



WheelTug plc

WheelTug plc General Overview 27 October 2005



WheelTug plc

Introduction

Basic
Concept

Value

Technology

Business

Summary

WheelTug™

- WheelTug plc is seeking investment and partnerships to develop and certify the WheelTug™ aircraft tug replacement system
- Each WheelTug system is worth more than \$6M USD to mainline airlines



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Basic Concept

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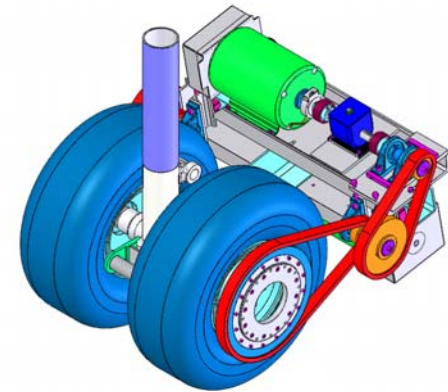
Business

Summary

Traditional Aircraft Tug



WheelTug



*Test design – new versions
incorporate motors in the wheel hub*



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Basic Concept

Traditional Aircraft Tug

Aircraft must wait for
tugs to leave gate



Wheel Tug

Aircraft can drive
themselves away
from the gate



Benefits:

- More flights for the same overhead costs
- Tugs require extensive labor and maintenance
- Aircraft collisions with ground vehicles cost \$4B/year



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Basic Concept

Traditional Aircraft Tug



Aircraft require
turbines to taxi

Wheel Tug

Aircraft can taxi
without their
turbines being on

Benefits:

- Significant fuel savings
- CO2 and noise emissions reductions
- Reduction in foreign object damage



WheelTug plc

Value per Aircraft

Introduction

Decreased turnaround time	\$250,000/yr
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Basic

Jet turbine maintenance reductions	\$120,000/yr
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Concept

Ground Damage reductions	\$134,000/yr
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Value

Fuel Savings	\$315,000/yr
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Technology

Ground Tug Operations	\$64,200/yr
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Business

CO ₂ Credits	\$36,600/yr
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Summary

Total	\$920,000/yr
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PV (including overhauls and not including purchase price)	\$6.5M
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Market Value

- Sales price/unit will be \$2M (30% of PV)
- System cost information and potential profits are proprietary and can not be shared without an NDA
- Thousands of mainline aircraft could be retrofitted



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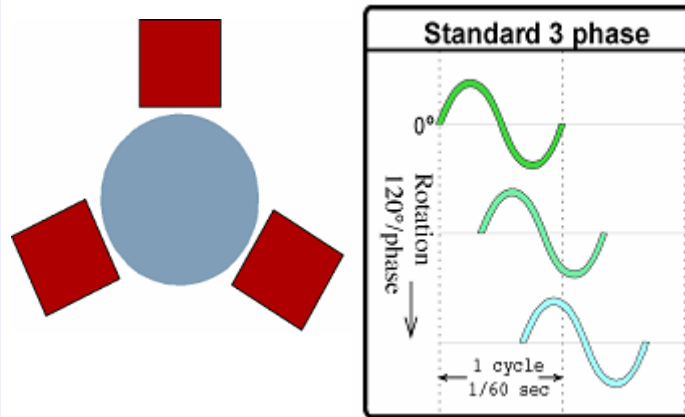
Technology

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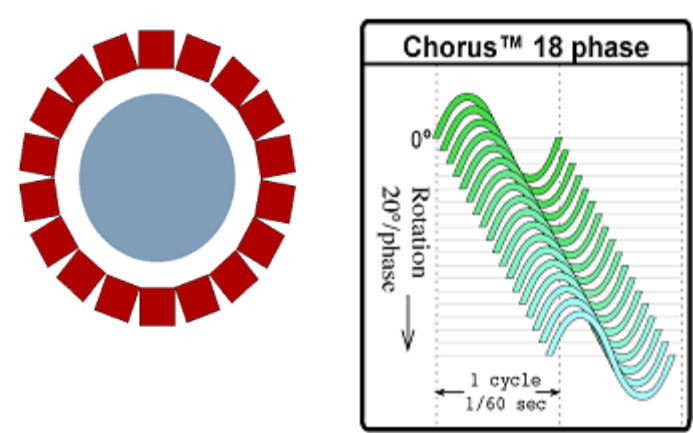
Summary

Chorus Technology

Traditional 3 Phase



Chorus Motor



Benefits:

- Greater sampling rate yields less harmonic distortion
- Electronic control of additional poles allows automatic reconfiguration of the motor for different torque/speed profiles



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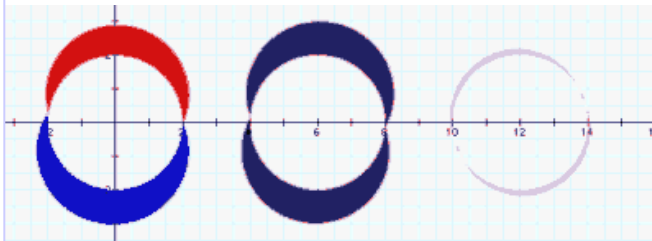
Technology

Business

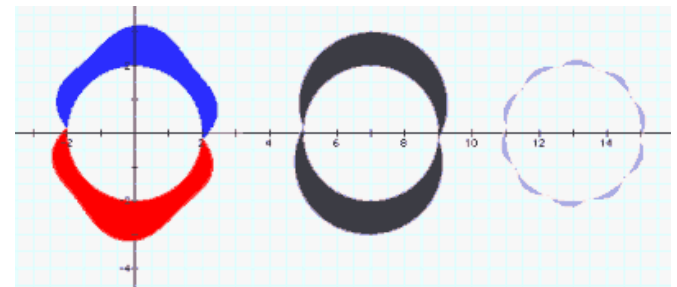
Summary

Harmonic Distortion

Traditional 3-phase motor



Chorus Motor



Benefit:

- Elimination of harmonic distortion means less heat and more torque



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Benefits

A Chorus Meshcon system offers:

- 3-5X more torque
- Up to 70% reduction in size and weight of electronics
- Improved reliability
- No component risk



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Chorus and WheelTug™

- WheelTug plc has created and tested a complete WheelTug™ demonstration system
- Elements included:
 - A Chorus Meshcon motor
 - Cockpit controls
 - Wiring and electronics systems
 - Control software



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Technical Status

- Demonstration unit has been successfully tested on a 767. Testing was carried out in partnership with Boeing
 - Boeing Demonstrates New Technology for Moving Airplanes on the Ground, Aug 1, 2005
 - http://www.boeing.com/news/releases/2005/q3/nr_050801a.html
 - Flight International Aug 09, 2005
 - <http://www.flightinternational.com/Articles/2005/08/09/200792/Tests+prove+electric-drive+concept.html>
 - Aviation Week Article: “Boeing Tests Nosewheel Taxiing Motor” Aug 08, 2005
 - <http://www.aviationweek.com/avnow/> --Subscription only



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WheelTug plc

- Owns the rights to the Chorus technology for this application
- Owns the rights to additional patents for the WheelTug concept – irrespective of what system is used



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WheelTug plc

- Development of the technology for certification on cargo aircraft will require approximately \$10M USD.
- Certification on passenger aircraft will require additional funds.
- WheelTug can design and certify the entire system, but would prefer to work with partners who can bring their expertise to the table



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WheelTug plc

- We are looking for partners to:
 - Invest in Development work
 - US\$100 Million for 25% of WheelTug plc
 - Limited shares at US\$10 share up to US\$1 Million
 - Co-Develop the Technology
 - Purchase production slots
 - US\$150,000 per system
 - Letters of Interest
- Any partner can play multiple roles



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- WheelTug is an exciting product
- The future is profitable
- The company is seeking partners for the design and certification of the WheelTug system

This is an excellent early opportunity to get involved with an exciting technology



WheelTug plc

FOD Examples



1. Source: www.avfueller.com/Safety.htm



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FOD Examples



1. Source: www.fodnews.com



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FOD Examples



1. Source: www.fodnews.com