

THE D-JET FLYER

ISSUE 6, JULY 2009



D-JET S/N 003 climbing out from San Angelo's runway 18

In this issue:
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Customer Profile and more

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Flying through Turbulence

Welcome to the 6th issue of the *D-JET Flyer*. The last year has been very challenging for our industry. All general aviation manufacturers have reduced their workforce, cut production rates, and downgraded forecasts in response to global economic conditions. Even industry powerhouses, such as Cessna, have announced program delays or even the suspension of new developments.

For Diamond, the challenges of 2008 first started in April with the insolvency of our engine supplier Thielert Aircraft Engines (TAE). With the supply of engines for more than 60% of our planned 2008 production gone, we had to focus significant company resources on derivatives of our diesel powered aircraft as well as the certification of the 170 hp Austro Engine AE300 powerplant. In October, with the Austro Engine AE300 and DA42 NextGen nearing completion, the economic downturn put further strain on our company, ultimately necessitating an adjustment of spending and schedule for the capital-intensive development of the D-JET.

Despite the apparent industry doom and gloom, Diamond has achieved some very positive results. In less than one year since the TAE insolvency, the all-new 170 hp Austro Engine AE300 turbo-diesel piston engine received certification, as did our next generation turbo-diesel twin, the DA42NG. In parallel, the Ontario facility developed and certified the Lycoming powered version of the DA42 with deliveries starting in August. Best of all for existing DA42 owners, is that Diamond has also designed the retrofit kits for both engine types to be installed in the earlier airframes. On the sales front, Diamond has enjoyed good success, considering the market, especially with regard to export sales and factory-direct fleet orders for the US Air Force Academy, CAE / Sabena, CAE, Massey University, Embry Riddle University, LeTourneau University, Utah State University and others. Although the retail market remains fairly flat, those individuals who are capable of purchasing now, are taking advantage of the best deals in recent history, and we have seen a corresponding modest increase in retail interest.

Although the D-JET schedule has needed to be adjusted, there are also significant benefits associated with this. The new Williams FJ33-5A turboprop simply makes the D-JET a better airplane, and significant progress continues to be made in all areas, including the ice protection system, landing gear, various systems, avionics and structures, as well as in the production infrastructure and certification. You will find a program update on page 3.

Despite the schedule setback, the D-JET continues to be best positioned to succeed in the owner-flown personal jet market. Several competitors are no longer in operation; those that remain, trail significantly behind the level of development and maturity of the D-JET program. Besides the first-to-market advantage, we remain convinced that the D-JET's combination of performance, features, capability, comfort, value and ease of use make it the leader in this market segment. With the announced price increase, current position holders have the benefit of instant equity, as well as early delivery.

In addition to the program update, we are also releasing in this issue of the *D-JET Flyer* much anticipated preliminary performance data based on actual flight tests of our prototypes. You'll get familiar with the D-JET's ice protection system, learn about ATP's D-JET flight training plans, meet some of our customers, and get some answers regarding bird strike protection. We also pay tribute to one of aviation's greats, Dr. Sam Williams, a true pioneer, visionary, and the real father of the modern "VLJ".

As always, we value your comments and questions.

This issue of the *D-JET Flyer* has much to offer and I sincerely hope you enjoy reading it.

Peter Maurer
President



D-JET Program Update

Since our last *D-JET Flyer*, Diamond has made great progress on the program, but we also have faced some rare market challenges that have led to program schedule adjustments.

Background

Given recent economic challenges, Diamond, like any other manufacturer with long-term ambitions, has had to take steps to maintain its financial health. This required restrained cash outflows for the D-JET program at a time when, under normal circumstances, the program would be entering a higher-spend rate phase. Diamond felt this fiscally responsible action was needed to support the company's long term financial strength and to ensure the D-JET's successful entry into service.

D-JET Program

Generally, program progress has been very good, though admittedly lagging the desired schedule. Serial number 002 and 003 flew regularly from our temporary winter flight test facility in Texas, returning to London in April and continuing to fly here. A full-scale pressure test of the fuselage pressure vessel was successfully completed. We also have made several significant design changes in the interest of producing the best possible aircraft for our customers and their operations.

New Williams Engine. We are very satisfied with the decision to move from the FJ33-15 to the FJ33-5A, for its improved fuel efficiency, higher thrust, improved bleed air handling, and category-leading 4,000-hour TBO. One benefit of the new schedule: it allows incorporation of the very latest technical innovations and improvements being pioneered on the FJ44-4 (CJ 4+) and then applied to the FJ33-5A.

De-ice System. With increasingly restrictive regulatory requirements for FIKI (flight into known ice certification), system requirements for D-JET airframe ice protection also became more stringent. Although the fluid-based TKS ice protection system works well on aircraft like our DA42, the higher fluid flow rates and higher coverage areas required by the faster D-JET, would have required a comparatively high volume of fluid resulting in an all-up system weight exceeding 200 lbs. We considered this weight penalty a "non-starter" and switched to a conventional, lighter weight pneumatic "boot" de-ice system that also will be less expensive to operate.

Landing Gear. Mecaer, our supplier for the production landing gear, has done an outstanding job delivering the first flight-worthy landing gear set, in only eight months. The original hydraulically-actuated gear design has been replaced with an electrically actuated system that significantly decreases system weight and increases reliability. Certification drop tests were completed recently.

New D-JET Pricing

When Diamond announced in March 2008 plans to use the more powerful Williams engine, we also announced a pending price increase. Effective August 1, 2009, the D-JET's price will be increased to \$1.89 million, in March 2009 US Dollars, for new orders. This is an increase of approximately 25%.

Pricing terms for current position holders remain unchanged. Current customers taking delivery under earlier pricing terms will thus own an asset with a fair market value that can reasonably be expected to be higher than their price paid. New customers taking delivery under the new pricing terms will own an aircraft priced relative to its value and one that – as with other Diamond models – will provide the best combination of total cost of ownership and safety in general aviation.

Looking Ahead

Regrettably, the main impact is delayed delivery, especially for early position holders, though there are positive aspects related to the schedule change. More time allows us to present an even more mature aircraft, incorporating technology and features that otherwise would not have been available initially. The D-JET with the FJ33-5A engine has the potential for later optional upgrade, once the full thrust potential of the engine is made available, further enhancing aircraft value and utility.

With major competitors no longer contending and delayed introductions of jets from other firms, Diamond maintains the market introduction lead in this aircraft class. Diamond is a mature and leading GA manufacturer with established infrastructure, existing production approvals and a long history of bringing its projects to market. We continue to invest and innovate across our product line, despite the current economy, as we prepare for market recovery. And we are taking necessary precautionary steps to ensure long term viability and the best possible aircraft, which, we hope you will agree, is in the mutual interest of Diamond Aircraft and our customers.



Tech Close-up: Ice Protection System

The D-JET is being certified for Flight Into Known Icing, also referred to as “FIKI”. Many aircraft have what is referred to as a “no-hazard ice protection system” that are typically sold as being “just as good as FIKI certification but without the official paperwork”. Nothing could be further from the truth. A FIKI certification involves demonstration of the ability to safely operate in icing conditions of specified severity, whereas a “no-hazard system” simply means that it does not adversely affect the operation of the aircraft under normal operation. For FIKI certification, a lot of engineering, analysis and testing in actual icing conditions is required. Performance data is established for the aircraft encumbered with ice on its unprotected areas, the ability to protect the leading edges from ice is demonstrated, the continued safe operation of the powerplant is demonstrated and even the ability to maintain adequate visibility is evaluated. On top of that, the reliability of the system, including effects of individual component failures, needs to be verified and redundancy designed into the system. For commercial operations, FIKI is typically mandatory for take off when en route icing conditions are forecast. Although not mandatory for personal flights, FIKI certification does offer the best all around operations, the highest degree of safety and peace of mind, if icing is encountered.

The D-JET ice protection system consists of pneumatic de-ice boots for the wing, as well as for the horizontal and vertical stabilizer leading edges; electrical anti-ice for the windshield and air data probes; and bleed air anti-ice for the engine inlet system. The term “de-ice” means that ice is removed after forming and “anti-ice” means that the ice is not allowed to form. Let’s take a closer look at each of these systems.

Wing and Stabilizer Ice Protection

The D-JET wing and stabilizer ice protection system consists of pneumatic neoprene inflatable de-icer boots, popular for this category of aircraft due to their efficiency, weight, and use of proven technology. There are de-icer boots on the wing leading edge, on each horizontal stabilizer leading edge, and on the vertical stabilizer.

The wing and stabilizer de-icing system is designed to operate on a one-minute cycle. During each cycle, each

boot is inflated and then deflated. During a de-ice cycle, the left and right wing boots inflate first simultaneously, then the vertical and horizontal stabilizer boots inflate simultaneously. Inflation is accomplished via pressurized air from the engine that is cooled and dried, then routed through check valves, a filter, and a pressure regulator / relief valve. The regulated air is then routed through an ejector flow control valve to the boots. After inflation, the pressurized boots are then deflated by the ejector flow control valve vacuum setting, allowing the boots to conform to the wing profile during times of non-operation. A timer controls the sequencing of the ejector flow control valves and the duration of the pulses while pressure sensors monitor the system for correct operation. The pneumatic ice protection system is activated by the pilot via a dedicated switch on the ice protection switch panel, which is just forward of the throttle and flap controls. Following pilot activation, the system controls and monitors inflation and deflation automatically.

De-ice Boot Location

Diamond had initially explored using a TKS “weeping wing” for the D-JET’s wing, as well as vertical and horizontal stabilizers, though concluded after extensive investigation that inflatable boots would be the most appropriate technology choice for the D-JET.



D-JET de-ice boot locations.

Ice Inspection Light

An ice inspection light, located on the left (pilot) side of the aircraft illuminates the left wing leading edge to help the pilot detect ice build up at night. This light is controlled by a switch on the ice protection switch panel.



Windshield

The anti-ice windshield system consists of a heating element that is sandwiched between the layers of the acrylic windshield. This electric heating element's 28-volt dc power is regulated by a controller to maintain a windshield temperature well above freezing during operation. Temperature sensors on each windshield control the temperature of the windshield and prevent overheating. When the windshield anti-ice is activated by the pilot, the heating elements are automatically controlled to a temperature limit to prevent ice build up. The windshield heat switch is located on the ice protection switch panel.

Air Data System

The air data system consists of dual pitot tubes, dual angle of attack (AOA) probes, and dual static port assemblies, each having three separate static ports (six total static ports). All probes and ports are heated by 28-volt dc self-regulating electric heating elements. Unlike the other parts of the ice protection systems, which are typically activated in icing conditions, these devices are typically used anytime there is visible moisture. Control for these devices is via a single switch on the center switch panel.

Engine Induction System

Unlike conventional twin-engine aircraft, the D-JET's center mounted engine requires two inlets on each side of the

aircraft, which converge at the engine fan case at the center of the aircraft just aft of the aft pressure bulkhead. This unique design requires not only ice protection of the inlet "lips", but also ice protection of the inside of the duct where ice might accumulate. Properly referred to as a "bifurcated" inlet, we simply call this inlet system the "Y-duct", due to its distinctive shape.

Very hot compressor bleed air passes through an engine-mounted bleed air pre-cooler to reduce the temperature to manageable but still hot temperatures. The temperature of this bleed air is automatically regulated based on flight condition and cabin heating requirements. Part of this hot air is directed to the inlet lips, heating them to prevent freezing, while another part flows through the double walled sections of the Y-duct, to keep the inner duct surface free of ice.

Summary

The D-JET ice protection system will provide the owner/operator state-of-the-art ice protection, with ease of use, high reliability and demonstrated performance. Every D-JET aircraft will be equipped with this ice protection system as standard equipment. Although FIKI certification is not a prerequisite for aircraft certification, Diamond's goal is to complete the FIKI certification prior to first delivery.



First production certification air inlet duct, for S/N 004.



Dr. Sam Williams 1921–2009

Power plant innovation has long been a catalyst for aircraft innovation. This certainly has been the case with the small turboprop engine spurring on the personal jet / very light jet. Dr. Sam Williams, founder and chairman of Williams International, manufacturer of the D-JET's FJ33-5A engine, was the chief visionary for the small turboprop engine and a tireless advocate for and father of the personal jet/VLJ.

Dr. Williams passed away in June 2009 at age 88, leaving behind a successful company and a truly rare, inspiring legacy of achievement recognized even beyond the civil and military aviation community. He was awarded the Collier Trophy in 1979, the Wright Brothers Memorial Trophy in 1988 and the National Medal of Technology in 1995. He also was inducted into the National Aviation Hall of Fame in 1998 and the Inventors Hall of Fame in 2003. The company he founded in 1954 has been very capably run by his son, Gregg Williams, since 1998, who has now assumed the role of chairman in addition to his ongoing role as president and CEO.

Diamond salutes Dr. Williams, his organization, and his family. We value the ongoing partnership and collaboration with Williams International in bringing to market a most attainable, comfortable, safe personal jet that is powered by a small, powerful turboprop bearing the name of this intrepid industry pioneer.

Customer Close-up: David Basha

Mr. Basha is owner of the Carriage Automotive Group (Nissan, Mitsubishi and Kia) in the North Metro-Atlanta area, and is a former General Motors Service Engineer who was once recognized as the world's best automotive technician. What began as a hobby working on cars as a teenager became a fascinating, life-long automobile industry career for Mr. Basha. After earning his mechanical engineering degree and winning the unique world's best distinction, he worked at GM for many years, including at GM's Proving Ground, in Milford Michigan. Mr. Basha applies his knowledge of



David Basha, D-JET position-holder from Gainesville, Georgia, with his daughters Carolina and Cristina.

Pilot Profile

Occupation	Owner, Carriage Automotive Group
Residence	Buford, GA (near Atlanta)
Original flying motivation	The sudden passing of my father, Roger
Personal aviation hero	My CFI Paul Nicholas – he taught me how to fly!
Current aircraft	Conquest 1 turboprop twin
Aircraft location	Gainesville, GA
Pilot experience	750 hrs total, with commercial & instrument ratings
Typical flying	Both business and personal
Typical flying companions	Family members or employees
Favorite flight	North Carolina beach house
Dream D-JET flight destination	Bahamas
Unusual indicator of aviation passion	Owens and "flies" a professional flight sim in dedicated lower level area of his home
Ultimate aviation dream	Own and fly a D-JET personal jet

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performance and technical detail, along with a passion to learn and grow every day, to his flying. He chose the D-JET as the culmination of a major personal goal.

Why Fly?

"I am what you may consider a late-starter in aviation, having earned my pilot's license about five years ago in my mid-40s. From the beginning, I set a goal to own and fly a personal jet. Working toward this goal has influenced the kinds of airplanes I have flown and fly even today. I have about 750 hours total flying time – most of this in twins – and though I stay very busy, I now fly about 50-75 hours a year. I learned to fly in a Piper Arrow, and then owned a Beechcraft Bonanza, followed by a Cessna 421C piston twin engine. Today, I own and fly a Conquest 1 turboprop twin. I chose this progression of aircraft in consultation with my insurance provider and others, because I felt this would prepare me very well to be able to fly a personal jet."

"I started flying shortly after the unexpected death of my father, Roger Basha. That kind of event causes you to take stock of your life and look at your priorities. One of my priorities was to begin to live fully every day and to challenge myself in learning something new. I had always loved aviation and had always had a strong technical orientation so learning to fly became a natural goal for me. From the moment I got into an airplane for my intro demo flight, I loved it. There is nothing like flying an airplane, the sense of freedom associated with it and the daily opportunity to learn and grow."

"I've earned my commercial license and instrument rating. And I'm accumulating good flight time in turbine aircraft. Most of my flying is business-related flying, over distances of about 500 miles. In addition, we fly regularly between our home in the Atlanta area and our second home on the North Carolina coast. I also fly regularly to Michigan, Texas, Louisiana, and down to Miami. Usually, my wife, son and two daughters accompany me, and they have become enthusiastic flyers in their own right, too."

Why the D-JET?

"I had followed various personal and VLJ development programs in search of a safe and economical jet. When I heard about the first flight of Diamond's D-JET proof-of-concept,



The D-JET's Garmin G1000 glass cockpit.

I became very interested in the D-JET. After researching it further, I placed my order for one. I felt Diamond was really on the right track with their concept of a single-engine jet, and considering that now other airplane companies are working on their own single-engine jets, I feel even stronger that Diamond was and is really onto something with the D-JET."

"In many respects, the D-JET will be easier to fly than the airplanes I have been flying. For example, my Conquest doesn't have a FADEC so I expect the D-JET will have simpler engine operation. I am excited about moving to the G1000 glass cockpit, as I think it will provide a great learning opportunity for me and will be a system that will contribute to better overall safety. And even though my current airplane can fly to 30,000 feet, I'm satisfied that the D-JET has a 25,000-foot ceiling since the majority of my flying takes place in the low twenty flight levels. There are so many potential dangers at higher altitudes, which affects training, insurance costs and other factors. Frankly, 41,000 feet is unrealistic for most purposes. The FL250 ceiling will meet 100% of my mission needs so this is just another smart move on Diamond's part with the D-JET."

Why Diamond?

"I went with Diamond first because of the D-JET and second, because I felt confident they would be able to bring this airplane to market and do a good job with it. Diamond has established a good track record of certifying airplanes that are safe and fun to fly. The people at Diamond – from Peter Maurer to the Premier dealer people – have been very good to work with. Taking to the sky in a D-JET is the culmination of my goal."



D-JET Performance

D-JET performance is on track to meet or exceed Diamond's commitments, based on demonstrated flight test experience. The aircraft has achieved the 315 ktas maximum cruise speed and FL250 service ceiling targets, as well as our range targets. In fact, we have been flying S/N 003 with the new engine since October 2008 and, although we will certify the aircraft with de-rated thrust and a max cruise speed of 315 ktas, the 330+ ktas achieved in level flight test at 25,000 feet, hints at the potential for a future retrofitable upgrade for the D-JET, once the full thrust potential of the engine is made available.

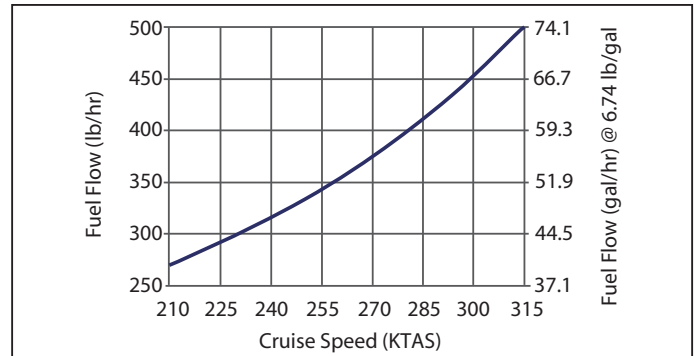
Diamond has, to-date, been conservative in sharing D-JET performance detail. The program has progressed such that we can now share some preliminary performance information based on conservative assumptions and conditions.

Cruise performance

The D-JET's aerodynamic design has evolved significantly from the Proof of Concept aircraft to the sleek production configuration we know today. Apart from the new FJ33-5A engine, there also is a combined drag reduction and increased propulsive efficiency.

The D-JET wing uses a modern laminar airfoil design that significantly reduces drag during high-speed cruise and is optimized for altitudes up to and including FL250. During flight testing however, the wing is "tripped" at the leading edge. This means the flow is forced to be fully turbulent, making the drag conservatively high. Doing this ensures that the cruise targets can be reached with no laminar flow, and that any laminar flow actually achieved in the field is a bonus.

Extensive testing throughout the envelope has been completed, and the 315 KTAS high speed target demonstrated – with margin – through flight test, even with the leading edges tripped for conservatism. The measured fuel flow at FL250 is shown against true airspeed in the figure above at right, again using more conservative "minimum guaranteed engine" assumptions for a mid-life engine" (rather than as brand new engine). By contrast, some competitors cite fuel burn and range figures that are based on new engine performance so, again, preliminary D-JET figures here are intentionally conservative.

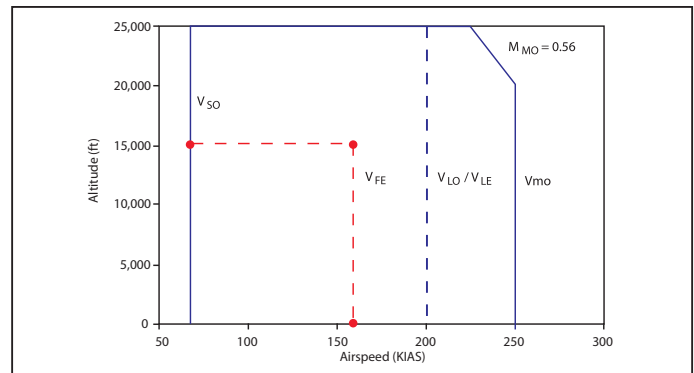


Preliminary D-JET fuel flow versus cruise speed at FL250.

Performance Envelope Summary

As the figures below illustrate, the D-JET achieves its service ceiling of FL250. True airspeed is 315 knots for max cruise, which corresponds to an indicated maximum operating (VMO / MMO) air speed of 250 knots.

The design envelope for the D-JET has indicated maximum operation air speed VMO at 250 KCAS (or MMO at 0.56 Mach), with the transition from VMO to MMO occurring at FL200, as the figure indicates.



Preliminary D-JET envelope in KIAS (knots indicated airspeed) from stall speed (VSO) to maximum operating speed (VMO / MMO) boundaries, with flap extension (VFE) and gear operation (VLO / VLE) speeds identified. D-JET's max cruise speed of 315 knots is noted in true airspeed.

D-JET's gear extension and retraction speeds (VLO and VLE) are identical at 200 knots indicated, as depicted in the figure. This ability to raise or lower the gear at such high relative speed is another tool the pilot can use to enable a steeper descent while maintaining good airspeed.

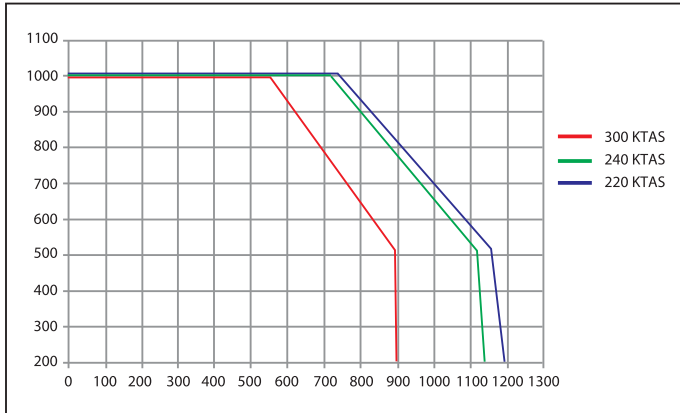
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Payload Range

The D-JET Range-Payload diagram is shown below. The best cruise speed for maximum range at FL250 is in the 220-240KTAS range, while cruising at higher speeds still yields good range.



Preliminary D-JET payload-range diagram for a typical mission, plus 45 minute IFR reserve.

Field Performance and Rate of Climb

Due to the combination of impressive thrust to weight, and an emphasis on efficient high-lift Fowler flaps, the field performance of the D-JET is well harmonized, which means that the take-off and landing distances are nominally the same.

Demonstrated field performance has shown that take-off and landing can be readily achieved in 2,500 to 2,750 feet for ISA, Sea level conditions. The best rate of climb of the D-JET is in excess of 2,500 fpm, with the climb to FL250 taking less than 15 minutes. D-JET's approach speed is about 85 to 90 KIAS, which is slower than the approach speed of many propeller-driven aircraft and contributes to the D-JET's short-field landing ability.

Stall Speed

The stall speed in the landing configuration (landing flaps, gear down) is in the high 60s, with the final exact number, depending on the outcome of current flight testing and other factors. The seat-design for the crash-loading conditions take these stall speeds into account, as per certification requirements.

Summary

To reiterate, these performance figures are preliminary and are based on conservative conditions and assumptions, and they reflect demonstrated performance in actual flight testing. Even with this conservatism, the D-JET meets or exceeds the design goals and is well on its way to becoming the high performing, economical, safe and comfortable aircraft that we set out to build.





D-JET First Flight With New Williams Engine

After taking its first flight in mid-April 2008 and performing in a variety of flight and ground testing, D-JET serial number 003 began undergoing an important transformation in late August 2008: to become aerodynamically-conforming to the D-JET's planned type design. This included installation of the more powerful Williams FJ33-5A engine.

This work led to an important milestone on October 5, 2008: the first flight of the D-JET with the new engine. This article highlights some of these key aerodynamic changes and key steps taken to achieve this milestone.

Engine Upgrade Leads to Airframe Refinements

Moving to the newer, more powerful Williams FJ33 engine was driven not only by the opportunity to provide better bleed handling for the D-JET and optional thrust in the future; the new engine also provides better specific fuel consumption and 500 hours more time between overhaul (TBO). These key advantages were described in previous communiqués and in *D-JET Flyer 4* (May 2008).

All this enhanced engine capability comes in a space-efficient package that is about the same size and weight of the original engine. Although the engine is almost identical in size, its placement within the D-JET airframe required the incorporation of some subtle though necessary design refinements to handle the enhanced power of the engine.

New Engine Inlet and Related Aerodynamic Changes

D-JET S/N 003 has had several components replaced to enable this new aerodynamic conformity and support for the new engine. These changes include:

- Slightly larger engine inlet and new nacelle fairings from inlet to exhaust, to accommodate greater airflow for higher thrust;
- Modified firewall interface and aft bulkhead to accommodate mounting of the new engine to the airframe;
- Refined belly fairing, including a slight adjustment in landing light location;
- Refined ailerons and rudder, to further enhance handling; and

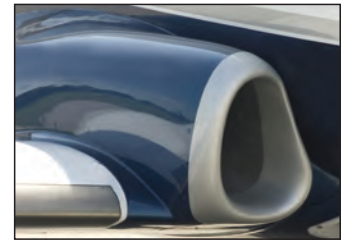
- Installation of the refined winglet design, which also had been incorporated on S/N 002 as reported in *D-JET Flyer 5* (August 2008).

Production tooling was used to create most of these re-designed parts. This will help accelerate production readiness in the months ahead.

The “Mod Squad”

A multi-discipline modification team, affectionately referred to as “the Mod Squad” transformed S/N 003 to aerodynamic conformity. Engineering applied focused resources on aircraft systems (including engine), fuselage and fairings, flight controls, and related control surfaces. The Build Team, Procurement, Tooling and Flight Test Engineering were integral team members throughout planning and executing the modifications.

The team began work in August 2008, removing S/N 003's fairings, wing and other key items to be replaced. Through September this work continued. Along the way, there was cause for celebration when Diamond took delivery of the new Williams FJ33-5A engine, which also sports a new innovative look with its deep blue coloration.



FJ33-5A Engine Inlet (S/N 003)



FJ33-4A-15 Engine Inlet (S/N 002)

Can you see the subtle differences in the shape and height of the engine inlets and fairings used with the newer Williams FJ33-5A (previously known as FJ33-4A-19) on top compared to those used with the original Williams FJ33-4A-15?

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Significance for Flight Testing

Completion of the S/N 003's transformation and its first flight was a noteworthy milestone for the overall D-JET program, because some of the flight testing done with that aircraft is being credited toward certification requirements and is providing real-world validity of the D-JET's modeled flight performance envelope. Serial number 003 joined D-JET S/N 002 and several other Diamond aircraft models at Diamond's winter engineering flight test operation in Texas.



D-JET S/N 003's first flight with the Williams FJ33-5A over London, ON, October 2008.



Diamond chief test pilot Daniel Ribeiro examines the new Williams engine.

New Name for FJ33

Until mid-2008, the new and improved FJ33 engine had been known formally as the FJ33-4A-19 or more commonly as the FJ33-19, but now that this engine is undergoing FAA certification testing, Williams has officially designated this engine the FJ33-5 in keeping with Williams' traditional way of naming significantly improved models.

Williams chose to rename the new FJ33 model mainly to avoid confusion over the engine's thrust rating. The "-19" signified that this improved engine would be in the 1,900-pound thrust class, which was useful when marketing the improved version to distinguish it from the original FJ33, which was in the 1,500-pound thrust class. But this improved model will be rated at different thrust levels in different applications. For example, the engine will be rated at about 1,700 pounds thrust in the D-JET, though testing is being conducted at more than 1,900 pounds thrust for its certification endurance testing, to pave the way for an eventual, optional upgrade to more power down the road.

As Williams has traditionally done in its FJ44 engine family, letters are used to distinguish variants of this new model. The first variant to be certified, for example, is the FJ33-5A for the Diamond D-JET.

So in the future, whether you see the Diamond D-JET engine called the FJ33, the FJ33-5, or the FJ33-5A, rest assured that they are all the same engine – "the engine formerly known as FJ33-19."



D-JET Flight Training

In October 2008, Diamond announced selection of its D-JET flight training partner – Airline Transport Professionals (ATP). Here are some initial details about the D-JET flight training program.

D-JET Flight Training Priorities

In early 2008, Diamond established criteria to guide selection of a flight training provider partner for the D-JET. The top priority was to ensure that the flight training program produce safe pilots from the outset and provide for recurrent training to keep pilot skills sharp. Because flight training contributes to overall aircraft certification and customer satisfaction, Diamond sought a partner that could add value to both these areas. We looked for a partner with capacity to scale geographically and an ability to offer affordable training and related services to make access to D-JET training as convenient as possible.


Why ATP

After soliciting and reviewing proposals from some key candidates, Diamond selected ATP for three key reasons:

- **Experience.** ATP has an unrivaled track record of successfully training transitioning *ab-initio* and piston aircraft pilots to jet aircraft.
- **Accessibility.** With 25 locations across the United States and a commitment to provide training in London, Ontario, as well, ATP has an ability to offer convenient, affordable access to D-JET flight training.
- **Partnership.** ATP's plan to provide value-added services, such as its Pilot Network, aircraft re-positioning, D-JET owner aircraft maintenance support, and more, reinforced Diamond's decision.

D-JET Pilot Training: Key Elements

The D-JET has been designed primarily for the owner/pilot market and, as such, the type rating training needs to be different than conventional business jet type training. ATP's approach to training includes an initial candidate evaluation in which each pilot's skills and experience will be assessed to adapt the overall training experience to each student. D-JET flight training will have an FAA Industry Training Standard (FITS)-compliant curriculum, which means the training will



ATP Quick Facts

Began operations:	1984
Pilots trained monthly, on average:	500
Pilot certificates/ratings past 12 months:	4,825
New Certified Flight Instructors past 12 mos:	500+
ATP Training Locations:	25
Hours of flight training ops past 12 months:	120,000
Aircraft in flight training fleet:	146
Flight training devices:	55+ D-JET sims ordered

include scenario-based, learner-focused experiences that encourage practical application of knowledge and skills. FITS is deemed especially relevant for producing safe pilots for so-called technically advanced aircraft.

Prior to coming to one of ATP's locations for the D-JET type rating course, each student will complete pre-course study written and interactive materials. The type rating course will consist of ground school, time in a D-JET Simulator flight training device and time in a D-JET aircraft provided by the student or by ATP.

As the table indicates, ATP expects the D-JET type rating course to require only six days for pilots who already have a turbine aircraft rating or nine days for non-turbine-rated pilots.

Pilot Experience	Pre-Reading	D-JET Type Rating Course	Ground School	D-JET Simulator	D-JET Aircraft	Pilot Monitoring
Non-turbine experience	50 hours	9 days	28 hours	14 hours	8 hours	25 hours
Turbine experience	40 hours	6 days	24 hours	10 hours	6 hours	If required

D-JET flight training expected elements.

The need for instructor or safety pilot monitoring of each student will be determined at the completion of the type rating course and will be based on input from the pilot, the instructor and the pilot's insurance company. ATP expects that only about 25 hours of such safety / instructor pilot monitoring will be needed for most non-turbine pilots who fly the D-JET, and they expect that most turbine-rated pilots will not require additional safety pilot monitoring in the D-JET after completing this type rating course.

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ATP will offer D-JET recurrent training to enable D-JET pilots to return at least once a year to sharpen and expand skills and to take advantage of additional in-field experience. This recommended recurrent training should be both convenient and affordable, as it is expected to require only two days.

D-JET Recurrent Training Course	Ground School	D-JET Simulator	D-JET Aircraft
2 days	4 hours	4 hours	2 hours

D-JET expected recurrent training elements.

The D-JET's purchase price includes the initial type rating course for one pilot. Several D-JET position holders have requested that a friend, partner or other colleague complete their D-JET type rating together with the position holder. ATP encourages and will support this. Pricing has not yet been announced for any such additional D-JET type rating training or for the recurrent training, though customers can expect this training to be very affordably, competitively priced.



Diamond Simulations's D-JET flight training simulator.

D-JET Flight Training Locations

D-JET type rating training will be available at five ATP locations in the United States, as well as one location to be established near Diamond's facility at London, Ontario. These cities, are: Atlanta, GA; Dallas, TX; Jacksonville, FL; Las Vegas, NV; London, ON; and Phoenix, AZ.

These locations will be opened on a timetable based on D-JET customer deliveries, as Diamond intends to have

training available within about a two-hour flight of any D-JET customer across North America. The specific order and timing of each location's opening for D-JET training will be announced in the coming months. ATP and Diamond selected these locations based on geographic convenience for D-JET customers and quality of the facilities to provide a great training experience.

As Diamond works toward European certification of the D-JET, Diamond will provide additional information about locations for D-JET training outside of North America.

Additional ATP Services

ATP will make available to D-JET owners and operators a set of services to add value and convenience to the overall D-JET ownership experience.

- **Maintenance & FBO services.** Because ATP ultimately will have a fleet of 20+ D-JETs of its own, ATP will expand its already-extensive aircraft maintenance capability to support the D-JET. Diamond plans to establish ATP as a D-JET authorized service center. ATP plans to offer its maintenance services to D-JET owners and operators.
- **ATP Pilot Network.** ATP executes many flight training missions every day between its 20+ locations and to many other airports across North America. This pilot network is supported by a state-of-the-art 24/7 dispatch service. ATP plans to extend access to this pilot network to D-JET owners/operators to provide safety/instructor pilots.
- **Aircraft re-positioning.** D-JET owners also can call on ATP's pilot network to re-position aircraft. Even for D-JET owners who fly their own aircraft, this service can be very beneficial, allowing the aircraft to support travel with many family members or colleagues in disparate locations.

Summary

The D-JET flight training program is in great hands with ATP on board as Diamond's flight training partner. D-JET owners and operators can count on development of an overall flight training program that will produce competent and confident D-JET pilots, and will deliver a set of related value-add ownership services to reinforce the D-JET's position as the most desirable and attainable personal jet.



News

SwiftJet Selects D-JET for its Charter Service

In October 2008, SwiftJet and Diamond Aircraft announced a major order for the Diamond D-JET personal jet to support the launch of SwiftJet's new charter travel service.

SwiftJet purchased five D-JET aircraft and secured options for up to 15. With the purchase of all 15 aircraft, SwiftJet will become the largest operator of D-JETs in Canada.

"The D-JET was designed to be an affordable personal jet, and soon 20.1 million business travellers in Canada will be able to benefit from the same cost savings," said Bassam Al-Sarraj, President of SwiftJet and a commercial pilot with 14 years of experience. "SwiftJet will re-define chartered travel and turn it into a hassle-free, low cost, private class option that's not just for the wealthy, but for anyone who demands efficiency. Travelers will have the flexibility to travel when and where they want, saving the expense of indirect flights and free from delays caused by cancellations and long line-ups at customs."

"The D-JET can land and take off from many small landing strips in Canada. It's the ideal solution for a small to mid-sized businesses looking to expand their markets outside the traditional airline air corridors," said Al-Sarraj. "For example, the Peterborough to Windsor corridor could take less than one hour from the time the passengers step on the plane until they get off. Considering that the drive to Windsor would take 5.5 hrs not including traffic, flying on D-JET makes good business sense."



Bassam Al-Sarraj, President of SwiftJet with D-JET S/N 002.

D-JET Featured in Aviation Documentary

The D-JET, along with Diamond's London facility, is featured prominently in a recent aviation documentary focused on the future of aviation.



Peter Maurer in "The Sky's the Limit" documentary.

"The Sky's the Limit: Aviation in the 21st Century" aired on the Canadian Broadcasting Corporation network and many prestigious networks around the world in mid-November 2008, and is now available on DVD, as well.

David Brady, an award-winning documentary producer, developed this thought-provoking one-hour documentary in stunning high-definition. The program takes an inside look at the future of global air travel and at some of the innovative technologies and alternatives being brought to market to handle the growth, as commercial airline traffic is tripled by 2040 from its current 2.2 billion passengers per year.

The D-JET is cited in the program as an example of an economical personal aircraft alternative to commercial airlines and large business jets. The program includes footage of Diamond's London, Ontario facility, and an interview with Peter Maurer, president of Diamond Aircraft.

The D-JET is in good company in this program. Sir Richard Branson and many industry leaders and luminaries are featured in the documentary, with remarkable footage captured from around the world of aviation.



F.A.Q.

Minimizing bird strike risk

Q. How susceptible is the D-JET's windshield and engine areas to bird strikes, and what has been incorporated into the D-JET design to reduce the risk of emergency in the event of a bird strike?

Even though the D-JET will be certified as a Normal category Part 23 aircraft, Diamond has chosen a higher standard than required by the regulations with regard to the windshield. The windshield and the structure around the windshield have been designed to the criteria applied to the more demanding Part 23 Commuter category aircraft.

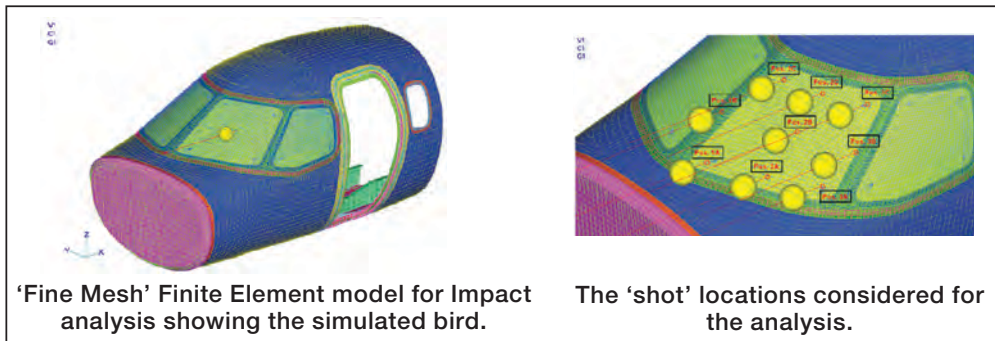
Diamond, working closely with Mecaplex, our transparencies supplier, engaged Swiss engineering consultancy AERO-FEM to perform a complex nonlinear impact analysis of a two-pound bird, as per commuter category requirements, impacting different regions of the windshield and surround structure.

The results of the analysis helped determine the thickness of the acrylic windshield, the size and number of fasteners and the strength of the surround structure.

As for the engine, the Williams FJ33-5A meets or exceeds bird ingestion and ice ingestion standards as part of its engine certification.



D-JETS/N003—sporting a new paint scheme—viewed from straight-on, to illustrate the windshield and surrounding structure designed to Part 23 bird strike criteria.



'Fine Mesh' Finite Element model for Impact analysis showing the simulated bird.

The 'shot' locations considered for the analysis.

Do you have a question for the next *D-JET Flyer*?
Please send your D-JET related questions to D-JETfaqs@diamondair.com

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Diamond Aircraft is an international company with more than 900,000 square feet of production facilities worldwide. Our people are passionate about what they do and it shows in every aircraft we build. Our quality comes from our integrity.

Diamond's dedication to building the ultimate fleet has shaped its product line of modern fuel efficient aircraft, each with a specific application in mind. From flying for business or pleasure, training ab-initio through IFR, commercial, multi-engine or jet, Diamond has an aircraft to match your mission.

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DA20



DA40



DA42



DA50



Diamond Simulation



D-JET