

AN UPGRADE TO TRANSFORM YOUR C-130H

- Maximize reliability
and performance for less



HIGHLY COST-EFFECTIVE C-130H MODERNIZATION

With the Collins NP2000 propeller system upgrade, your C-130H aircraft gains proven benefits that, previously, only a new aircraft could provide. Benefits like greater reliability that can cut your maintenance costs in half, and up to 20% greater thrust that enables your C-130H to take off from runways that are approximately 300 meters shorter. All this and more. All at a fraction of the price of a new aircraft.

Greater benefits by design

APPROXIMATELY

55%

HIGHER SYSTEM RELIABILITY THAN LEGACY

- Increases aircraft availability
- Extends aircraft life
- Cuts flight-hour cost in half
- Cuts per-hour maintenance costs in half

UP TO

20%

GREATER PROPELLER THRUST

- Shortens heavyweight takeoff by ~300m

APPROXIMATELY

20dB

OF LOWERED AIRFRAME VIBRATION

- Less noise/vibration reduces crew fatigue
- Increases MTBF of other aircraft systems





KEY FEATURES AND BENEFITS

PERFORMANCE AND RELIABILITY

- Up to 20% greater propeller thrust shortens heavyweight takeoff by approximately 300 meters
- Up to 55% estimated improvement in system reliability increases aircraft availability
- Approximately 20 dB lower airframe noise/vibration reduces crew fatigue and increases MTBF of additional aircraft systems

GLOBAL AFTERMARKET SUPPORT

- Our NP2000 is certified and operates globally on E-2 and C-130 fleets, with over 1 million flight hours. We continue to invest in innovation and expansion of our maintenance, repair and overhaul (MRO) facilities to serve global operators

MAINTENANCE COST SAVINGS

- Up to 50% estimated operational maintenance cost savings per flight hour compared with the legacy C-130 propeller system
- Up to 50% reduction in propeller maintenance labor hours due to:
- Improved overall system reliability
- New modular design enabling on-wing individual blade replacement

Due to reduced airframe vibration, you'll realize reliability improvements beyond the propeller system.



Avionics reliability data over 12-month period (flight control computer, TACAN, air data computer, heading indicator, attitude indicator, attitude gyro)

PROPELLING PERFORMANCE

The NP2000 has more than one million flight hours, offering proven technology to improve operational performance and reduce overall maintenance time and cost for the C-130H.

With its eight composite blades and enhanced electronic control system, the NP2000 offers several benefits to

operators compared to legacy systems, including a reduction in vibration and noise and an increase in take-off thrust. Operators can also replace individual blades on-wing without removing the entire propeller system, reducing maintenance time, while increasing the aircraft's availability.

Propeller system specifications



Specifications	Legacy 54H60 propeller system	New NP2000 propeller system
Propeller assembly	54H60-91 (-111/-117)	NP2000-7/-11
Blade material	Aluminum	Composite
Number of blades	4	8
Controller	Mechanical flyweight governor and synchrophaser	Electronic propeller control system (EPCS)
Valve housing	Mechanical valve housing (MVH)	Electronic valve housing (EVH)

E2/C2



C-130H



Global fleet upgrades

Scope	EPCS/NP2000	EPCS/NP2000
Upgrade launch date	2004	2013
Upgraded/On contract to be upgraded	115 aircraft (estimated)	203 aircraft (estimated)
Global operators (including U.S.)	4	5



Full system upgrade: Legacy vs. new systems comparison

Specifications	54H60 propeller system	NP2000 propeller system
Overhaul limit estimate	4	N/A
Lifecycle cost comparison (\$ per flight hour estimate)	~\$355 estimated cost per flight hour	~\$170 estimated cost per flight hour
Maintenance labor hours		Up to 50% estimated reduction vs. legacy system
Noise and vibration reduction		Up to 50% reduced acoustic noise (20db reduction) Lower vibration (magnitude) = less crew fatigue
Mission readiness		Up to 20% additional thrust ~300 meters reduced heavy weight takeoff distance Improved mission completion rates
Aircraft reliability		Up to 55% improvement in overall system reliability <ul style="list-style-type: none"> • EPCS 7x improvement vs. legacy synchrophaser • NP2000 blade 2x improvement vs. 54H60 blade
Logistics footprint	4 pallets per system	1 pallet per system (modular)
On wing replacement capability	No	Yes
Estimated labor hours for blade replacement	42 hours (30 hours with EPCS installed)	15 hours

PRODIGIOUS PROPS

Incorporating the NP2000 propeller system allows operators to remove and replace individual blades on-wing, without removing the entire propeller system. This significantly reduces maintenance time and cost, while increasing the aircraft's availability. And the entire system can fit into one 463L pallet, offering more cargo space needed for mission success.

EPCS ONLY UPGRADE:

Replaces the mechanical valve housings (1950s design) and the synchrophaser (1970s design) with modern electronic valve housings and electronic propeller controls.

LEGACY PROPELLER SYSTEM

Mechanical valve housing (MVH)

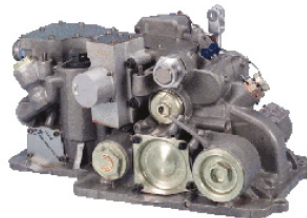


Synchrophaser



NP2000 PROPELLER SYSTEM

Electronic valve housing (EVH)



Electronic propeller controller (EPC)



Propeller maintenance panel (PMP)

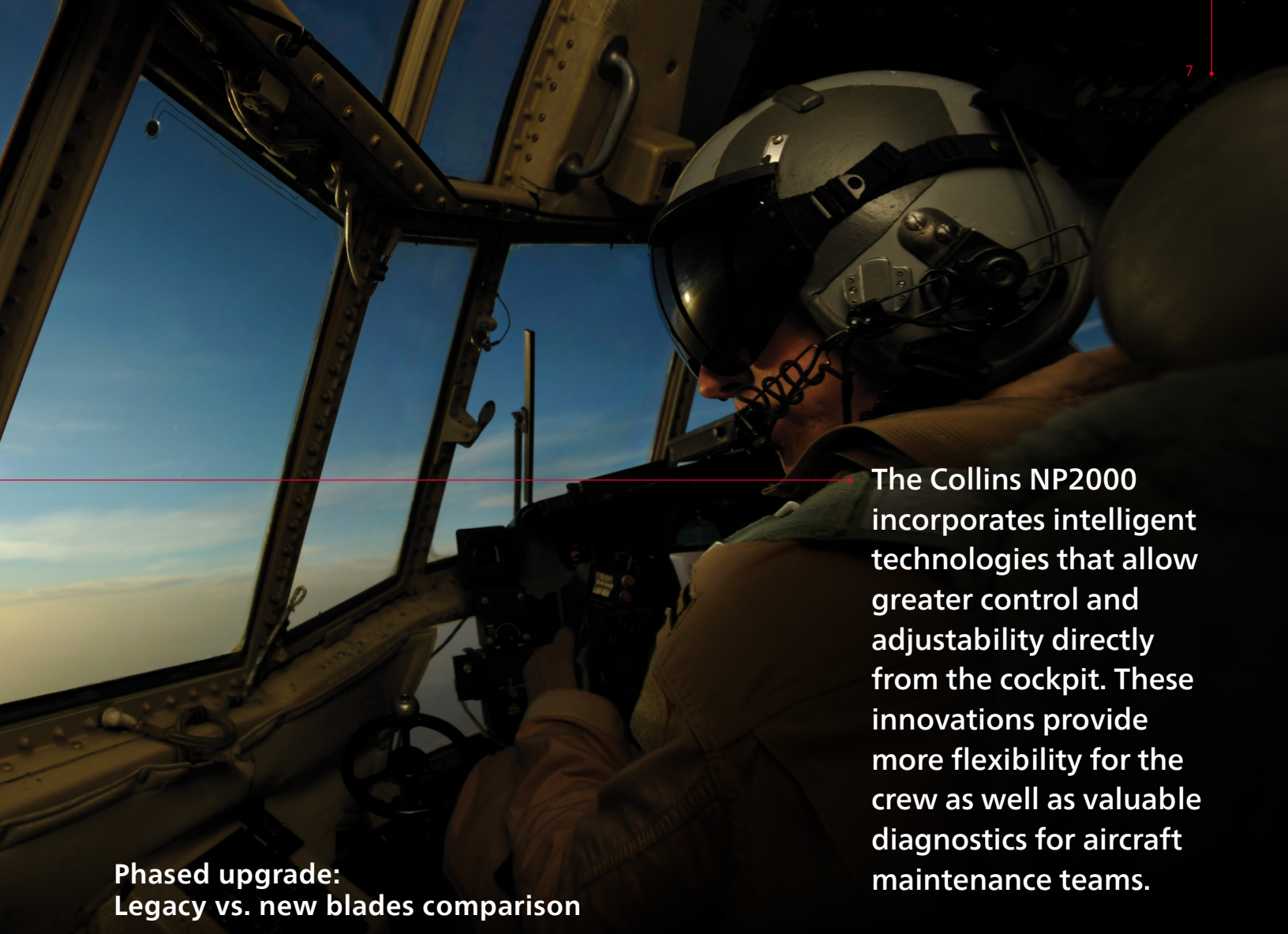


MECHANICAL CONTROL
SYSTEM REPLACED BY
DIGITAL ELECTRONICS
AND SOFTWARE

EPCS CAN CONTROL EITHER
THE 54H60 OR THE NP2000

BENEFITS

- Higher system reliability leading to less maintenance and improved readiness
 - Valve housing component count reduction, MVH cover eliminated
 - Digital electronics don't wear out or need adjustment
 - Flyweight governor eliminated
 - Cam actuated switches eliminated
- Maintainability improvements
 - System diagnostic fault codes for LRU and components of LRU allow preventative maintenance and faster corrective action
 - 100% RPM adjustment unnecessary
 - Beta schedule calibrated/adjusted from cockpit
 - Max. reverse adjustment conducted from cockpit during groundcheck
 - Overspeed protection system, secondary low pitch stop and fuel governor topping tests are automated



The Collins NP2000 incorporates intelligent technologies that allow greater control and adjustability directly from the cockpit. These innovations provide more flexibility for the crew as well as valuable diagnostics for aircraft maintenance teams.

**Phased upgrade:
Legacy vs. new blades comparison**

Specifications	54H60 with EPCS installed	NP2000 blades installed
Overhaul limit estimate	4	N/A
Lifecycle cost comparison (\$ per flight hour estimate)	\$300 estimated cost per flight hour (w/EPCS installed)	\$170 estimated cost per flight hour
Noise and vibration reduction		Up to 50% reduced acoustic noise (20db reduction) Lower vibration (Hz) = less crew fatigue
Mission readiness		Up to 20% additional thrust ~300 meters reduced heavy weight takeoff distance Approximately 3% improved mission completion rates
Aircraft reliability		Reduced airframe vibration due to NP2000 blade improves reliability of additional aircraft systems Up to 55% improvement in blade reliability vs. legacy 54H60 blade
Logistics footprint	4 pallets per system	1 pallet per system (modular)
On wing replacement capability	No	Yes
Estimated labor hours for blade replacement	30 hours with EPCS installed	15 hours
Improved corrosion resistance	No	Yes

To learn more, go

→ collinsaerospace.com/NP2000



Collins Aerospace

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