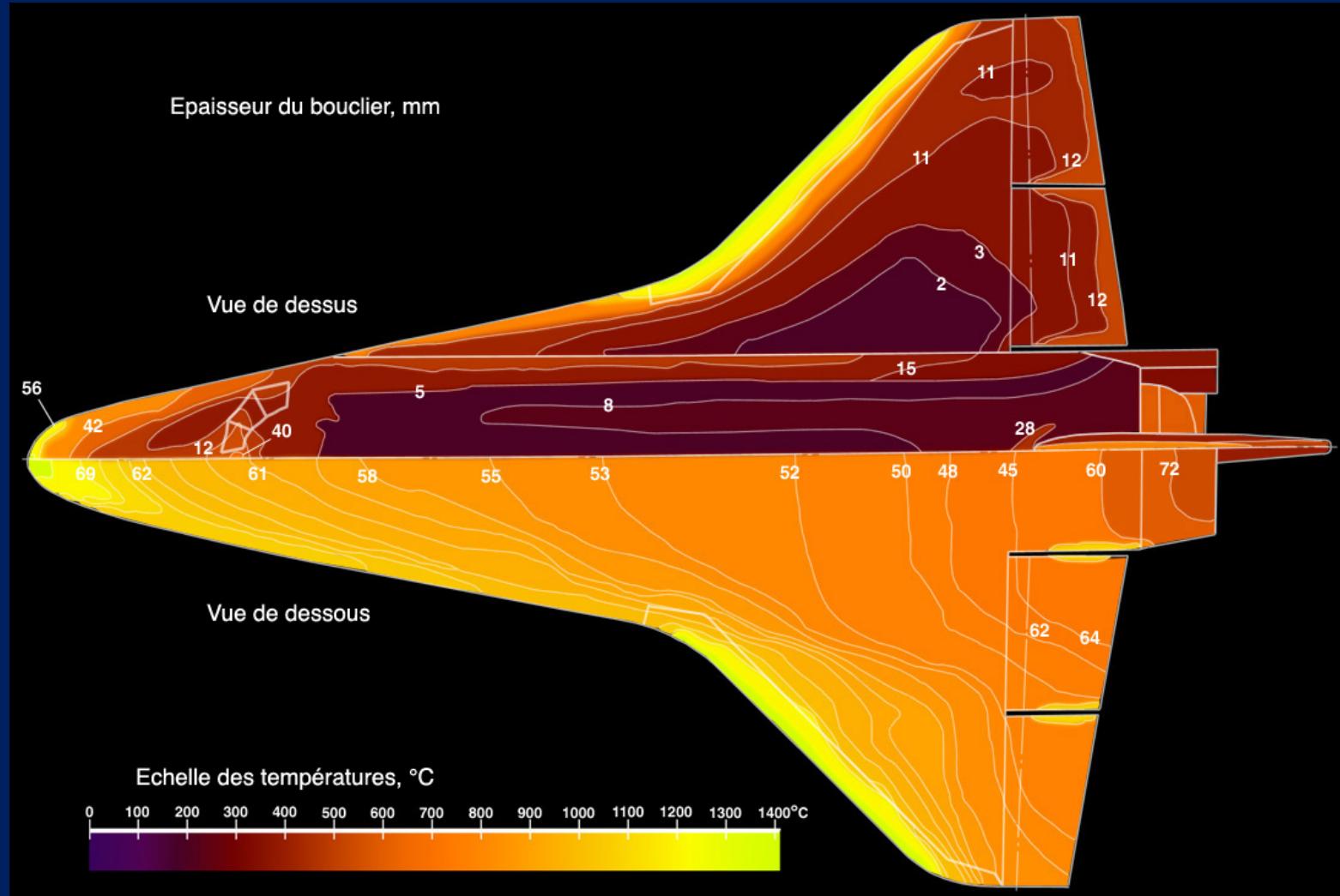


WHAT ARE COMPOSITES AND WHY ARE THEY POPULAR?

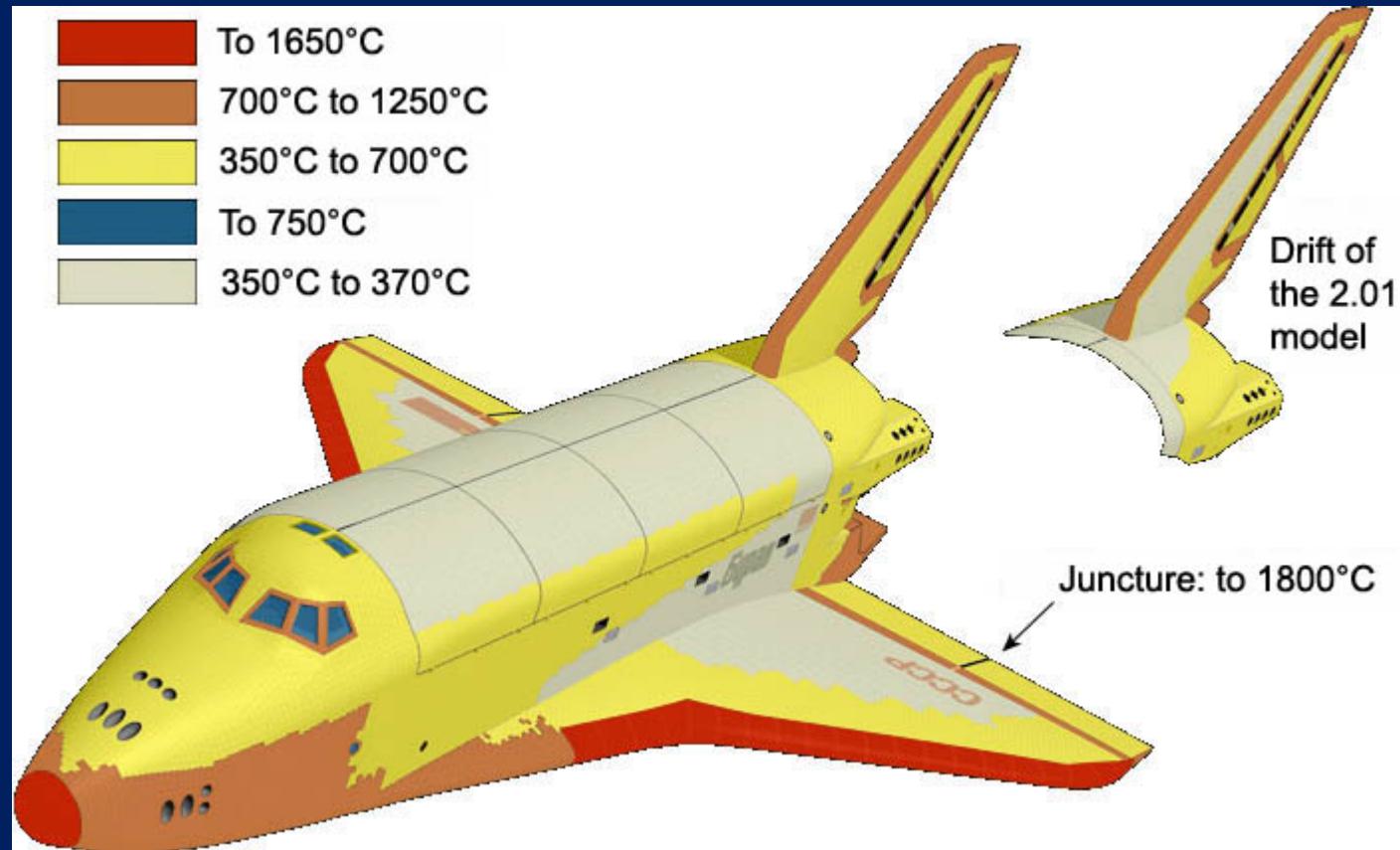
- High strength-to-weight ratio
- Corrosion resistance
- Reduces fuel costs and increases efficiency in aircraft like Airbus A350



How Do Ceramics Protect Spacecraft?



How Do Ceramics Protect Spacecraft?



PARKER SOLAR PROBE HEAT SHIELD

