



Revolutionizing Aero Propulsion Efficiency

Double-Digit Aviation Emissions Reductions

Project Update - MAR26

Sander de Moor
Company Director

Event: *the 2026 Americas edition of the
Airline & Aerospace MRO & FLT OPS IT Conference*



deltaBURN?

experienced in Aero-STCs

- ✓ R&D company, focused on **(aero)fluid dynamics** applications
- ✓ Registered in Singapore; legal entities in UK, USA for STC work
- ✓ Aero Products: **modifications** for fanblades, propellers, rotor blades

OUR MISSION

supporting Industry and Planet

- ✓ To **drastically lower** aviation emissions of **current technology** engines
- ✓ To **support SAF scaling** by reducing **SAF volume requirements**

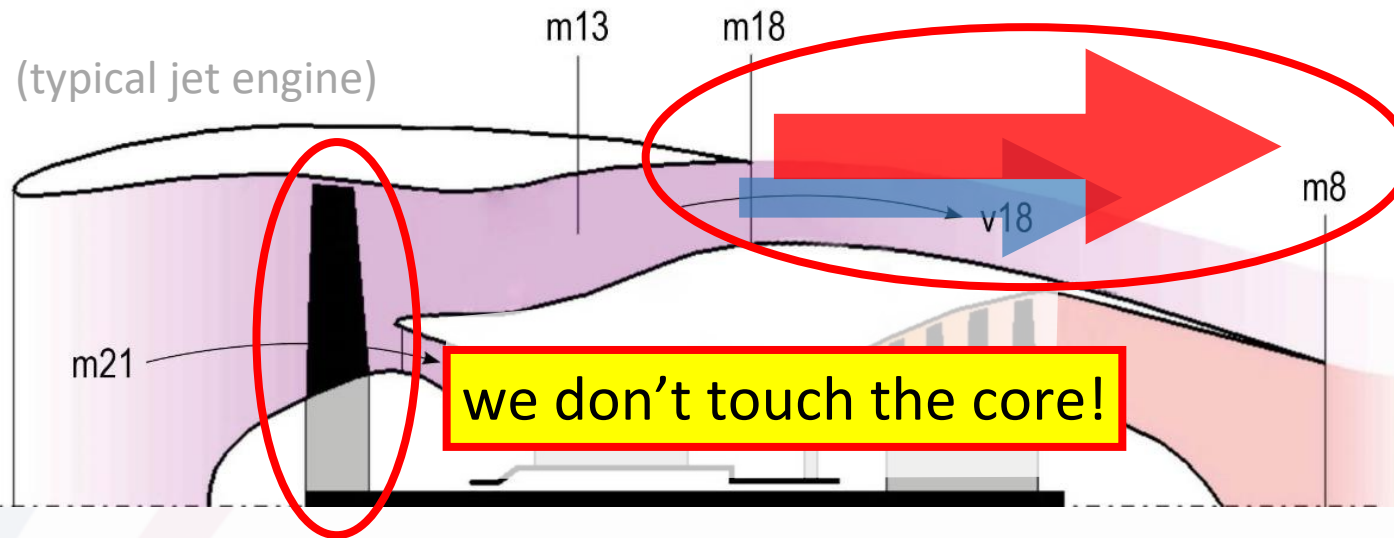
OUR OBJECTIVES

REAL reductions: burn, cost

 <p>\$ ~33% Global Aviation Fuel Burn Reduction</p>	<p>= ></p>  <p>~33% Global Aviation Emissions Reduction</p>	 <p>~50+% Increased PLR & better H&H OPS</p>
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DELTABURN TECHNOLOGY – THE NUTSHELL



Our technology focuses on
fan disk efficiency

Our modifications create

- *MORE Mass Flow*
- *MORE Exhaust Velocity*

Result: MORE Thrust! or Same Thrust as before, but at a *lower N1*

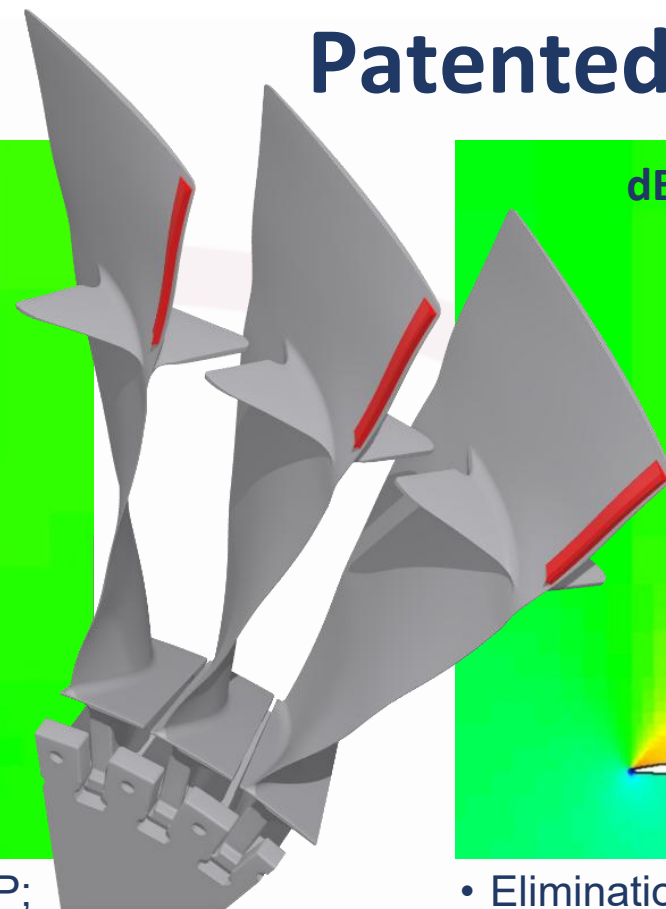
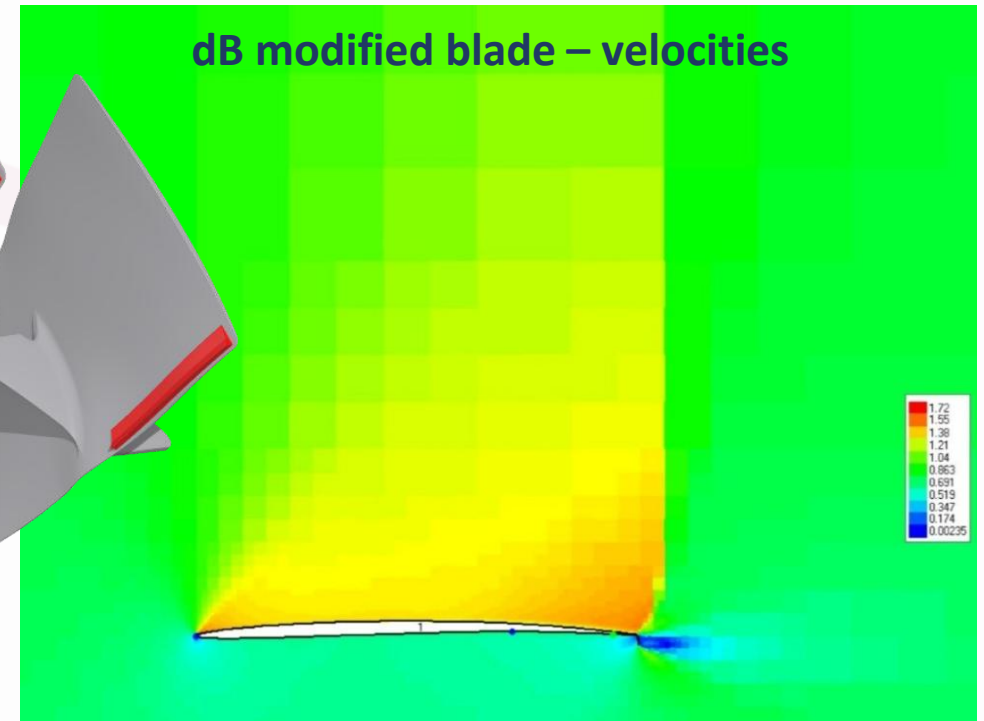
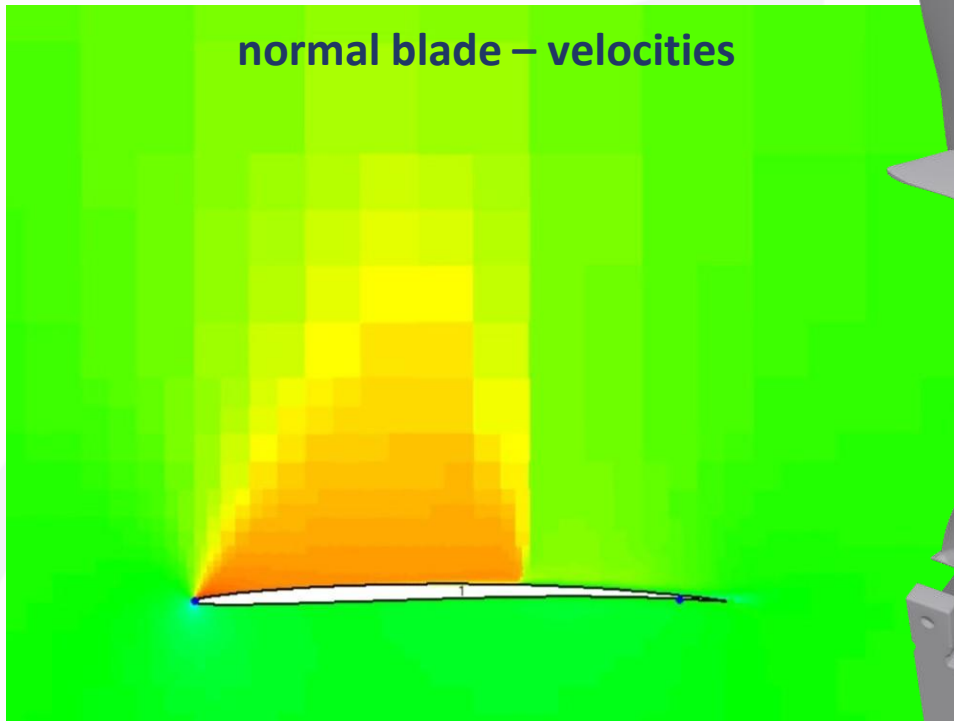
Benefits: permanently derated engines; **lower** operating temperatures / stresses / fuel burn / *ALL emissions*; plus, higher **safety margins, reliability**

How did we get here? We looked where no-one has looked

~~Magic?~~ **Real Science!** Flight tested, demonstrated, **in certification!**

DELTABURN

Patented Technology Detail



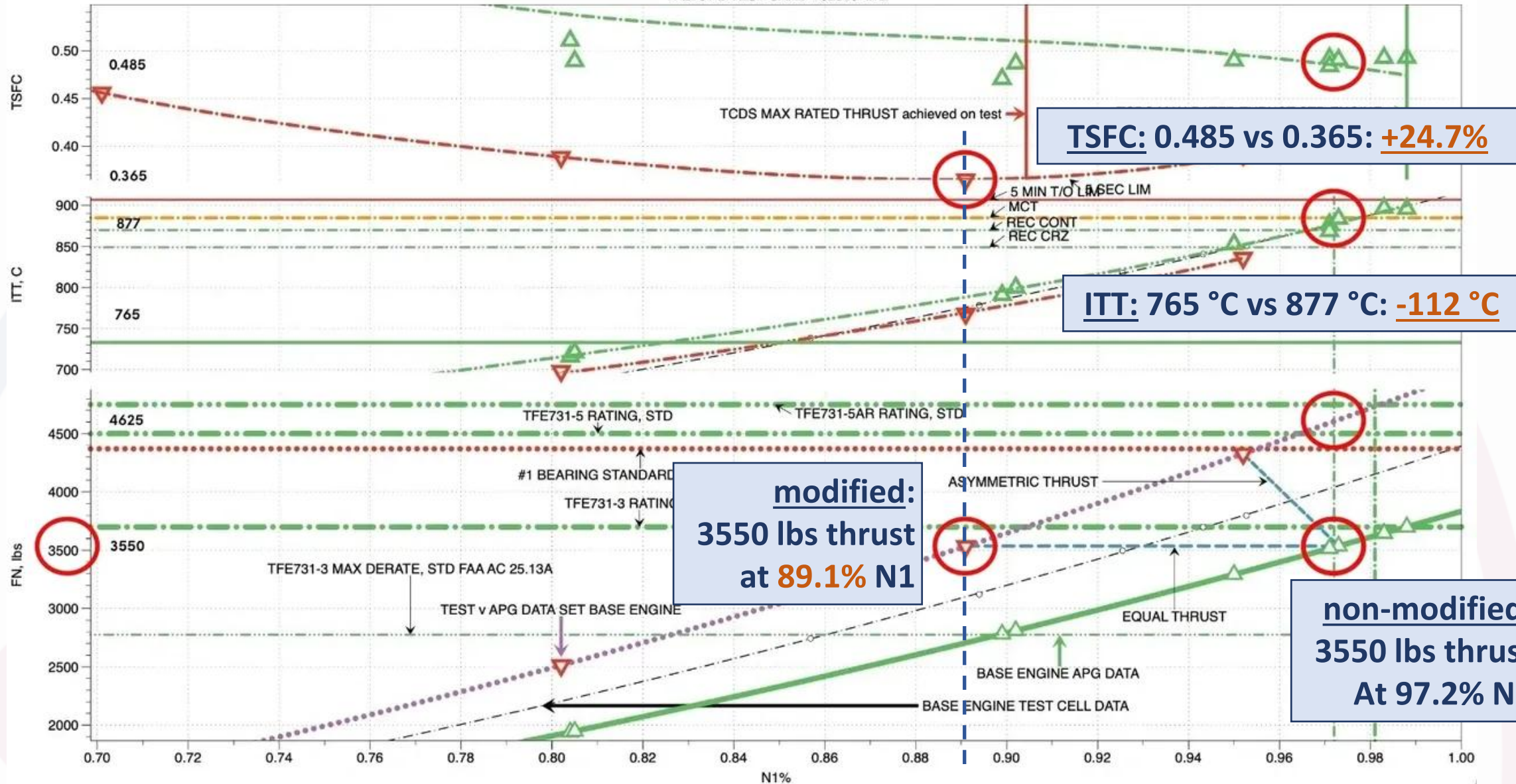
- Simplified 2D Single Blade imaging – BYGTP;
- Standard (non-modified) section with normal shock;
- Flow aft of shock is sub-sonic, and remains sub-sonic;
- **Today's best outcome is a non-optimum situation!**

- Elimination of shock on section, resulting in sonic flow along entire section suction side;
- **NOVEL: P-M Expansion Fan** now maintains sonic flow into bypass duct + **NO CHOKING!**

- ✓ **We get rid of normal blade shocks and add recovered energy to post-blade flow**
- ✓ **We increase total engine efficiency by ~30%, by only touching the fan**
- ✓ **What we do has never been done before with jet engines – until now!**

DELTABURN TECHNOLOGY – TFE731 (1124A)

TFE731 B TEST CARD-T02063-1/-2





Here, we showed a short video of a 737 Classic taking off with one of its engines modified.

Which one?

Note: this 737 Classic flew more efficiently than a 737 MAX!

Let that sink in!



N1

EGT

N2

FF

B737, Climb, FL250 *All Trims Neutral*
 Left Engine is modified, right engine is "standard"! Numbers from the dials:

- N1 (fan RPM) ~8.5% less
- EGT (exhaust temp) ~90 C lower
- N2 (core RPM) ~4.8% less
- FF (fuel flow) ~25% less

BUT- on previous flights the left engine was running 22C hotter and burning 5% more fuel than right engine, so.....

- EGT (exhaust) ~112 C lower!
- FF (fuel flow) ~30% less!

(the left engine was up for an overhaul)

EFFECTS IN ACTION

Here we show an image of a Boeing 737 Classic, during a demonstration flight we did over two years ago.

This image was taken during climb, passing through FL250. We had modified the left engine, to show the differences between a modified and a normally operating engine.

Check the lower N1 (RPM) in the top-left gauge, and the lower Fuel Flow in the lower-left gauge.

Also shown is a much-lower exhaust temperature (EGT) which translates into a much longer engine life.

The higher and faster we fly, the greater both effects and results. At normal cruise altitudes and speeds, we generate more than 50% additional thrust. **Let that sink in.**



33%... OF WHAT?

Nobody Really Knows

- ✓ Global Aircraft Count: ~600k; we see ~156k for the TF-TP-TJ-TS fleet
- ✓ 2025 fuel burn (USG) ~120 Bn | CIV ~104 Bn (AT ~96 Bn) | MIL ~16 Bn
- ✓ IATA: 20.8k aircraft using ~78 Bn USG (~80% of AT) ↕

BURN, BABY

Aviation is 3% + effects

- ✓ 2025 Global CO2: ~39 Gt | 3% equals 123 Bn USG fuel (1.17 Gt CO2)
- ✓ Travel grows by ~4%/year; efficiency saves ~1.5%/yr; net 2.5% ?
- ✓ Today's ~120 Bn USG will grow to (IATA's 500)-700 MT SAF needs

ENTER deltaBurn

*We can do our bit in 5 years!**



can touch **87%**:
 ~83k TF & TP aircraft
 burning ~103 Bn USG

YEARLY, we'll reduce
 ~34 Bn USG (\$ 75 Bn)
 ~0.326 Gt CO2 (\$? Bn)

Who burns what?
 WB 60% | NB-RJ 40%
 B737 & A320 = 35%



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REAL reductions, not Accounting!

 \$ ~33%

Global Aviation
Fuel Burn Reduction

= >

 ~33%

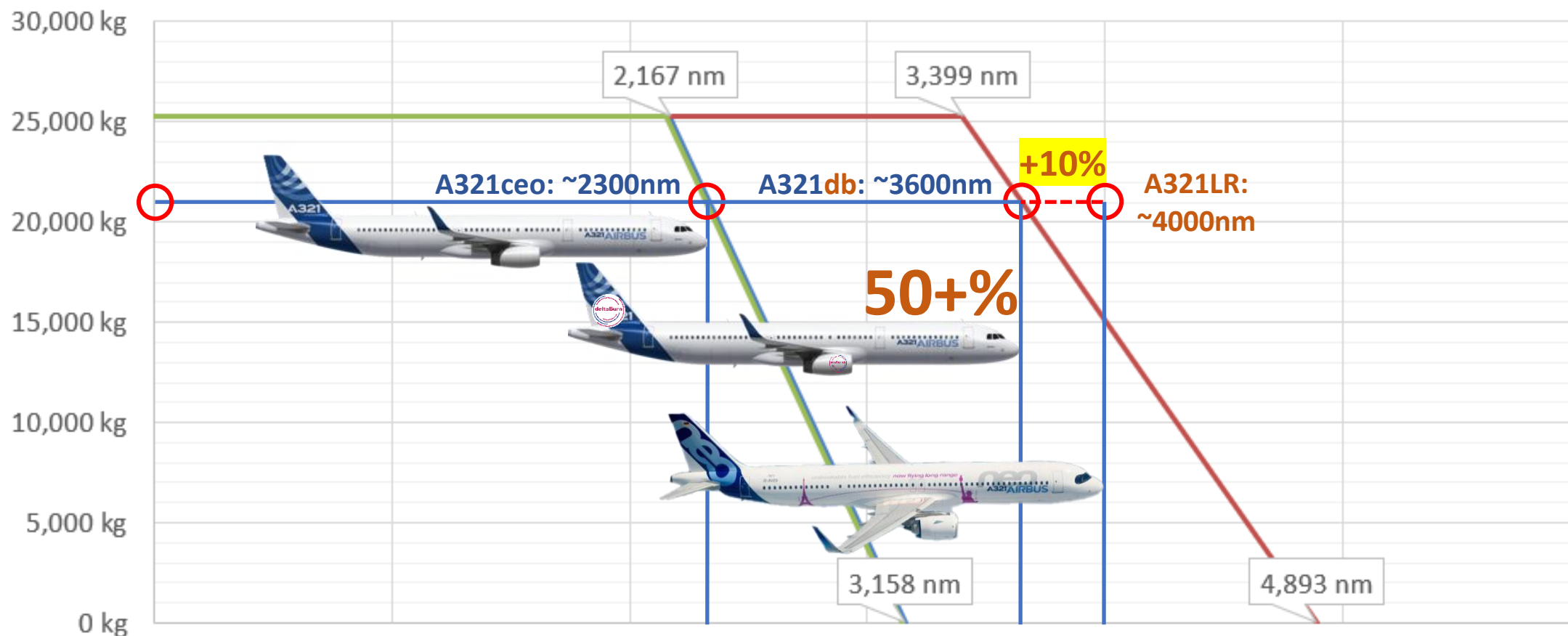
Global Aviation
Emissions Reduction

 ~50+%

Increased PLR
& better H&H OPS

A321 versions ceo-db-LR, **21T** payload

A321-231 (V2533-A5) | ISA-SL | EASA | ALTN 150 nm | FRES 30 min



Our technology brings the range of a standard A321ceo within striking distance of that of an A321 LR! After modification, the A321ceo gets over 50% more range using proven, reliable engines that will now run derated at all times, plus, engines that will now live a lot longer too!

SO- WHERE ARE WE TODAY?



Dawn Patrol - on the ramp with our Merlin III test bed

TURBOPROP (TPE331) RESULTS

Calculated Performance Metrics
TSFC (lb/hr/lb): 0.236

Stability Monitor
Window (Hz): 10 CV Limit (%): 2.0 Avg: 2122.1 hr SD: 27.69 CV: 1.30% **STABLE**

Control Panel

Units: lb IN

Target (lb): 2000.0 Set

CF: 1.0 Set CF

TARE (Zero)

Stop Recording

Data Entry:

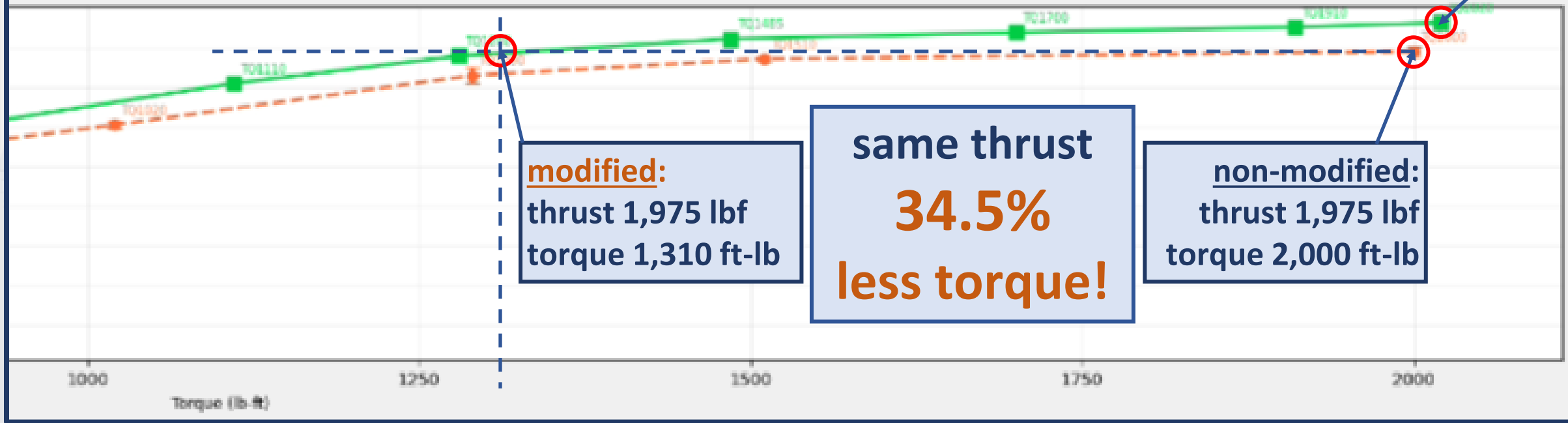
- Engine Data
- Flight Data
- Ground Test
- Add Marker

Recording: thrust_data_20240228_10160 Save



ITT Limit:
thrust 2,140 lbf
torque 2,015 ft-lb

Performance Plot — Thrust vs TQ [Raw]



modified:
thrust 1,975 lbf
torque 1,310 ft-lb

same thrust
34.5%
less torque!

non-modified:
thrust 1,975 lbf
torque 2,000 ft-lb



TURBOPROP (TPE331) LIQUID IMPACT TESTING



OUR BOOTSTRAPPED ROADMAP

Turboprops: TPE331, PT6, PW100: TODAY

✓ 1st STC: target Q2-26, *internally funded*

✓ FAA: "We consider this a MINOR mod"



IN PROGRESS

TP program revenues will support fan program (target +2 years)

WHEN ABLE

Turbofans (TF):

✓ 1st STC: *Ready for Certification*

Funding from organic TP revenue growth will delay the Fan Programs by 2 years or more, which is a waste!

One-time funding today will accelerate this!



PLANNED



*Gloucester Jet
Test Centre Ltd.*
ALL VISITORS MUST
REPORT TO RECEPTION

**Demo with LF507-1F engine in UK, FEB25
Engine provided by TC holder CFS Aero**



Inside test control room



Our program is live, active, and producing impressive results

COMMERCIALS

No Upfront Costs

- ✓ Our products (our STCs) will be **leased** to our customers
- ✓ Customers will pay post-savings; Invoicing from verified savings

PRODUCT

Additive Engineering

- ✓ We'll do the Installation (**A-check**) & CAMO, Maintenance (**OPS data**)
- ✓ Design life is **C-check interval** – or *better (testing is ongoing)*

AN INTERESTING COMPANY

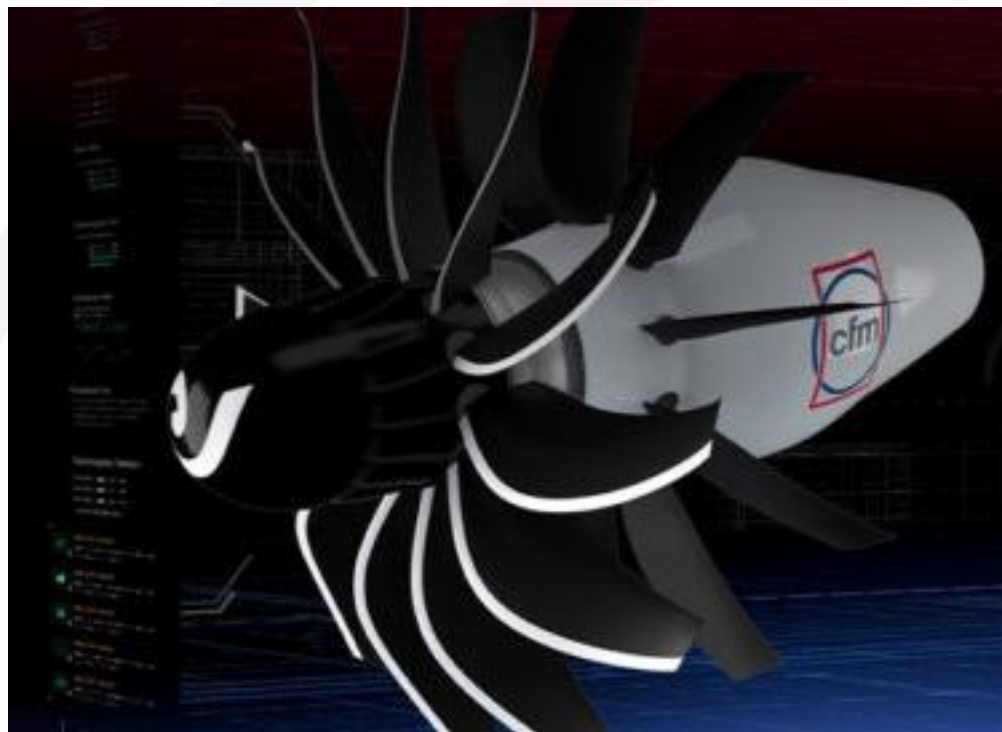
from Zero to Global

- ✓ **Disruptive Technology** – how to avoid invasive monopoly attempts?
- ✓ **Unique Structure** – Private Company, non-diluting (share)ownership
- ✓ Open to **WIN-WIN** Partnerships in any Aircraft Type STC project
- ✓ To receive payouts whenever a competitor installs an STC – **Priceless!**

WHAT ALTERNATIVES TODAY?

This Decade: **NOTHING**. Some (hybrid-)electrification?

Next **DECADE**: CFM RISE, RR ULTRAFAN. More (hybrid-)electrification?



- ✓ Only 20% improvement over LEAP
- ✓ Significant challenges and concerns
- ✓ **Forward-fit only**



- ✓ Only 10% improvement over Trent XWB
- ✓ Only available for widebodies, for now
- ✓ **Forward-fit only**

DELTABURN RECAP

Disruptive Technology

- ✓ 1/3 Aviation Emissions Reduction THIS DECADE – for current aircraft
- ✓ Supports SAF roll-out AND non-CO2 initiatives (electric, radiative)

Lowest Cost – Easiest Implementation – Highest Impact

- ✓ The ONLY Straightforward, Cost-Effective Technology available TODAY

Great Investment – Great ROI

- ✓ Non-Standard Investment protocol BUT great for the *Right Partner*

BEST OUTCOME: Aviation Industry Will Take a GIANT CLIMATE LEAP

- ✓ Enabling much-wanted large improvements on many fronts
- ✓ Ensuring that the Industry remains SOCIALLY RELEVANT

READY For Take-Off:

- ✓ In certification today – we're looking for SUPPORT to ACCELERATE this

**33% less
JET FUEL BURN**



ASK ME HOW

“Your work could well be the single largest step-change in propulsion efficiency of this century”

a Steering Committee member, NASA Atmospheric Flight Programs
(stated last year when discussing the BWB design)

Thank You



deltaBurn Pte. Ltd.
Singapore

deltaBurn Inc.
Deer Valley, AZ, USA

deltaBurn Global Ltd.
Glasgow, UK



SHAMELESS dB-partner PLUG:

Is your flight data: **improving safety**
helping pilots
saving fuel

Fliant

All Things Data
partner of deltaBurn



Fliant turns raw flight data into actionable insights that improve safety, support pilot performance, and optimize fuel efficiency. Our FlightVue platform automates the entire flight data monitoring process — from data collection and event detection to investigation and operational analytics.

Flight Safety | Flight Test | Fuel Efficiency