
Flight Operations Engineering

Flight Technical Support

Aircraft/Engine Systems and Performance

Aircraft Performance. Airplane aerodynamics, lift, High/Low Speed Drag calculation and modeling etc.

Engine Performance. Installed/Uninstalled Generalized Engine Performance, Bleed Status, Operating Limitations and Thrust Management Control rules. Data manipulation and modeling.

Operating Gross Weights (OGW). Perform Airport Obstruction Analyses. Develop methods to automate AFM Takeoff/Landing OGW, 1st, 2nd and 3rd Segment, Max/Reduced Thrust, V_{speeds} , Brake Energy and adjustments. Weight & Balance data.

Payload Optimization. Develop Turn Procedures in accordance with FAA Terminal Entrance Procedures (TERPs), encoding per ARINC 424-13 and RNP Specifications. Develop aircraft performance data in accordance with government regulations and OEM.

Flight Mission Analysis. Evaluate Route, Reliability and Operating Practices using basic Turbine Engine Life Prediction, Material Behavior and Stress Analysis methods.

Economic Trade & Productivity Improvement Studies. Detailed studies of flight time, fuel, distance, payload/range and operational limitations. Fuel Conservation and optimum cruise control data analysis.

CFR's §§ 21, 25, 33, 36, 91, 135 and 121

CFR's exegesis, knowledgeable of Operating Specification, Flight Certification, AFM, AD Notes, Community Noise and Emissions issues. Prepare documents for statutory and regulatory compliance.

Analysis Methods

Conceive and develop complex analytical models to evaluate optimum operating procedures commensurate with Safety, Cost, Performance Guarantees and operational requirements.

Technical Data & Resource References

Analysis and implementation methods commensurate with Operating Specification, regulatory authorities and the following references:

- *Boeing Jet Transport Performance Methods (D6-1420)*
- *Performance Engineer's Manual (PEM)*
- *FAA Airplane Flight Manual (AFM)*
- *Boeing Laptop Tool (BLT)*
- *Operations Manual (OM)*
- *Flight Planning & Cruise Control Manual (FPCCM)*
- *Maintenance & Overhaul Manuals (MM/HM/OV)*
- *Master Minimum Equipment List (MMEL)*
- *Configuration Deviation Dispatch List (CDDL)*
- *Systems Approach to Flight Operations Training (SAFOT)*
- *Flight Operations Manual (FOM)*
- *Standard Computerized Airplane Performance (SCAP)*

Accident/Incident Reviews

Provide technical support to NTSB & International Investigation Boards / Aircraft Accident/Incident Investigation and Prevention, Flight Operations Quality Assurance (FOQA) campaigns. CVR/DFDR Transcription, data reduction (ADRAS s/w) and analysis. Ground Track, Weather data, ATC Transcripts, Flight Crew Interview/Testimony analysis etc. and publishing factual reports.

Flight Technical and Training Support

Author and edit Flight Handbook; Checklists, Takeoff, Climb Cruise & Landing, Normal, Irregular and Emergency operating procedures and data. Training and Reference (T&R): systems, subsystems and subfleet differences. Bulletins. Provide assistance and/or classroom instruction (for pilots, dispatchers etc.), training tools or aircraft performance articles.

Special Projects

- Marketing and Special Flight Operations Mission Requests (i. e. charters/CRAF):
- Flight Simulator. Fidelity Enhancement
- Ferry Operations. procedures for safe efficient movement of aircraft with damage, missing parts, inoperative engines or systems.
- Flight Test. Data acquisition, reduction and analysis.
- Performance Guarantees and Audits
- New Aircraft Acquisition, Initial Service Evaluations, FAA Proving Runs
- Reliability Centered Maintenance (RCM) Procedure Development (MSG-3 Analysis)
- Turn Around Fault Isolation (TAFI). Logic and procedure development.

Aircraft/Engine Condition Monitoring

Implement and maintain effective Reduced/Flex Takeoff/Climb Thrust program. Periodic Takeoff Power Assurance Check procedures, Engine Condition Monitoring (ECM), troubleshooting, diagnostics and corrective action.

Analog-to-Digital Data Conversion

Need to convert analog graphic aircraft or engine performance data to digital? Our proprietary software calibrates digitizer to specimen, corrects for specimen misalignment, captures points directly into *Microsoft Excel*, expressed in proper engineering units and *Interpolation Modules* provide dynamic functionality.

Engineering Program Management

- Project Administration
- Schedule Management
- Cost/Resource Management
- Subcontractor Management
- Technical Coordination Meetings (TCM's)
- Preliminary & Critical Design Reviews (PDR/CDR)
- Information Management
- Project Status Reports (PSR's)
- Impeccable Documentation Management and Control

Computers & Site Synchronization

Computer systems are IMB-PC Pentium processor, *Microsoft Windows XP* operating system and *Microsoft Office Pro 2003* software suite. Capable of appropriate site synchronization for information and data exchange.

Who are we?

WingNotes™ is a privately owned small engineering consulting and publishing business not open to the public for investment purposes and sole-proprietorship operated by Bruce W. Dawson, a retired U. S. Army combat aviator and aerospace engineer. The **WingNotes™** trade name is registered in the state of Arizona, with *Dunn & Bradstreet* and *Central Contractor's Registry (CCR)* database. Approved *Military Critical Technical Data Agreement* on file. **WingNotes.com** domain name is registered with and hosted by *GoDaddy.com*. Objectives are to provide:

WingNotes™ Consultation Services

- ✓ *Flight Operations Engineering*
- ✓ *Aircraft Performance Engineering*
- ✓ *Propulsion Engineering*
- ✓ *Reliability & Safety Engineering*
- ✓ *Engineering Program Management, and*
- ✓ *Analog-to-Digital Graphic Data Conversion*

WingNotes™ Publications

- ✓ Non-fiction trade publications for Professional Military Aviators who fly,
- ✓ Military Aircraft (or commercially designated equivalent)

Airworthiness & Certification Solutions. Turning a sea of data, into data you can see.



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