



# Citation Programs

State of the Art Technology on a  
proven airframe

# Program Overview



Sierra Industries has for the last 17 years been developing and acquiring FAA approved modifications to the Cessna Citation 500 series (model 500, 501SP, 550, 551, S550 and 560). With the sale of these programs to Garrett recently, we are the dominant leader in this technology with more approvals than anyone in the world. Garrett, will be known throughout the industry for their quality Citation modifications which enhance the performance, utility and safety of the basic aircraft.



## Citation STC's held by Garrett

Garrett Aviation Services purchased **69** multiple use STC's for the Cessna Citation series aircraft from Sierra. Most notable are the approvals for the retrofit of the Williams International FJ44-2A engines, the Eagle and Longwing Modifications, installation of a Cargo / Ambulance Door and Interiors and the aft cabin extended range fuel tank.





## STC Applicability

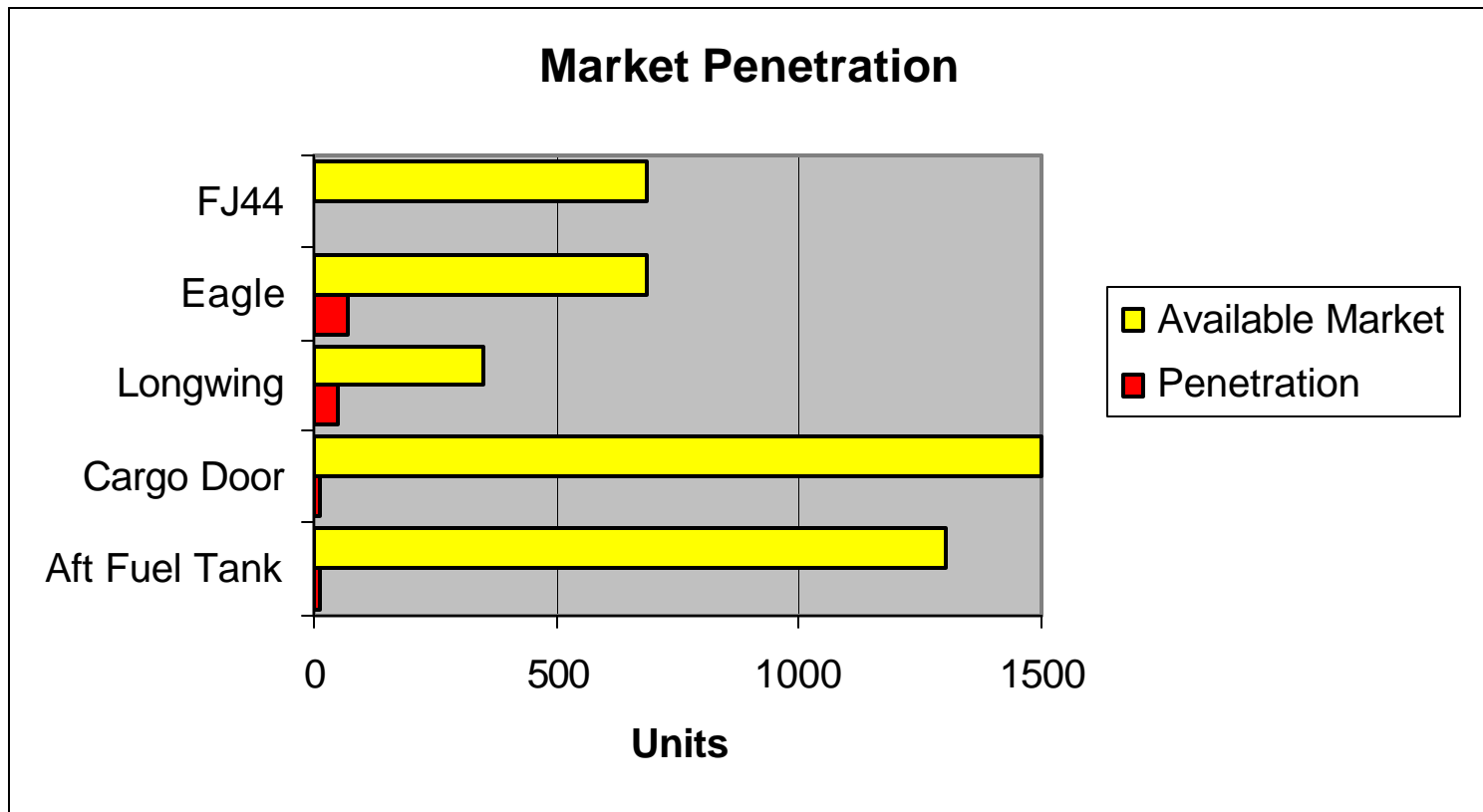
The list of STC's cover all versions of the straight wing Citation from the earliest Model 500 to the Citation V Ultra Model 560. Within this group of aircraft are more than 2100 aircraft which can be modified with one of Garrett's enhancements. The specific Models and serial production includes:

Citation Model 500	350 units
Citation Model 501SP	339 units
Citation Model 550/551	734 units
Citation Model S550	160 units
Citation Model 560	547 units



# Existing Market Penetration

While Sierra has been successful penetrating the available market of Citations with its modification programs there still exists a very large and untapped fleet of aircraft for conversion.





## Additional Products for the Citation

In addition to those products holding FAA STC approvals, we now have a large offering of upgrades which enjoy tremendous popularity among the Citation owners. Here is a partial list of these improvements:

- ***3 Place Aft Divan***
- ***2 Place Forward Barrel Sofa***
- ***1 Piece Modern Armrest***
- ***Crew restraint systems***
- ***Exterior Tubular Locksets***
- ***SierraCom Maintenance Tracking Programs***







## *Incredible Performance From Start to Finish!*

By combining the proven airframe of the Cessna Citation, the technology and performance of the new Williams FJ44-2 powerplants, and GARRETT's ingenuity, and history for improving the Citations capabilities - we have created the best combination of speed and efficiency available today in any business jet.

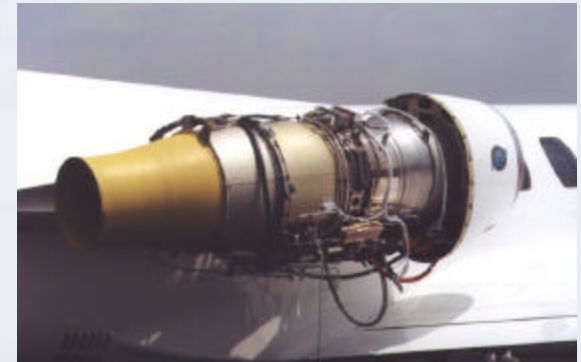




# Timeline of Development



- Design & Concept Development -  
January 1999
- Engines Mounted -  
June 2000
- First Ground Runs -  
August 2000
- First Test Flight -  
September 2000
- STC Certification –  
March 2002



***Stunning Performance  
From Start to Finish!***

# FJ44 EAGLE II - HIGHLIGHTS

- Cruise Thrust: 35% more thrust at 41,000 ft.
- Maximum Altitude: Certification to 43,000 ft.
- Time to Climb: Less than 20 minutes to 41,000 ft.
- Economy: Fuel consumption reduced by as much as 40%
- Range: Over 2000 nautical miles
- Top Speed to date: 409 knots



# Model Applicability

- At present the STC covers Cessna Citation Model 501SP, These aircraft were built from 1977 to 1984 of which 339 aircraft were produced.
- Soon we will receive approval for the Model 500 aircraft as well which were built from 1972 to 1976. There were 350 units produced during this time.



# Williams/Rolls FJ44-2A Engines

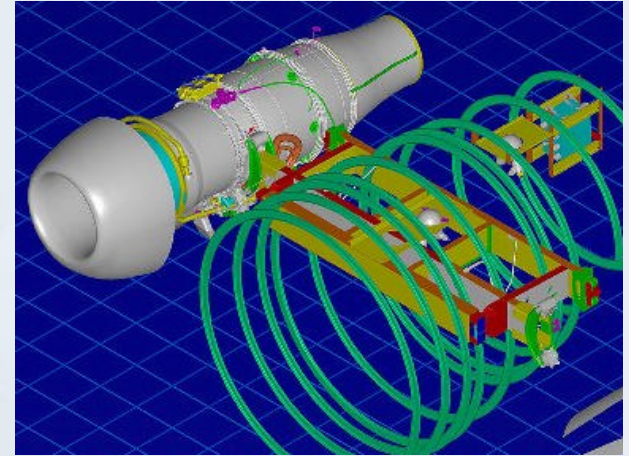


- Considerably lighter than the P&W JT15D-1A
- Dramatically reduced residual thrust due to EEC
- Up to 35% improvement in thrust.
- Lower Maintenance Costs
- Engine Maintenance Program (TAP) available from Williams

Williams/Roll's newest business fanjet engine employs third generation wide sweep fan technology to attain cruise performance that is competitive with much larger and more expensive business jets. Minimal weight, compact size and outstanding efficiency are hallmarks of this sophisticated computer designed engine and allow it to retain the low operating and acquisition cost normally associated with turboprop aircraft.

# Elements of the Mod

- Installation of the FJ44-2A engines
- Structural modifications to the engine mount structure to accommodate engines and increased power
- Addition of the Eagle Modification
- Change of the engine instrumentation
- Modifications to the engine nacelles for reduced vibration and noise
- Addition of Electronic Engine Controls (EEC)
- Changes to the Master Switch Panel



# Benefits of the FJ44 Eagle II

- More Power for takeoff, climb and cruise
- Higher gross weight – 12,500# MTOGW vs 11,850# before
- More fuel – 4,510# vs 3,870# before
- Quieter and smoother engines
- Significantly reduced power management
- No asymmetric synchronization issues
- TAP Program option
- Modern technology engines – efficiency, maintainability and reliability enhanced





# Eagle Mod

- Applicable to all Model 500's and 501SP's
- Airfoil change from wingroot to mid-span
- Increased fuel capacity – 4,510# total
- Increased Gross Weight – 12,650 ramp and 12,500 max takeoff
- Better efficiency from new airfoil





# Longwing Mod

- Applicable to Model 500's  
Serials 500-0001 to 500-0350
- 39 inches additional span  
increase
- Increased fuel capacity on pre-  
0214 s/n's
- Reduced field requirements  
and stall speeds, faster climb,  
higher cruise altitude, better  
cruise speeds and longer  
range.
- Single Pilot authorization  
included
- Higher gross weight – 12,650  
ramp and 12,500 takeoff

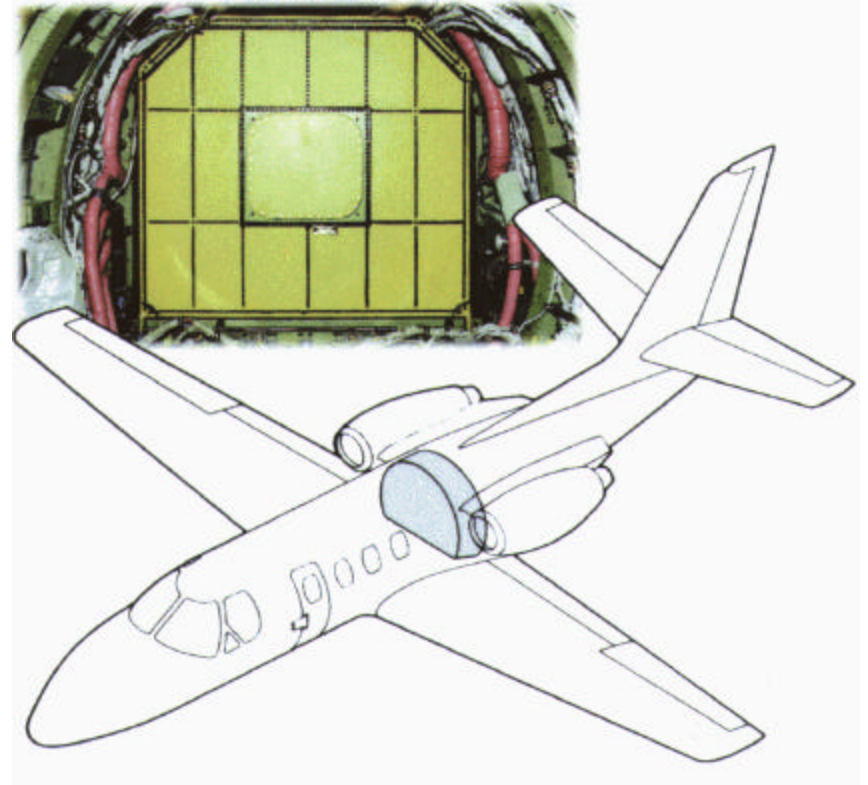






# Aft Cabin Fuel Tank

- Applicable to all 500 series – 500, 501SP, 550, 551SP, S550 and 560
- Installed in cabin against aft pressure bulkhead – approximately 24 inches deep
- 100 gallons additional fuel
- Transfers to and from left wing



# Cargo / Ambulance Door

- Applicable to all 500 series – 500, 501SP, 550, 551SP, S550 and 560
- Increases door width from 22” to 36”
- Same design as original





# Programs in Development

Garrett has a number of programs in development for the Cessna Citation series that will increase the product offering. These products can be brought to market for relatively little expense by capitalizing on the existing certifications. These include but are not limited to:

- ***Meggitt engine instrumentation packages***
- ***Completely new interior shell***
- ***Model 500 FJ44 Eagle II approval***
- ***FJ44 Eagle II Flight Manual Expansion Program***
- ***FJ44 Engines on Straight Citation – sans Eagle***
- ***Citation Super II re-engining program***

