M2/CJ3+
Series Breakout Session

2018 Citation Jet Pilots Convention
Textron Aviation Leadership

Ron Draper
President and CEO
North America Aftermarket Leadership

Kriya Shortt
SR VP Customer Service

Roxanne Howell
VP North American Service Centers

Chris Hearne
VP Product Support

April Gerber
VP Parts & Programs

Previn Kulkarni
Director Engineering

Scott Howell
Director Field Service

Phil Murphey
Director Aftermarket Sales

Tracy Leopold
Director Aftermarket Sales
Textron Aviation Breakout Support

Roxanne Howell  
VP Service Center

Chris Provencio  
GM Service Center  
San Antonio

Preston Brunswig  
Aftermarket  
Programs

Cybill Zimmer  
TAPD & Programs
Product Support Management

Light and Legacy Jet Product Support Manager

Jessica Busse  
Manager Light and Legacy Jet  
jbusse@txtav.com  
Desk: +1 (316) 517-5458  
Cell: +1 (620) 313-0113

Team Legacy  
teamlegacy@txtav.com  
+1 (316) 517-7786

Team 525  
team525@txtav.com  
+1 (316) 517-7785

Team Mustang  
teammustang@txtav.com  
+1 (316) 517-5490

Team Beechjet  
Beechjet400xp@txtav.com  
+1 (316) 517-9350

Team Premier  
Premier@txtav.com  
+1 (316) 517-9350
Product Support Alignment
Team 525

Team 525
Team CJ Joins Forces with Team M2

✓ Align CJ fleets & Citation M2 with the experts
✓ Robust level of technical service
✓ Response within 24 hours of contact
Team 525

Adam Balvanz  Blake Barnard  Jeff Bowen  Mike Bryant  Cameron Teel

Team525@txtav.com or 316.517.7785
Team Powerplants

Phil Pankratz

Rollin Rising

teampowerplants@txtav.com or 316.517.6232
Team Twilight

Hank Weyland
Monday - Thursday
2 PM – Midnight CST

Don Sweet
Monday - Thursday
10 PM – 7 AM CST

Jake Weiss
Monday - Friday
2 PM – 10 PM CST

Michael Holler
Friday – Sunday
7 AM – 7 PM CST

John Moody
Friday – Sunday
7 AM – 7 PM CST

Carl Fischer
Friday – Sunday
7 PM – 7 AM CST
Textron Aviation Service Directory
App & Online Access

- Service Directory App
  - Support Contacts
  - Service Centers
  - Flight Assurance
  - Diagnostics
  - More Features In Development
- Free Download Available
  - Android: Google Playstore
  - Apple: App Store
- Textron Aviation Service Directory Online
  - www.txtavsupport.mobi
    - .mobi = Service Directory
Fleet Statistics
525 Fleet Statistics

- M2
  - Fleet Size: 180
  - Fleet Total Time: 84,837
- CJ3+
  - Fleet Size: 104
  - Fleet Total Time: 46,465
Technical Updates
Battery Start versus GPU Start
All Models

• Battery Starts
  • No Issues When Using a Healthy Battery
  • Degraded Battery can Result in Slow Engine Spool Up Time and Increased ITT During Engine Start
  • Observe AFM Battery Voltage Limits for Engine Start

• GPU Starts
  • Reduced Engine Spool Up Time and Lower ITT During Engine Start
  • Eliminate Battery Discharge/Recharge Cycle
  • Increased Battery Service Life
  • Observe GPU Requirements in AFM
  • May Damage Aircraft Electrical System if Not Working Correctly
Ground Power Unit Procedures
All Models

• Textron Aviation GPU Procedures
  • Connect Main Ship Battery
  • Turn on GPU and Allow Voltage to Stabilize
  • Connect Energized Cord to Airplane
  • Disconnect Energized GPU From Airplane
  • Turn Off the GPU

• Not Adapted as Common Practice
  • Training is Different, FBO’s May Not Practice This Method
  • Testing Documented Aircraft Spikes Occur When Deenergized GPU Plugged Into Aircraft Induces Voltage Spikes on Aircraft
  • Overvoltage and Current Protection Incorporated in Design May Not React Fast Enough
  • Circuit Boards and Sensitive Hardware Damaged From GPU’s
  • Spikes May Occur if GPU is Connected With Main Ship Battery Disconnected From Aircraft
Ground Power Unit Procedures
All Models

• Did you know?

• Small Pin in External Power Receptacle Allows GPU Main Contacts to Engage Before Aircraft External Power Relay Energizes
• Prevents GPU Main Contacts From Arcing During Insertion and Removal
Toilet Fluid Spill Prevention
All Models

- Toilet Fluid Spills Primary Cause is Improper Maintenance
  - Toilet Fluid is Corrosive and Extreme Caution Must be Exercised to Prevent Spills
- Refer to Maintenance Manual Chapter 12 Servicing
  - Follow Maintenance Manual Procedures for Proper Removal/Installation and Servicing of Toilet
  - Use Only Approved Materials Listed in Chapter 12
  - Materials that are clear, liquids & powders that turn clear, are not approved
Toilet Fluid Spill Prevention
All Models

- Visually Inspect Toilet Area for Evidence of Leakage During Removal/Installation
  - Supply Hoses and Coupling
  - Servicing Cap
  - Tank Condition
  - Pump
  - Tank to Bowl Connection
  - Knife Valve
Toilet Fluid Spill Prevention
All Models

- Fluid Spills
  - Clean up Should be Done as Quickly as Possible
  - Aircraft Should not be Dispatched Until Spill is Properly Cleaned
  - Web Article “Team Structures Addresses Toilet Spills” Published on TxtAvSupport.com Website November 23, 2010
  - YouTube video “Toilet Spill (Blue Water) Cleaning Procedures” Viewable on Cessna YouTube Channel https://www.youtube.com/watch?v=Xn7304qocqE

- Key Points
  - Verify Toilet Tank is Serviced With Correct Amount of Fluid
  - Verify Toilet Tank is Correctly Installed and Secured
  - Verify Pump Supply Line Coupling is Properly Connected to the Tank
  - Verify Knife Valve is Fully Open Before Toilet Use and Fully Closed Before Toilet Removal
Corrosion Severity
All Models

• Corrosion Severity Maps
• Citation Standard Practices Manual (Rev 1) 51-10-10 (Original Issue)
  • Maps define areas of potential corrosion for mild, moderate or severe
  • Corrosion severity zones are affected by atmospheric factors.
  • Maps in this section are for guidance for frequency

• CAUTION:
  • Airports that use deicing fluids such as potassium formate must be classified as severe corrosion

• CAUTION:
  • Aircraft operating in any severe corrosion areas are classified as operating in a severe zone
Corrosion Map
Asia

CORROSION SEVERITY LEGEND
- MILD
- MODERATE
- SEVERE
Corrosion Map
Europe & Asia Minor

CORROSION SEVERITY LEGEND
- MILD
- MODERATE
- SEVERE
Corrosion Map
South Pacific
Tire Pressure Maintenance
All Models

- Maintain Proper Tire Pressure
  - Single Most Important Action to Prevent Tire-Related Events
  - Check Tire Pressure Before First Flight of the Day
  - Measure Tire Pressure When Wheel, Tire and Brakes are Cool
  - Use Accurate Gauge When Checking Tire Pressure

- Incorrect Tire Pressure can Result in Abnormal Wear
  - Under Inflation
    - Accelerates Tread Shoulder Wear
    - Elevates Operating Temperature
    - Increased Risk of Shoulder and Sidewall Damage
  - Over Inflation
    - Accelerates Center Tread Wear
    - Reduces Traction
    - More Susceptible to Cutting
Tire Pressure Maintenance
All Models

• Basic Aircraft Tire Pressure Gauge
  • TRONAIR 0-300 PSI Tire Pressure Gauge P/N 14-6806-6011
  • Available from Textron Aviation Parts Distribution
Tire Pressure Maintenance
All Models

• High Tech Tire Pressure Measurement
  • Crane SmartStem Wireless Tire Pressure Measurement System
    STC: P/N KIT83-022001-01 (3-Wheel)
      • STC is Approved on Majority of Citation Models
      • Available at Textron Aviation Service Centers
Correct Nose Tire Importance
All Models

- Install Only Approved Nose and Main Landing Gear Tires Listed in the IPC
  - Approved Nose Tire(s) Also Listed in Limitations Section of AFM
  - Correct Nose Tire is Critical to Performance of Tire on Wet Runways
  - Nose Tire Has Specially Shaped Chine on Sidewall of Tire
  - Chine Serves to Deflect Water Away From Engine Intakes
  - Incorrect Tire Chane Can Result in Engine Water Ingestion
• Difference in TAS displayed numbers CJ3 versus CJ3+

Mach for TAS Calculation:
• The CJ3 uses True/Corrected Mach to derive TAS. The CJ3+ uses Indicated/Uncorrected Mach to derive TAS.
• Both the CJ3 and the CJ3+ display Indicated/Uncorrected Mach in the cockpit. Neither aircraft displays True/Corrected Mach.

RAT and SAT Sources:
• On both CJ3 and CJ3+, RAT displayed in the cockpit is sourced from the engine mounted TT2 probe.
• On both CJ3 and CJ3+, SAT displayed in the cockpit is sourced from the nose mounted 0129G probe.

K-Factors:
• Equivalent Mach-based ram air temperature recovery factors (K-factors) are used as part of the SAT calculation, and therefore the TAS calculation, on both the CJ3 Collins and CJ3+ Garmin systems.

Solution:
• Identified the TAS calculations for G3000 will be updated with next software update.
Wing Tip Deformation
CJ3+

• Issue: Reports of Deformed Wing Tips
  • Not Impact Related
Wing Tip Deformation
CJ3+

- **Status**
  - Currently Being Investigated
  - Deformation is not Considered Safety of Flight
  - Analysis Determined Thinning of Material
  - Confirmed Proper Material is Being Used
  - Asking for Field Feedback:
    - Is it Both Sides?
    - Does it Occur From One Flight or is it a Progression?
    - Buffing Intervals?
    - Buffing Materials?
    - History of Any Issues of Anti-ice?
- Contact Team Structures: csstructures@txtav.com
- Chapter 20 Standard Practices Provides Instructions, However No Limitations on Frequency of Polishing/Buffing
Radiant Power Emergency Standby Battery
All Models

• Issue: Standby Battery Discharge Below 20 Volts Causing Internal Failure
• Status: Vendor Has Developed New Standby Battery
  • CBS28 is Obsolete and Has Been Replaced by CBS28-1
  • CBS28-1 Contains Internal Voltage Monitoring That Prevents Discharging to Less Than 20 Volts
  • CBS28-1EX Exchange Units in Stock
  • Replaced Upon Attrition
G3000 Checklist Option
All Models

• Issue: Operators Request Electronic Checklist
• Status: Checklist on www.txtavsupport.com With Instructions
  • Normal Procedures
  • In Work: Turn on feature during factory build-up. Checklist will be loaded by operator/maintenance after delivery upon request.
Aux Battery & Junction Box Relocation
CJ3+

• Issue: Additional Ballast May be Required for Flights With Little or No Baggage in Aft Baggage Compartment

• Status: Optional SB525B-24-11 Released February 2018
  • Provides Parts and Instructions to Relocate Auxiliary Battery and Junction Box to Adjust Overall Moment of Aircraft During This Condition
  • Affects 525B-0057, -0451 thru -0505, and -0509
  • Accomplished at Owner’s Discretion
Aux Battery Relay Installation
All Models

• Issue: Possibility of Auxiliary Battery Current Limiter Overload During Engine Start

• Status: Service Documents Released
  • Provides Parts and Instructions to Modify DC Power Distribution System to Prevent Current Overload
  • Accomplish at Scheduled Maintenance Period
  • Recommended SB525-24-31R1 Released December 2017
    • Affects 525-0800 thru -0973
  • Recommended SB525B-24-10R1 Released January 2018
    • Affects 525B-0451 thru -0536
Crew Oxygen Mask Leakage
All Models

- Issue: Crew Oxygen Mask P/N 9914771-1 May Leak
- Status: Vendor has Made Improvements
  - Improved PVC Attach Point, Swivel Fitting, Hose Material and Lengthened Wires
  - Vendor P/N 174252-N6, Formerly 174252-96
    - No Change to Textron Aviation Part Number
  - Recommend Unplugging Masks Between Flights
    - All Masks Have a Normal Leak Rate
AOA Probe Fail Message
M2

- Issue: AOA PROBE FAIL CAS Message May Occur During High Cabin Temperatures
- Status: Mod B for P/N C-12406-5 Available Should Message Appear
  - OAT Over 100° F
Cabin Seat Control Cable Routing
CJ3+

• Issue: Seat Control Cable Has Excess Tension That Can Cause Higher Handle Force and Shortened Cable Life

• Status: Discretionary SB525B-25-08 Released June 2018
  • Provides Parts and Instructions to Install a Bracket to the Seat Base That Removes Excess Cable Tension
  • Affects 525B-0451 thru -0504
  • Accomplish at Owners Discretion
Enviro Air Conditioner Motor Fan CJ3+

• Issue: Reports of Fan Assembly on Air Conditioner Motor Failing Prematurely Due to Fatigue Which Causes Motor Overheats

• Status: Enviro Systems Has Developed New Fan P/N 1134608-3
  • Previous Fan Was Stamped 0.030 Aluminum, New Fan is Machined
  • Replaces Fan P/N 1134610-1, which is installed on all CJ3’s
  • Textron Aviation and Enviro Systems are currently investigating on a distribution plan for exchanged motors
  • Fan blade kits to install on field units is still in work
Enviro Air Conditioner Motor Fan CJ3+

Current Fan Blade 1134608-1

New Fan Blade 1134608-3
ATG Software Update
All Models

• Issue: ATG-4000/5000 Software Versions 2.6 and 2.7 Have an Issue That May Prevent the Periodic Polling of Date and Time Data. This Data is Used to Assign a New IP Address.

• Status: Service Documents Released
  • Provides Parts and Instructions to Upgrade ATG Unit to Software Version 2.8 per Gogo Service Document
  • Accomplish at Owners Discretion
  • Optional SL525B-23-05 Released January 2018
    • Affects 525B-0001 and On With Aircell ATG-5000 Installed by Textron
  • Optional SL525-23-12 Released January 2018
    • Affects 525-0001 and On With Aircell ATG-5000 Installed by Textron
Gogo DASH App All Models

- Issue: Gogo DASH App Available for iPhone and iPad

- Status: Check System Status
  - Checked Real-Time
  - Use on the Ground or in the Air
  - Network Availability
  - Gogo Text and Talk
  - Gogo Vision
  - Gogo OnePhone
  - Coverage Maps
Glide Ratio

• Issue
  • Requesting glide ratio data

• Status
  • Glide ratio based on;
    • Both engines shutdown & windmilling
    • Maximum Glide Airspeed
    • Clean configuration
    • Factory options only
    • Zero wind

<table>
<thead>
<tr>
<th>Aircraft Model</th>
<th>Glide Ratio</th>
<th>NM/1000'</th>
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<tbody>
<tr>
<td>510</td>
<td>12.2 : 1</td>
<td>2.0</td>
</tr>
<tr>
<td>525</td>
<td>12.6 : 1</td>
<td>2.0</td>
</tr>
<tr>
<td>525B</td>
<td>12.7 : 1</td>
<td>2.0</td>
</tr>
<tr>
<td>525C</td>
<td>11.0 : 1</td>
<td>1.8</td>
</tr>
<tr>
<td>560 (Ultra)</td>
<td>13.4 : 1</td>
<td>2.2</td>
</tr>
<tr>
<td>560 (Encore/Encore+)</td>
<td>13.6 : 1</td>
<td>2.2</td>
</tr>
<tr>
<td>560 XLS+</td>
<td>12.8 : 1</td>
<td>2.1</td>
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<tr>
<td>680+</td>
<td>14.6 : 1</td>
<td>2.4</td>
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<td>680A</td>
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<td>750</td>
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<tr>
<td>750+</td>
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<td>2.0</td>
</tr>
<tr>
<td>Grob G103a Sailplane</td>
<td>36.5 : 1</td>
<td>6.0</td>
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<tr>
<td>NA X-15 &amp; Space Shuttle</td>
<td>4.5 : 1</td>
<td>0.74</td>
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</tbody>
</table>

Company Private
Fuel Cap Screw Corrosion
All Models

• Issue: Reports of Corrosion on Fuel Cap Screw Heads

• Status: Do Not Buff or Scratch Screws When Possible
  • Screws are Nickel Plated Steel
Tail/Cross Wind Start Limitation
All Models

• Issue: Tailpipe Fire When Attempting Engine Start With Tailwind or Crosswind Greater Than AFM Limitation
  • Has Caused Damage to Pylon and Tailcone Skin

• Status:
  • Adhere to Tailwind/Crosswind Limitation Listed in AFM
  • Textron Aviation Added Notes to AFM Cautioning Operators of Dangers When Starting Beyond Limits
Troubleshooting ECS Annunciations  
All Models

• Issue: Troubleshooting Engine Control System Faults Require Tooling
• Status:
  • FADEC EMT Kit Available P/N TL-221207
    • Fits All FADEC Controlled FJ44-Series Engines
    • Includes EMT Communication Cable and Quatech Serial Port Adapter
    • EMT Basic Computer Software Available on Williams International Website for Free
Engine Oil Filter Kits
All Models

• Issue: Williams International Only Approved Laboratory for Oil Filter Analysis

• Status:
  • Oil Filter Kit Available
    • Fits All FJ44-Series Engines
    • Includes New Filter, O-rings, Sample Canister
    • P/N 120241
Engine Inlet and Exhaust Covers
All Models

- Issue: Snow/Ice/Water/FOD Buildup in Engines
- Status: Engine Inlet/Exhaust Covers Offered
  - M2 P/N WP10883
  - CJ3 P/N WP10886
Pitot Probe Covers
All Models

- Issue: FOD May Buildup in Pitot Probes
- Status: Use Plastic or Nonfraying Covers Only
  - Covers That Fray May Introduce FOD Into Pitot System (see next slide for example of what NOT to use)
  - Pitot Probe Covers Offered
    - WP81338-4
    - WP102406-1
    - CJMD110-001
Engine Driven Hydraulic Pump
All Models

• Issue: Reports of HYD LOW FLOW Message
• Status: Engineering and Vendor Investigating Issue
  • Inspect Filters, Flush System and Replace Pump(s) if Debris Found
  • Contact Team 525 for Flushing Assistance
ProOwnership
All Models

• Issue: Some Operators Could Benefit From a Maintenance Manager

• Status:
  • Developed in Response to Operators Needing a DOM
  • No Cost Service to Manage Maintenance Schedule
  • ProMaintenance Director of Maintenance Manages Your Aircraft
    • Coordinates Factory-Direct Service
    • CAMP, SB’s, Warranty
    • ProOwnership@txtav.com
Webinars
Q4 2018 Light Jet

REGISTER

• All model webinars scheduled:
  • 525 Series: Wednesday, November 7th, 10:00 CST
    • 90 minutes
  • www.txtavsupport.com Full Webinar Schedule Details
Billing & Invoice Accuracy

CJP Annual Convention

October 2018
We Heard You

• “Almost no bill from the service center is correct…”
• “I’ve had to spend weeks straightening out errors and confusion.”
• “Every bill requires some correction…”
• “Warranty work is often charged to programs…”
• “Even the customer portal doesn’t help.”
• “Still outstanding claims from January…”
• “In dispute from February…”
• “Their billing practice sucks to put it mildly.”
Ease of Doing Business

Same Day Invoicing – clear, timely, and accurate

Reduce the number of customer disputes

Reduce the cycle time for dispute resolution
Project Activities

✓ Cross-functional team (10 areas involved)
✓ Current state process maps
✓ Identified gaps and improvement opportunities

☐ Identify robust solutions to gaps/opportunities (Q4 2018)
  ▪ Solicit customer feedback before deployment

☐ Develop and execute an action plan (Q4 2018 start)
Project Scope: Pre-Arrival

- Aftermarket Sales Proposals & PDCs
  - Clarity on terms and customer expectations

- Deposits
  - Improved tracking system

- Scheduling & Pre-Buys
  - Visibility of customer account info, coverage, and customer transfers
Project Scope: Mx Visit

Mx Events: scheduled, drop-ins, MSUs
- Visibility to warranty/programs coverage

Quotes/Estimates during Mx events
- Simplified process, consistent execution

Invoices
- Accurate, timely, master data integrity, program $$ value at line item level

Progressive Payments
- Process and improved tracking system

SAP & Lawson Design/Performance
- Automation, speed, integration

Warranty Claims
- Timely processing

Credit Cards / Checks
- Timely processing

Fuel Payment Process
- Timely processing
Project Scope: Post Mx Visit

Customer Account Statements
Clear, drill down on portal, program balances

Fuel Payment Process
Timely processing, no duplicate billings

Technical Publications Billing
No duplicate billings, on customer portal

Customer Portal / eBilling
Program balances, drill down to invoices, sort by type, link all accounts to one

Warranty Claims / Adjudication
Timely and accurate processing

Program & Warranty Administration
Accurate billing

Parts: Exchange, Mods, Returns
Improved visibility and processes

Dispute Process
Reduced cycle time
What to Expect Next

**Phase 1 (3 - 6 months)**
- Process Changes / Standard Work / Metrics
- Customer Portal Enhancements
- Salesforce Enhancements
- Communication & Training

**Phase 2 (6 - 12 months)**
- System Enhancements – SAP / eBilling

**Phase 3 (12+ months)**
- Improved Systems Integration
Thank You

QUESTIONS