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National Airways Corporation (NAC) is the largest general aviation company in Africa and one of the largest of its kind in the world.

NAC offers a full range of aviation products and services to the aircraft and helicopter markets, including new and pre-owned sales, maintenance, parts, charter, international operations, air ambulance services, aircraft leasing and helicopter pilot and technical training.

Established in 1946, NAC's strength lies in the relationships it has built over more than seven decades with both clients and suppliers. These robust partnerships enable NAC's experienced and professional staff to provide market-leading, cost-effective solutions customised to our clients' specific requirements.

NAC was the world's first Flight Safety Foundation BARS Gold Standard operator.

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Introduction



- MT-PROPELLERS – Five Blade Props (fuel saving, reduces FOD risks, better performance).
- Noise abatement (five blade props reduces noise by five decibels).
- Electronic Flight Bags (EFB's, paper, printer, cartridge and weight saving).
- Solar and LED lighting (solar panels and lighting replaced with LED in offices).
- Recycling (paper, waste, oil, tins and plastic).
- GNSS/RNAV approvals – reduce emissions and fuel savings.
- Tyres – 20% saving on tyres with NAC reliability program.

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NAC operates a fleet
of nine Beechcraft
1900D's,
flying a minimum of
6000 hours
per year.



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Changing From 4-Bladed Propellers To 5-Bladed Propellers



5

5-Bladed Propellers Reduces FOD Risk To Engines



Shorter Blade Diameter:

Results in less runway FOD damage to the blades, engines and structure, as well as quieter cockpit noise and vibration.

Hartzell OEM Prop diameter: 279.4cm

BLR/MT Whisper Prop diameter: 260.0cm



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5-Bladed Propellers Cruise Performance Differences



- At altitudes in the FL220 to FL250 range at the same torque setting, N1 is 4% to 5% lower.
- At altitudes below FL200 at the same torque setting, N1 is 6% to 8% lower.
- The take-off acceleration is noticeably better.
- The initial climb when speed is set to Vy (best rate of climb speed) is much better.

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5-Bladed Propellers Noise Abatement



Noise (take-off):

- Hartzell 4-blade: 88.0dB
- MT WP 5-blade: 83.0dB
- **5.0 decibel difference**

Keeping in mind that decibels are logarithmically, where 3dB represents a 10% reduction in sound pressure level, a 5dB difference is a significant reduction in noise.



ICAO Annex 16 section 10.4(a) for take-off noise.

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5-Bladed Propellers Fuel Saving



- During cruise at same speeds **fuel burn is 20lbs per hour lower.**
- The **NAC** Beechcraft 1900D fleet flies roughly **6000hrs** a year, resulting in a fuel saving of **54 000 litres** per year.



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5-Bladed Propellers



- The entire NAC fleet to be converted by the end of 2024.
- Aircraft will be switched from the current Hartzell 4-bladed propellers to MT 5-bladed propellers at overhauls.



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Electronic Flight Bags (EFB)



- Reduces weight as less paper on board – no paper manuals.
- Easy access to company electronic manuals utilizing applications.
- Optimization of Flight Routes.
- Saving on cartridges and printing.
- Updated info directly to the pilots via the EFB.
- NAC is fully operating on Microsoft Sharepoint and IQSMS (electronic platform).
- Jeppesen ForeFlight flying Software.



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NAC Heliport Facility Solar and alternative Power Sources



- NAC's Heliport is operating on Solar.
- LED lighting on the Heliport Pads.
- The facility has office LED lighting.
- Censored lighting to ensure areas are not lit 24/7.



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NAC Offices Recycling Reduce the impact on the environment



- NAC has introduced full recycling program (Paper, plastic, metal and waste).
- Disposing oils and fuels into disposal tanks.
- The Aircraft Maintenance Organisation discards oil, fuel and lubricant waste.
- Contracts with recycling companies are in place to ensure waste is disposed of correctly.



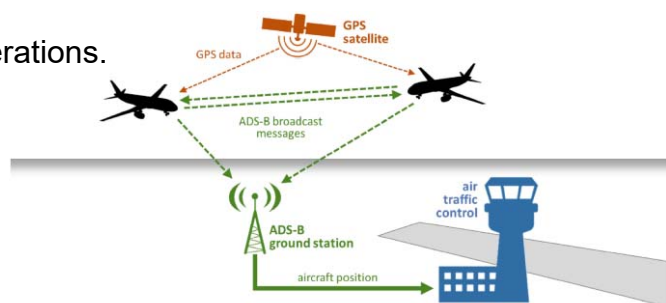
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NAC Optimizing Routes and approaches RNAV/GNSS



Reducing the impact on the environment using applications

- EFB's with latest weather applications.
- Foreflight with optimizing routes.
- Saving on missed approaches.
- Optimal Flight Planning prior to operations.



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NAC Reliability Program Reducing the tyre, brake and aircraft system failures



- Increasing tyre life by 20%.
- Creating awareness on longevity of brakes.
- Component and systems reliability.
- Life expectancy on parts.



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THANK YOU

“There is no such thing as ‘away’.
When we throw anything away it must go somewhere.”

Annie Leonard, Proponent of Sustainability



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