

# Unmanned Systems

## F100-PW-220U Powered X-47B

### Proven Propulsion for Unmanned Combat Air Systems (UCAS)



Pratt & Whitney's F100-PW-220 turbofan, one of the world's most reliable fighter engines, has been modified to meet the needs of the U.S. Navy X-47B UCAS, the first autonomous, aircraft-carrier-capable, unmanned aircraft system, built by prime contractor Northrop Grumman.

The F100-PW-220U's high-pressure-ratio compression system provides the thrust required to conduct the demanding UCAS program. The engine is designed to satisfy the aggressive packaging and integration needs that a highly embedded propulsion system and survivable air vehicle require, delivering an exceptional balance of performance, safety and reliability.

The proven -220U components and processes are common to today's F100-PW-229 and F119/F135 family of engine technologies that allow low-risk spiral development for operational flexibility, increased fleet commonality, and reduced life-cycle costs.

- **Dependable, proven single-engine safety**
- **Excellent reliability**
- **Worldwide basing supportability**

The X-47B team achieved first flight in 2011 and the first-ever catapult launch and arrested landing of an unmanned aerial vehicle (UAV) on a carrier at sea in 2013. The UCAS program will be used to mature relevant carrier operation and integration technologies that will inform future Navy programs to develop carrier-based unmanned systems.

## Product Facts

### Characteristics

<b>Type</b>	Twin-spool, nonaugmented (dry) turbofan
<b>Thrust</b>	16,000-lb. dry thrust
<b>Compression</b>	Twin spool, axial flow, moderate aspect ratio <ul style="list-style-type: none"> <li>- 3-stage fan</li> <li>- 10-stage compressor</li> </ul>
<b>Combustor</b>	Annular
<b>Turbine</b>	Axial flow <ul style="list-style-type: none"> <li>- 2-stage high-pressure turbine</li> <li>- 2-stage low-pressure turbine</li> </ul>

### Military Applications

U.S. Military: X-47B UCAS

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