

Duncan Aviation has locations across North America, including complete service centers for business jet and turboprop aircraft, avionics installation/line satellites and avionics line facilities.

### Full Service & Support Facilities

#### COMPLETE SERVICE FACILITIES

| Lincoln, Nebraska            | LNK | 800.228.4277 | Battle Creek/Kalamazoo, Michigan | BTL/AZO | 800.525.2376 |  |
|------------------------------|-----|--------------|----------------------------------|---------|--------------|--|
| TURBOPROP SUPPORT FACILITIES |     |              |                                  |         |              |  |
| Kalamazoo, Michigan          | AZO | 877.403.5932 | Lincoln, Nebraska                | LNK     | 800.228.4277 |  |
|                              |     |              |                                  |         |              |  |

### SATELLITE FACILITIES

#### AVIONICS INSTALL/LINE FACILITIES

| Denver, Colorado  | APA | 303.649.1790 | Van Nuys, California  | VNY | 818.902.9961 |
|-------------------|-----|--------------|-----------------------|-----|--------------|
| Dallas, Texas     | DAL | 214.352.3468 | Teterboro, New Jersey | TEB | 201.288.1550 |
| Las Vegas. Nevada | LAS | 702.262.6142 |                       |     |              |

#### AVIONICS LINE FACILITIES

| Addison, Texas       | ADS                  | 214.352.3468 | Bridgeport, Connecticut        | BDR   | 914.686.8294 |
|----------------------|----------------------|--------------|--------------------------------|-------|--------------|
| Chicago, Illinois    | MDW                  | 773.284.4600 | Ft. Lauderdale, Florida        | FXE   | 954.771.6007 |
| Houston, Texas       | HOU                  | 713.644.0352 | Long Island, New York          | ISP   | 631.981.1080 |
| Ft. Worth, Texas     | FTW                  | 214.352.3468 | Morristown, New Jersey         | MMU   | 973.326.1110 |
| Scottsdale, Arizona  | $\operatorname{SDL}$ | 480.922.3575 | White Plains, New York         | HPN   | 914.686.8294 |
| Seattle, Washington  | BFI                  | 206.764.3962 | Houston Intercontinental, Texa | s HSI | 713.644.0352 |
| Broomfield, Colorado | BJC                  | 303.649.1790 |                                |       |              |





### **RUNNING AT PEAK PERFORMANCE**

We explain why Duncan Aviation leads the industry in TFE731 maintenance. We also provide an historical look at this remarkable engine.



### Departments



THE CAPTAIN'S LOG Robert Duncan discusses Duncan Aviation's 45th anniversary and the *ProPilot*'s PRASE awards.





**A PERSONAL PROFILE** Our Battle Creek, Michigan, Sales Manager, Pete Kilmartin, describes his career and the success of Duncan Aviation



A PUBLICATION OF

Duncan Aviation-LNK Lincoln, Nebraska Battle Creek, Michigan 800.228.4277 800.525.2376 402.475.2611 616.969.8400 www.DuncanAviation.com

#### DIVIDE AND CONQUER

Out-of-the-box thinking in pre-planning and scheduling let Duncan Aviation complete a Falcon 50 refurbishment project in a timeframe no other completions facility could accommodate.

#### **RECOGNIZED ENGINE LEADERS**

When it comes to Pratt & Whitney JT-15D and PT-6 engine maintenance, Duncan Aviation provides the intelligent choices.

#### FALCON 900

Duncan Design incorporates standard Falcon 2000 and custom components to give this Falcon 900 the feel of a Falcon 2000

#### INVESTING IN SUCCESS

Continued training throughout their careers makes our employees a valuable asset to Duncan Aviation and, most importantly, to our customers.

#### CL600: READY FOR THE FUTURE

Duncan Aviation's RVSM program recently expanded to include the Challenger 600. In addition it was equipped with the FDS-2000 and is prepared for service well into the 21st century.

#### **BIG THINGS ARE HAPPENING IN TEXAS**

Duncan Avionics has worked several partnerships in Texas which allow avionics installations and troubleshooting in aircraft down for maintenance in hangars of our business partners.

#### MORE THAN INTERIORS

The Eclipse 500 exterior paint process, STC'd IAI 1125-SPX interiors and 3-D rendering for prototyping; Duncan Design's creations are more than beautiful

#### AVPAC, DUNCAN'S BEST KEPT SECRET For 16 years, AVPAC has helped keep one of the greatest names in aviation growing and, better yet, soaring.

CUSTOMERS RELY ON PITOT/STATIC EXPERIENCE Customers want experienced technicians working on their units, and Duncan Aviation never lets a customer

#### <u>23</u> **HSI/FD TEAM KEEPS YOU IN THE AIR** The team concept has never been lip-service at Duncan Aviation. Check out this dedicated team of professionals.

#### AOG WORK? NO PROBLEM. The people of Duncan Aviation have always "made a difference." AOG work is no different.

25 THE BEST WARRANTY IN THE BUSINESS A one- or two-year warranty on your pump is good. A five-year warranty is heaven-sent.

### **Duncan Aviation celebrates 45th Anniversary** in aviation with high industry "PRASE"

This year, Duncan Aviation celebrates cess. As you can see at right, Duncan **L** an anniversary milestone. It was 45 years ago that my father, Donald Duncan, started the aircraft sales/support organization that would become the Duncan Aviation we know today.

1956 seems like a long time ago. Eisenhower was re-elected. Elvis was in his prime. Frank Lloyd Wright began construction of the Guggenheim Museum. And business aviation, dominated at the time by Beechcraft and Cessna, was in its infancy.

I am proud that Duncan Aviation was there to help shape business aircraft into the successful corporate tools they have become. I am also proud that we continue to lead the way in customer satisfaction with excellent products and services delivered fast and at fair prices.

The results from Professional Pilot magazine's annual PRASE survey (Preferences Regarding Aviation Services and Equipment) are one way we gauge our suc-



Aviation was again given rave reviews in 2001's poll. However, that is just one way in which we measure our success. Direct customer and employee feedback is much more important to us, and the letters and correspondence we receive show we are continuing our tradition of listening to customers and meeting their needs.

So far, 2001 has been a tough year for business aviation. The economy has been questionable and everyone has had to "tighten the belt." Mergers continue to diminish the number of industry "independents" and rumors of layoffs throughout the industry have made everyone a little uncertain.

Even in light of these things, we continue to see huge opportunities in corporate aviation. We recently expanded our Lincoln, Nebraska, facility and are in the process of cautiously planning expansion for our Battle Creek, Michigan, location. We do this while at the same time watching expenditures and weighing every dollar we spend. That is the way my father started Duncan Aviation 45 years ago. Since we have never layed people off in 45 years of business, I believe it is a proven method that will keep us the topchoice of service organizations for customers and employees for years to come.

#### **PRASE Survey Results:**

**Best Avionics** #1 Duncan Aviation-LNK #2 Duncan Aviation-BTL **#5** Duncan Aviation-TEB

Best Maintenance **#1** Duncan Aviation-LNK **#5** Duncan Aviation-BTL

It is my goal that Duncan Aviation continue to serve the industry for another 45 years.

J. Robert Duncan, Chairman



New STCs are constantly being issued to Duncan Aviation by the FAA. Every Duncan Aviation STC installation can be performed at any Duncan Aviation installation facility including Lincoln, Battle Creek, Teterboro, Van Nuvs, Dallas/Ft, Worth, Denver and Las Vegas, Here are some of the most recent additions to our STC list.

#### **Challenger 600 - Provisions for RVSM**

Duncan Aviation recently installed and certified an IS&S altimetry system in a Challenger 600. The Challenger 600 RVSM solution is the latest in Duncan Aviation's growing list of RVSM solutions. See pages 16 & 17 for details.

#### Challenger 600 - First Collins FDS-2000

Duncan Aviation recently certified and installed the first FDS-2000 flight director system in a Challenger 600. The FDS-2000 delivers primary flight information on four. large LCDs. See pages 16 & 17 for more details.

#### Falcon 2000 - Honeywell AFIS

Duncan Aviation recently certified and installed the Honeywell Airborne Flight Information System (AFIS) in a Falcon 2000. The Honeywell AFIS is a complete messaging and flight planning system with around-the-clock ground-to-air and air-to-ground data communication.

#### Falcon 10 - Collins TCAS-4000

Duncan Aviation recently installed and certified the Collins TCAS-4000 Aircraft Collision Avoidance System (ACAS) in a Falcon 50, which includes the latest MOPS 7 software required for European operations.

#### Falcon 10 - Honeywell Mark VII EGPWS

Duncan Aviation recently certified and installed the Honevwell Mark VII EGPWS with display on the MFD 640 in a Falcon 10. This STC and installation satisfies the upcoming Class A TAWS mandate and adds to Duncan Aviation's growing list of EGPWS/TAWS STCs.

#### Westwind 1124 - First Collins TCAS-4000

Duncan Aviation recently earned the first STC and performed the first installation of a Collins TCAS-4000 ACAS in a Westwind 1124A. This installation includes the latest MOPS 7 software, which is required for European operations and covers the Westwind 1124/1124A airframes.

#### Rapid Response Service at 877.522.0111

Duncan Aviation's Rapid Response team can travel to your location for AOG and maintenance support. Factorytrained technicians are available for TFE 731 and JT15D engines, and Falcon, Learjet, Galaxy, Hawker, Citation, Challenger and Gulfstream airframes. For 24 hour access, call our dedicated Rapid Response line toll-free at 877.522.0111. Duncan Aviation technicians are known for getting in the field-fast!



We thank you for consistently making Duncan Aviation a success

in Professional Pilot's PRASE survey. But remember,

the success we're most interested in is YOURS.

#### Customers & Industry Officials in Professional Pilot Magazine's Annual PRASE Survey

Duncan Aviation once again received high marks from readers of *Professional Pilot* magazine in the publication's 2001 PRASE Survey announced this spring. Dubbed the PRASE Survey for "Preferences Regarding Aviation Services and Equipment," this contest ranks organizations that provide support services for corporate class aircraft.

Duncan Aviation facilities were named as the top two avionics facilities in the United States. In the "Best Avionics Center" category, which rates avionic and instrument repair/overhaul and installation services. Duncan Aviation-Lincoln and Duncan Aviation-Battle Creek were named the #1 and #2 centers in the United States. Additionally, Duncan Aviation's Teterboro, New Jersey, location was voted to the #5 spot. Duncan Aviation's Lincoln facility has been named #1 every year since the survey's inception in 1985.

In the category of "Best Maintenance Center," which ranks airframe and engine maintenance, repair and support, Duncan Aviation's Lincoln facility was named the "#1 Maintenance Center" in the United States. The facility has held that position for 14 of the past 15 years. Duncan Aviation-Battle Creek was named #5 in this category.

"We are thrilled that customers and others in the corporate aviation industry continually rank our customer service, guality and technical expertise as the best in the industry," says Aaron Hilkemann, President of Duncan Aviation. "We wouldn't be able to earn these high rankings without the dedication, hard work and expertise of our employees. I'd like to thank them for another job well done."

According to Professional Pilot magazine, the purpose of the PRASE survey is to recognize those facilities providing superior service and to encourage others to reach for a higher benchmark of excellence. There were 14,306 readers who participated in the contest.



#### Dan Buzz Named Vice President of Modifications and Completions for Duncan Aviation-Lincoln

With more than 24 years of aviation experience, Duncan Aviation's Dan Buzz was recently promoted to the position of Vice President of Modifications and Completions for Duncan Aviation's Lincoln facility. In this position, Dan will oversee the avionics installation, engineering and interior completions areas. Most recently Dan held the position of Engineering Assistant Manager, Systems and Equipment/Flight Analyst DER.

#### **Duncan Aviation's** Jim Overheul Named Gulfstream Master Technician



#### Jim Overheul. Gulfstream Technical Representative for Duncan Aviation's Battle Creek location, recently achieved FlightSafety International's Master Technician credential for the Gulfstream IV.

A Duncan Aviation employee since 1990, Jim has 18 years of aviation experience. In his current position, he answers technical and troubleshooting questions for Duncan Aviation technicians and customers.

To reach Jim, give him a call at 800.525.2376.

#### **Duncan Aviation-Teterboro Receives JAA** Certification

Duncan Aviation's Teterboro avionics satellite location (CRS# XJRR155L) recently received its JAR-145 Acceptance Certificate, #5346. With JAA authorization, Duncan Aviation-TEB is now authorized to work on the avionics of European-registered aircraft with the recognition of the JAA.

Duncan Aviation-TEB is located inside the Jet Aviation facility on the Teterboro Airport. The shop is managed by Terry Markovich. To reach Duncan Aviation-Teterboro, call 201,288,1550.

#### **Duncan Aviation-Lincoln's Engine Service** Center has Familiar Faces in New Places

Doug Alleman recently joined Jon Dodson and Mike Healzer as a Turbine Engine Service Sales Representative. In this position, he prepares proposals, determines downtimes and prepares the shop for engine arrivals. With 13 years of aviation experience and his background with Duncan Aviation as Engine Technical Representative and MPI Shop Supervisor, he has the experience needed to help customers determine their engine maintenance needs.

Craig Bohling was recently named Duncan Aviation's Engine Technical Representative/Training Coordinator. In this position, Craig provides support for Duncan Aviation's engine technicians and is the "one stop source" for customers' technical questions. He also develops and coordinates engine technician training. A 23-year Duncan Aviation employee, Craig has a total of 26 years of aviation experience, the last 21 with TFE731 engines.

Mike Bernholtz was recently promoted to MPI Shop Supervisor where he coordinates all activities of the shop including scheduling, logistics and manpower. Mike has been with Duncan Aviation for 10 years and brings 12 years of aviation experience to his new position.

**Bob Elrod Receives** FlightSafety's **Excellence** for Maintenance **Training Award** 



Bob Elrod, Duncan Aviation's Technical Training Coordinator, recently received FlightSafety International's Annual Award of Excellence for Maintenance Training.

Duncan Aviation spends more than \$2 million a year providing technical and non-technical classes for employees. Some technical classes are taught by FlightSafety or other outside vendors, others are taught by professional in-house experts. Non-technical classes have internal and external teachers, too.

"In my office, I have a picture with a statement that sums up my philosophy on aircraft maintenance training," Bob says. "It simply states 'Pay for good training or pay for poor performance.' We choose to pay for good training."

For more information about Duncan Aviation's commitment to training, see page 15.





# "Divide and Conquer"

Above right: Cabinet Specialist Tim Davis works on a Falcon 50 galley this summer while the aircraft it will installed be in remained operational. This Falcon 50 project included a complete reconfiguration of the cabin and lavatory estimated 12 —an weeks of work. Aviation Duncan worked with the customer's busy schedule and divided the project into one fourweek phase and a separate six-week phase.

Feature Article

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**T** That sets Duncan Aviation apart? That **Falcon 50 Reconfiguration** ask when they request their first proposals for large maintenance, interior, paint and avionics installation services from Duncan Aviation. Although Duncan Aviation's depth of capabilities and easily accessible service locations are big differentiators, most existing customers agree that the areas where Duncan Aviation truly shines are innovative scheduling and creative problem-solving to meet customer goals—especially when other facilities tell them their requests are "too difficult" or even "impossible."

To help illustrate this, we will walk you through some of the out-of-the-box thinking that went into a Falcon 50 project we are currently working on at our Battle Creek, Michigan, facility.

question is one that many operators In early 2000, the owner of an early serial number Falcon 50 called Shelley Ewalt, Duncan Aviation's Completions and Modifications Marketing Manager, with his desire to completely reconfigure the cabin and lavatory. She estimated an aggressive 12 weeks to accomplish the overall workscope. However, the owner said he absolutely could not put the aircraft down for that long. At that point, the customer and a team of Duncan Aviation completions and design experts discussed the possibility of using two separate downtimes totaling 10 weeks to accomplish the same workscope.

> This is how they decided to meet the customer's needs without compromising the high-quality work for which Duncan Aviation is known.

#### Phase One

For four weeks this spring, the Falcon underwent Phase One of this project. That included reconfiguring the aircraft's lavatory. The Falcon had an unusual-style configuration to develop proven plans for components that with a forward-facing toilet unit and very little vanity or storage space. The existing lavatory bulkheads, the vanity and the toilet were removed and a new Monogram toilet was installed, facing inboard on the left-hand side of the aircraft. New bulkheads and a door were built and installed, as were a new vanity, sink, faucet, mirror, lighting and storage areas. Associated areas like the headliner, outboard panels and cabin sidewall panels were modified to coordinate smoothly with the new configuration.

Because Duncan Aviation maintains dedicated Falcon maintenance personnel across three shifts, various departments found time to work on the aircraft. An overall refurbishment of the cockpit soft goods and the exterior baggage compartment was completed along with several airframe items, engine/APU inspections and repairs.

Duncan Aviation's designers and engineers took measurements during Phase One, created drawings and synchronized plans on exactly how they would complete the second phase of the project. The owner's Chief of Maintenance stayed on-site for the majority of the project, allowing him to provide guidance and participate in decisions about how each component was attached or located behind panels. He also spent time researching available service bulletins and other potential upgrades with Kevin Bornhorst, the Duncan Aviation Falcon Technical Representative in Battle Creek.

"When the first phase was completed, the customer had a brand-new lavatory and his aircraft was fully operational throughout the summer," Shelley says.

# Phase Two

Having a majority of the cabinetry and shell work finished before the aircraft touched down for Phase Two helped tremendously. Installation of new, pre-assembled headliner, PSU, windowshades and window-

#### In The Interim

The measurements, information and drawings taken and developed during the first phase of the project allowed Duncan Design are easily maintained and aesthetically modern. Duncan Aviation designers and engineers worked with the owner to finalize the design layouts of the new galley, closet, cabin configuration and shell system. Once completed, construction of those components began while the aircraft was flying.

Duncan Aviation's multiple facilities offered their varied services to make the project as efficient as possible. For instance, the Cabinet Department's CNC machine (located at the Lincoln facility) was employed to cut and prepare the major cabinets. Because all engineers share common drawing file formats and programming packages, the CNC machine can create components like new instrument panels, cabinet components and metal components for all of Duncan Aviation's facilities.

When the aircraft returned for the second phase at the end of August, the components were nearly complete and ready to install, shortening the required downtime and allowBy taking measurements and beginning the conceptual drawing process during Phase One of the Falcon's workscope. Duncan Design could develop plans for easily maintainable and aesthetically modern components-and have them constructed-while the aircraft was flying. IDEAS drawings of the new galley cabinet are shown here.

ing Duncan Aviation to meet the six-week time allotted for Phase Two.





IDEAS drawings of the complete new interior refurbishment (above) and divan armrests (below) for this Falcon 50.



The Falcon 50 project described here is one of 30 aircraft projects typically in process on any given day at the Duncan Aviation-Battle Creek facility.

lighting, reading lights and air gaspers is currently underway. Completed cabinetry also now being installed includes newly constructed tables, entertainment closet, drinkrails and galley.

Besides installing these items in the aircraft during Phase Two, the workscope includes the upholstering and installation of six new single cabin seats, the re-upholstering of the divan, a new jumpseat and replacement of all other interior soft goods. Installation of Avtec fiber optic lighting, a new switch package, an updated entertainment system and an allnew insulation package will round out the complete refurbishment.

Other airframe and avionics installation work will be completed as well. Besides a

4A+ inspection, the aircraft will receive the following avionics upgrades: Universal TAWS with MFD display, UNS-1D+ and vertical gyro crossside switching.

line shell that incorporate new fiber-optic The installations and airframe teams are supported by a well-rounded team of on-site engineers backed up with DERs representing electrical systems, structures and flight tests.

> "We have been impressed with the Can-Do attitude of all the people we have come into contact with at Duncan Aviation," the Chief Pilot of this Falcon 50 says, "and it is obviously one of the main reasons that this project has worked so well."

#### Continuing to Plan Ahead

Continuing his tradition of planning ahead, the owner of this aircraft has already begun to discuss a 2C inspection and complete paint at Duncan Aviation in late 2002.

"The willingness of all the teams to focus on the customer's need first, and then to find ways to make it happen, is really at the core of this and every project we do at Duncan Aviation," Shelley continues. "The teamwork between customers and Duncan Aviation personnel leads to successful projects time and time again." \*

### **Duncan Aviation and Pratt & Whitney are Recognized Engine Leaders**

uncan Aviation's Pratt & Whitney understanding that every customer has indiengine support services have always been synonymous with high quality. So choosing Duncan Aviation for JT15D & PT6A engine maintenance is natural. Our exceptional customer service, vendor relationships and years of experience clearly set us apart.

Each year Duncan Aviation completes numerous Hot Section Inspections on PT6A and JT15D engines in addition to providing overhaul and major repair support. This volume of business coupled with our experience let us work closely with our customers' choice of vendors to routinely reduce Hot Section and overhaul costs. Duncan Aviation has developed close relationships with major vendors giving us the opportunity to provide support in a unique way unmatched in the eyes of our customers.

Duncan Aviation has developed two unique programs to meet the needs of the business aircraft operator. They are:

• Our WHIP service (Weekend Hot Section Inspection Program), which reduces downtime by utilizing weekend shifts to complete JT15D HSIs without jeopardizing quality. By using our weekend resources, your aircraft can be flying during the busy workweek instead of sitting at a maintenance facility. Another alternative is to have an HSI performed at your location, eliminating the need to schedule and fly the aircraft to another facility.

• Our *Intelligent Choice* program, which is a custom overhaul program for the Pratt & Whitney JT15D engine designed with the

tion for the engine. Performance issues, warranty, turntimes, rental engines and pricing are all addressed before the engine ever leaves for the overhaul facility. If requested, a flat rate proposal can be developed with focused attention to the details. In addiduring the tion, course of the overhaul, a consultant travels to the overhaul facility to monitor the progress and advise the customer of cost-saving opportunities. The individuals who

Aviation's in



vidual needs. A consultant assists with logbook research and develops a build specifica-

make up Duncan engine teams are the finest  $_{\mathrm{the}}$ industry. Quick response capabilities, years of



knowledge working with P&W products and a wealth of resources create an unbeatable combination.

Team Leader Bill Harris inspects a JT15D engine.

For more information, contact Dan Arrick, Duncan Aviation's Engine Sales Manager in Battle Creek, Michigan, at 616.969.8453 or 800.353.2376. \*

### A Winning Partnership Between Honeywell and **Duncan Aviation Keeps the TFE731 Engine Fleet** Running at Peak Performance

/ hrough the years, Honeywell's Turbine Robustness Team has made great strides to improve the TFE731 engine. Honeywell recognized that problems existed early on and enlisted the help of service facilities to identify areas for improvement. Duncan Aviation was able to provide Honeywell with feedback necessary to create the re-works and Service Bulletins that have been pivotal to improvement of the TFE731. Several pieces of specialized equipment are necessary to accomplish all the improvements laid out by Honeywell and Duncan Aviation has invested in each piece of this equipment, thereby taking advantage of every improvement offered.

At Duncan Aviation, we are particularly proud of our TFE731 capabilities. We not only have invested in the equipment, but we have assembled teams of the most talented industry technicians to support this engine. Duncan Aviation is known for its success in making the TFE731 run at peak performance from interval to interval. Following are some examples of how our Engine Service Center and our partnership with Honeywell help us attain excellent engine performance and high customer satisfaction.

#### Investing in the Proper Tools

Our engine shop technicians have at their fingertips all the critical tooling needed to restore performance to the TFE731. We have an air flow bench designed to measure the A4 and A5 nozzle air flows. This, combined with our fuel manifold test bench, provides the means to control engine temperatures and speeds, and produce repeatable performance following engine tear-down and rebuild. Without these tools, one would do just as well to put on a blindfold and take a stab at it. Our "skunk-works" technicians (as some like to call them) have all this tweaking down. For them, it almost becomes a mathematical puzzle to which they have all the answers from a previous exercise. They put the numbers to work, and the engines perform, match, speed up, slow down, whatever they command them to do. It's wild . . . and they love the challenge. The teams also have two Hoffman balancers that let them perform all rotating disk and blade replacements in-house at MPI, reducing downtime.



#### Turbine Blade Life Limits

#### **JEDA**

The Jet Engine Data Acquisition unit is a means of acquiring accurate engine performance data. This information is key when determining the health of an engine and a course of action necessary to restore performance during the Major Periodic Inspection process. Duncan Aviation has four JEDA units, and they are kept busy virtually all the time . . . if not in our facility, then throughout the country where we help train and diagnose engine troubles with engine partners from coast to coast.

Over the years, Honeywell engineers have revised many service bulletins with the goal of building a stronger engine. One recent bulletin is TFE731-72-3494 HP (high pressure) and LP (low pressure) Turbine Blade Life Limits. This bulletin is of particular importance because it established a means of tracking blade life, resulting in reduced incidents of turbine blade failure. (A turbine blade failure does not make for a happy flight department and secondary damage to the engine from the out-of-balance condition it creates can be devastating.)



Tina Carter (left), Brian Weathers (middle) and Troy Pedersen (right) disassemble a TFE731 engine during a Major Periodic Inspection in Duncan Aviation's Engine Service Center.

#### HPT (high pressure turbine) Shroud Grinding

Another revision to the maintenance manual allows us to grind the HP turbine shrouds using a fixture to obtain optimum HP turbine blade-to-shroud clearances. This lets us achieve greater accuracy in performing HP turbine tip clearance, resulting in better performance. (Obviously, controlling clearances in a turbine engine is extremely important to restoring performance.) Duncan Aviation has invested in an HPT grind fixture.

#### **Controlled Fit Combustor**

Engineers have replaced the old-style sheet metal combustor for one with a more robust design. The replacement reduces combustor profile shifts in the engine. (Sorry to make that sound like profile shifts are a bad thing, but profile shifts are a bad thing.) A combustor profile can falsely indicate the engine performance is greater, or less for that matter, than it really is.





#### LPT (low pressure turbine) Blade Tip Grind

Another service bulletin allows the grinding of the LPT (low pressure turbine) blade tips and the metal spray of the LPT nozzle blade path area. This reduces blade tip-to-shroud clearances and increases performance because of reduced airflow loss between the blade tips and the nozzle shroud. Clearance restoration is critical to the overall performance gain. Duncan Aviation has in-house capabilities to flamespray the LPT nozzle blade path area.



#### Fuel Manifolds

Another maintenance manual revision requires the disassembly, cleaning, repair and re-assembly of the fuel manifolds at the Major Periodic Inspection. This reduces the chance of fuel nozzle streaking, resulting in less hot section distress. A highly functioning set of manifolds in the hot section is critical to performance. This revision allows us to perform this repair process in-house; we have invested in a sophisticated fuel manifold test bench for just this purpose.

#### Wait, There's More . . .

There's so much more to this story that we can't fit it all in our *Duncan Debrief* magazine. Our Engine Services Sales Representatives would love to talk to you more about what we do every day. We have been a Honeywell Authorized Service Center for 22 years and if it isn't already obvious, we are passionate about the TFE731 engine.

For further information, contact Jon Dodson, Mike Healzer or Doug Alleman at 800.228.4277. Or better yet, stop by the Engine Service Center at our Duncan Aviation-Lincoln facility. We would love to show you why we have been so successful with maintaining the TFE731.  $\star$ 

# An Historical Look at the TFE731 Engine

What is the history of the TFE731, or the "Garrett engine?"

Nearly every corporate aircraft operator today has had a TFE731-powered aircraft in the fleet at one time or another. How did this engine get to be so successful?

John Clifford Garrett created the "Aircraft Tool & Supply Company" in Southern California during the mid-1930s. He was a pioneer in turbo-supercharging technology and envisioned his company as a major contender in turbine propulsion engines. Before the first production TPE331 turbopropeller engine left the factory in 1963, "Garrett Supply," "Airesearch" and other branches had diversified in aviation research, development and manufacturing products to satisfy increasing demands for faster airspeeds, higher altitudes and more travel comfort.

Under Cliff Garrett's leadership, the company and its divisions were responsible for many "firsts" in the aviation/space industry, including the first all-aluminum aircraft intercooler on the B-17, the first volume production of cabin pressure regulators in 1941, the first light aircraft turboprop engine and the first gas turbine APU on passenger jets, to mention only a few examples.

The merger with the Signal Companies in 1964, followed by the AlliedSignal merger in late 1985, placed Garrett among the top 20 U.S. industrial companies with worldwide aerospace product recognition. More recently, of course, is the acquisition of AlliedSignal by Honeywell and the failed merger attempt with General Electric. Much has happened since the 1930s, but the name *Garrett* is a one that will probably always linger when jet engines are discussed.

#### The TFE Family

The TFE731 turbofan engine is currently in service on 20 types of civil and military airframes. As of January 1992 more than 6,500 engines had been shipped and have accumulated more than 20 million hours in service worldwide.

Early engines have progressed through sea level thrust ratings of 3,230, 3,500 and 3,700 pounds. The TFE731-5 was certified at 4,304 pounds. For takeoff, the -5A at 4,500 lbs. and the -5B at 4,750 lbs., with significant improvements in cruise altitude thrust and TSFC (thrust specific fuel consumption). Today, Honeywell has a "second generation" TFE731 in production—the -20, -40, and -60. These engines are even more powerful with better fuel specifics and power some of the latest and greatest business aircraft like the Learjet 45 (-20), the Dassault Falcon 50EX and 900EX (-60), and the Galaxy SPX (-40).

#### Historical Evolution of the TFE Family

The TFE731 was based on the core of the TSCP700, developed for the DC-10 APU, and was conceived as the first of a family of turbofan propulsion engines. With low specific fuel consumption, its design made the TFE731 quiet enough to meet noise abatement standards being incorporated in federal regulations in the early 1970s. Certification of the TFE731-2 (the first production model) came in August 1972. The 731-2 was selected for the Dassault Falcon 10 and the Gates Learjet 35 and 36, all introduced in 1973.

The more powerful 731-3 was specifically designed as a retrofit engine for the Lockheed JetStar. The TFE731-3A/-3B soon followed with redesigned fans, slightly extended nose cones and improved high-altitude characteristics.

Certification of the 731- 5 occurred in 1982, and one year later the 731-5A completed certification requirements. While both use the same generator core as earlier versions, the 731-5 and -5A have higher fan bypass ratios and associated improved performance capabilities.

The 731-5B certified in 1991 further improving take-off, climb and cruise thrust as a result of increased fan flow and component improvement. In November of the same year, utilizing the aero-dynamically efficient Dash 3A fan module combined with the highly successful Dash 5 power section, certification of the TFE731-4 was completed. This engine powers the Cessna Citation 650/750 series, and is soon to be a retrofit for the -3 powered Hawkers.

#### One I nteresting fact about the TFE731:

It is probably the only engine in civil service today that did not start as a military or airline engine; there wasn't a huge military contract or major airline to fund development.

As with most all engines, there were growing pains in early development. But the manufacturer known today as Honeywell went to great lengths throughout the growing years to develop improvements in the areas that needed them the most. Honeywell instituted one of the best factorysponsored Maintenance Service Plans (MSP) and worked relentlessly to improve robustness, repeatable performance, reliability and customer-, service center- and OEM satisfaction. Let it be said that Honeywell has worked very hard to continually "raise the bar" on engine performance with the TFE731.

#### The Airframe Falcon 900

**The Request** Create a new Falcon 900 interior incorporating key Falcon 2000 design elements that can be replicated in fleet aircraft.

DHOD DHO

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- **The Plan** Develop an interior package that is modern, distinctive and functional. Of equal importance is the ability to reproduce the high quality interior quickly and precisely.
- **The Solution**Duncan Design achieved the customer's request by incorporating slightly modified<br/>Falcon 2000 elements with custom designed components. Duncan Design's proven<br/>process of assigning an experienced lead designer to every project from concept to<br/>completion ensured every aesthetic detail of the new fleet interior met the customer's<br/>expectations. The production process ensured accurate construction of the new cabinets<br/>using AutoCAD and CNC technology.

#### The Benefits

While the aesthetic benefits of thoughtfully designed and pre-planned interiors are obvious, other benefits may not be.



Our designers' deep understanding of human ergonomics results in interiors designed for maximum passenger comfort.

Proper pre-planning minimizes costly downtime by allowing cabinets and interior components to be pre-engineered and constructed long before the aircraft arrives.

Our extensive experience and knowledge of aircraft interior systems, equipment access areas and maintenance requirements result in interiors designed for easy maintenance. Innovative installation techniques allow for easy removal and reinstallation of interior components, maximizing the life of every interior.

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### A Personal Perspective By Pete Kilmartin

Me: I want to study Automotive Engineering. My Dad: I don't think so. . . Me: How about Aviation? My Dad: OK.

That brief exchange was the first of many fateful events that have impacted my career with the finest aviation service company in the country.

I started working at Kal-Aero in 1973 while attending Western Michigan University. (I was knocking down a whopping \$1.75 an hour!) The first nine years were spent doing various paint and interior jobs and helping with structural repair projects. Because Kal-Aero at that time was relatively small, I was also exposed to the other facets of the aircraft service business. This was a fun time, as everyone was focused on the common goal of doing their jobs as well as they could and helping the company and each other succeed.

During the late 1970s and early '80s, Kal-Aero's focus changed from aircraft sales to support services. In 1983, after spending time in records and research learning aircraft inspection programs, I started the service sales department. My varied experiences had given me a good overview of our capabilities, which helped me be an effective representative.

In addition to selling, I was involved with a number of other projects through the '80s, including the design of the company's computerized maintenance tracking system and implementing the Project Manager concept.

In 1983, I married Debi, a fine lady who has her own career as a teacher. Our son, Rob, is now 16, and our daughter, Lauren, recently turned 14.

The face of the company has changed significantly during the last decade. Moving to the Battle Creek facility in 1992 opened a lot of doors and helped facilitate extensive growth. The really big news came in 1998, though, when we became part of Duncan Aviation. Through many years spent competing with

Pete's Career Highlights

> 2001 marks Pete's 28th year with Duncan Aviation.

His career Accompli shments include: ° 10 years as a techni ci an 18 years as A Salesperson ° 18 years as a Sales Manager

the folks in Lincoln, I had some knowledge and a lot of respect for the way Duncan Aviation operated. I was thrilled from the beginning to become part of the new company.

Looking back over my time with the company, I see many similarities between the spirit and attitude of Kal-Aero during the early years and the Duncan Aviation of today. The teamwork, camaraderie and focus we enjoy are tough to find in any company, let alone in a group of more than 1,850 people. Having seen and followed most every other company in our industry for the last 20 years. I truly believe I am a part of a very special organization.

I really appreciate the chances I've had to grow and expand during my time with Duncan Aviation. Between my family at home and my "family" here at work, I think I'm about the luckiest guy I know.

# Investing in Success

uncan Aviation has always believed **D** that the quality of a company's work is directly related to the quality of its technicians and employees. Continuing education provides employees with the opportunities they need to succeed and is the basis for Duncan Aviation's success. Our philosophy has always been to hire the best in the industry and invest heavily in their personal development and continued training—and it has proven to be very successful.

Recently, the FAA awarded Duncan Aviation's Battle Creek and Kalamazoo, Michigan, facilities with the prestigious Diamond Award for Aircraft Maintenance Technician Training. Our Lincoln, Nebraska, facility was awarded the Ruby Award. To qualify for an award, technicians must attend a specified number of hours of training in a calendar year. Company awards are based on the percentage of technicians who qualify for individual awards. These awards are a testament to our continued training commitment.

"We believe that the only way for our company to succeed is to provide employees with continuing education, proper tooling, and an environment where they can excel," explains Duncan Aviation President Aaron Hilkemann.

Duncan Aviation's 2001 technical and leadership training budget is more than \$2.5 million. At the close of 2001, our people will have received more than 14,000 hours of maintenance and avionics training on most all models of the Citation, Challenger, Falcon, Galaxy, Gulfstream, Hawker and Learjet aircraft. Engine training will be accomplished on the Honeywell TFE731 & TPE331, General Electric CF34, Rolls Royce

FJ44, Pratt & Whitney JT15D & PW305. In addition to major airframe and engine training, we also accomplish training on components and accessories such as Honeywell and Hamilton Sundstrand Auxiliary Power Units and factory training on various avionics systems from Honeywell, Rockwell Collins, Universal, B.F. Goodrich and others.

In addition, Duncan Aviation maintains an in-house program that provides ongoing training on Aircraft Systems, Avionics, Structures and Airframe Components. Inhouse classes are conducted by Duncan Aviation's own trainers and employee experts, allowing us to maximize our inhouse talent.

Continued education is an important investment in the future of our employees, the growth of our services and the safety of our customers. The future of Duncan Aviation is dependent upon our employees and training gives our employees the tools to achieve their goals and advance their careers. Our achievements represent a tremendous personal initiative by our employees and a corporate dedication to personal development by Duncan Aviation to continually invest in our people. \*

Our philosophy has always been to hire the best in the industry and invest heavily in their personal development and continued training it has proven to be very successful.

Duncan Aviation has always believed our employees are our top competitive advantage. That is why we continually have increased our investment in education and career development.

**Duncan's Monetary Investment in Training in Millions of Dollars** 



Figures do not include cost of travel and lodging, where applicable. In 1999, these expenses pushed the training expenditure above \$2 million \*\* Some informal, on-the-job training is not included in these figures.

### **RVSM and FDS-2000** CL600: Ready for the Future



been a primary concern of most CL600 guzzling altitudes. operators because most of their flights are domestic. But in November, CL600 operators An increasing number of CL600 operators

Thil recently, Reduced Vertical through hoops to obtain a non-RVSM U Separation Minimum (RVSM) has not certified clearance or flying the trip at gas-

who venture to South America, Bermuda, St. are realizing that the U.S. RVSM mandate Marteen or Puerto Rico will face the reality date of November 1, 2004, is no longer a farof RVSM and the ultimatum of jumping off speck on an artificial horizon. In fact it

a planet full of non-RVSM-certified aircraft. performance requirements of RVSM. Best of The sheer number of aircraft lacking all, Duncan Aviation's CL600 RVSM solution manpower to perform the installations and on existing equipment configurations." the FAA paperwork turntime makes an RVSM certification crunch seem imminent.

Like most CL600 operators, the operator of with the Collins FDS-2000. This system the aircraft pictured here was not interested transforms older flight decks with 21st in selling his aircraft to purchase a different century technology on par with year 2002 RVSM-compliant aircraft. Among other model aircraft. The installation replaced factors, he was not eager to launch a search many of the aircraft's analog instruments for another airframe with the large cabin and with instrumentation that is lighter, comfortable floor plan of the CL600. At the brighter, easier to read and offers the safety same time, he was not eager to pony up the of redundant COMM/NAV and FMS systems. staggering \$250,000 price tag rumored to (Also, visit www.DuncanAviation.com/more/ accompany large aircraft RVSM certification. GIIFDS2000.html for details of a recent GII

His quest for answers led to Duncan 2001 Duncan Debrief). Aviation's knowledgeable avionics sales and engineering teams. Outside-the-box thinking Other systems installed and STC'd for this and thorough research by Duncan Aviation CL600 include the Collins AHS-3000 AHRS. has resulted in a better RVSM solution for Goodrich Aerospace GH-3000 ESIS and several airframes including the CL600. "We Securaplane XL2410 emergency battery have proven that Challenger 600s with existing single or dual Honeywell AZ-242 Air Data Computes (ADCs) can be modified to Contact Gary Harpster for details about meet RVSM requirements," says Gary equipping your aircraft with RVSM or FDS-Harpster, Duncan Aviation Avionics Sales 2000. Also, request your free copy of Straight Representative. "We can also replace Talk about RVSM, the latest booklet in our existing altimeters with new air data display series created to clarify confusing aviation units, which are basically digital altimeters issues. 402.475.2611 or 800.228.4277 or with built-in ADCs. These units meet the RVSM@DuncanAviation.com. \*

seems to be gaining speed as it races toward stringent altitude display and autopilot certification compared with the available is in the neighborhood of \$150,000 depending

system.



In addition to the RVSM solution, Duncan Aviation STC'd and equipped this CL600 FDS-2000 installation featured in the Spring



(Above) Triple FMSes provide redundancy for an extra measure of safety.

(Below) IS&S altimetry is a key ingredient for Duncan Aviation's affordable **RVSM** solution for the Challenger 600 and other airframes.



| September<br>October<br>November<br>December<br>January<br>March<br>May<br>June | July<br>August<br>September<br>October | November<br>December<br><b>2004</b><br>January | February<br>March<br>May<br>May | June<br>July<br>August<br>September | October<br>November<br>– December |
|---|--|--|---------------------------------|-------------------------------------|-----------------------------------|
|   | Asia-E<br>South of F                   | urope<br>limalayas                             | )                               |                                     | United<br>States                  |

# Big Things are Happening in Texas

They say everything is bigger in Texas and Duncan Avionics is no exception! There are more Duncan Avionics facilities in Texas than any other state in the country. Our very first satellite shop was started in Houston more than 16 years ago and we now maintain five separate facilities in the big state. With locations in Dallas, Fort Worth, Addison and two in Houston, if you're in Texas, help is not far away. For every avionics need from our world famous loaner support to the most complex TAWS and TCAS installations, Duncan Avionics can handle it.

You may be in Texas for airframe and engine service from a Duncan Aviation business partner facility. If so, this is a golden opportunity to use one of our partnerships with maintenance facilities throughout Texas to minimize your downtime. It is very common for a Duncan Avionics crew to perform an installation while an aircraft is down for regular or major maintenance, reducing costly and inconvenient downtime. \*

## Have Wrench; Will Travel



TCAS and 8.33kHz control heads were installed by Duncan Avionics during maintenance at a Duncan Aviation business partner facility.

Duncan Avionics' Dallas Install team performed this avionics installation in the hangars of Trimec Aviation while the IAI 1124 Westwind was there for airframe and engine maintenance. The team replaced the older, non-supported and problematic Collins NCS-31/R-NAV radio control head with new 8.33kHz compatible Collins control heads. In addition, a Honeywell TCAS I was installed by the team. This installation was completed using an existing STC from Duncan Aviation's bank of over 400.

Thorough planning and daily ventures to the Trimec hangar provided a quick and accurate installation during the same

downtime as the scheduled maintenance. The extra effort of the Dallas Install team saved the customer thousands of dollars in downtime and underscored the flexibility that makes every Duncan Avionics shop an attractive choice for all your avionics needs. \*





craft?

For Duncan Avionics service and installations in and around Dallas, Fort Worth and Addison, call Kent Beal, Shop Manager.

Duncan Avionics Dallas, TX 214.352.3468

### TAWS and EGPWS

Q. I heard the FAA's TAWS mandate is coming to the US in 2005. Where can I learn how and if this mandate will affect my flight operations?

A. Yes it is coming in 2005. For answers, stop by any Duncan Avionics shop and get your free Straight Talk about TAWS booklet. In addition, your local shop manager can give you answers to your specific concerns including what it will take to make your aircraft meet the mandate.

**Q.** Once we determine which system is best for my flight operations, can Duncan Avionics install it in my air-

A. Yes, your Duncan Avionics shop is staffed with knowledgeable technicians capable of installing a TAWS system in your aircraft that will meet and exceed all FAA requirements. Every Duncan Avionics shop has access to Duncan Aviation's large inventory of engineering documentation to ensure the systems are installed to exacting tolerances.

Q. I know which TAWS system I need, but how do I get an accurate quote for a TAWS installation?

A. Just call your Duncan Avionics shop manager with your aircraft's specifics and he will determine the cost and details for what it will take to outfit your aircraft with the right TAWS system.

Q. If Duncan Avionics installs a new system, how are the electrical changes to my aircraft documented?

A. Each shop has high-speed computer network access to our mainframe computers in Lincoln and Battle Creek which contain thousands of engineering prints. Your shop will design a custom set of CAD wiring diagrams for your particular installation. You will get a copy of these prints for your aircraft documentation and future installation work. Plus. this documentation will always exist on the mainframes at Duncan Aviation for future reference.

For Duncan Avionics service and installations in and around Houston call Sean Maddox, Shop Manager, at 713.644.0352.

Duncan Avionics Dallas, TX 214.352.3468

# More than Interiors

Duncan Design is known for designing and creating interiors as beautiful as they are functional. What is less known about this team is how its realm of capabilities reaches far beyond the reputation it has built. One example is the recent upstart Eclipse 500 Jet for which

Duncan Design was comissioned to create a custom exterior paint design. In addition to the design, the team was consulted to educate the customer about the processes and challenges of painting an aircraft.

Another Duncan Design advantage is

its method of researching every FAR a new design might challenge. This extra step saves time and money in the long run and was especially helpful in developing the IAI 1125-SPX (now Gulfstream's G100) STC'd interior floor plans.

A new and exciting development at Duncan Design is the ability to generate 3-D computer models that can be brought to life as prototype products. Duncan Aviation's in-house R&D and Engineering teams recently created some 2-D drawings for a specialized tool. Duncan Design converted these drawings into a 3-D computer model and crafted a prototype tool that has successfully reduced downtime and eliminated errors. \*

### More than In-House

You may know Duncan Design consistently accomplishes its primary goal: providing the best design for the project. You may not know Duncan Design's creative services are available for jobs not scheduled for work at Duncan Aviation. You can call on this renowned team for top-quality interior and exterior designs or assistance with any sized project at any stage of development.

Duncan Design has always created designs and chosen materials to meet your needs. In addition, this team carefully selects members with strong backgrounds in product and interior design. This inspires the creation of non-traditional living and working spaces - much more than a legal transportation tube with a pretty outer shell.

Experience with nearly every make and model of business jet empowers Duncan Design. Having seen the best and worst designs employed in every airframe, this team has a broad arsenal of solutions for every situation. Duncan Design understands the marriage of aesthetics and function; the interaction of systems with components; how paint works; and what needs to be done to meet the ever-changing regulations.

ver the years, Duncan Aviation has Uestablished itself as the premier aviation service provider for corporate operators. There are many reasons for this phenomenal success including Duncan Aviation's unmatched excellence in airframe maintenance and components, our wide range of service authorizations and a division within the company known as AVPAC.

Aircraft operators and FBOs know that keeping aircraft in the air requires parts ... and in Duncan Aviation's case, since we specialize in numerous aircraft types and the industry's best turntimes, we must maintain a wide spectrum of parts. Parts availability is the reason AVPAC plays such an important role in the daily operations of Duncan Aviation.

The relationship extends well beyond the parts world. Duncan Aviation supports AVPAC with the #1 avionics service as rated by Professional Pilot magazine. This, in addition to a \$90+ million inventory, the most knowledgable avionics sales and support in the industry and a rapidly growing pool of rotables, makes AVPAC a one-stop parts shop and locator for many of the most popular and sought after aviation parts and components in the world.

For more information about AVPAC, its relationship to Duncan Aviation or our many service authorizations, call us toll-free at 800.228.1836. \*

At right are a few of the many service authorizations AVPAC and Duncan Aviation share.

# AVPAC, Duncan Aviation's Best Kept Secret AVPAC

A Service of Duncan Aviation









**Pratt & Whitney** United Technologies Company



**Raytheon** Aircraft

Honeywell





The Sensible Service People



### **GARMIN**





### **Customers Rely on Pitot/Static Experience**

Customers want the sales talk to be backed up with experience, and Duncan Aviation has some of the most experienced technicians in the industry.

When it comes to Pitot/Static units, the members of Duncan Aviation's Pitot/Static team—Jim Kuhl, Bill Prier and Joe Moritz—know exactly what customers want, a quality unit repaired right the first time. This team combines 59 years of experience with a personal commitment to go beyond the normal "text book" requirements of instrument maintenance.

Altimeters, altitude alerters, airspeeds, mach-airspeeds, vertical speeds, static defect correction modules, SAT/TAS computers & indicators, cabin altitude controllers, altitude controllers and encoding altimeters were all included in the 1,145 units repaired in 2000. Per person that's more than one unit per day, giving the team one of the lowest turntimes in the shop. And although they work on a huge number of units, their focus is always on the unit in hand.

The secrets to the success of this amazing team include the following: Duncan Aviation's remarkable SoftSet Computer systems, which enable the team to accurately and efficiently troubleshoot units; the extra step of inspecting each part before putting it into a unit, helping to ensure the lowest warranty in the industry; and the customer-oriented attitude of "Would I be happy with this unit in my airplane?" Not surprisingly, most customers are happy with the results.

To learn more about Duncan Aviation's Pitot/Static capabilities, please contact a Duncan Aviation Technical Representative at **800.LOANERS** (562.6377) or visit us at www.DuncanComponents.com. \*

## HSI/Flight Director Team Keeps You in the Air

To turn HSI/Flight Director units quickly, Duncan Aviation has experienced technicians, thousands of loaners and knowledgeable Tech Reps.

One thing that sets Duncan Aviation's Avionics/Instrument Shop apart from the hundreds of other shops around the country is the fact that we can and do handle a large volume of units every year. Our HSI area repaired or overhauled 3,144 units in 2000. Call it work ethic or just a sincere desire to satisfy the customer, but what's important to us is the fact that our customers trust us to "handle it."

As with the Pitot/Static team, the HSI/Flight Director team in essence performs preventive maintenance as they repair units. They do this by replacing the right parts, thereby keeping these units in your aircraft and *not* on our bench. With 14 technicians and 140 cumulative years of experience, believe us when we say that we know what the word *quality* means. This is a big plus for customers who hate the terms *downtime* and *AOG* and like to stay in the air...and who doesn't.

To find out what Duncan Aviation's HSI/Flight Director team can do for you, please contact any Duncan Aviation Technical Representative at **800.LOANERS** (562.6377) or visit us at www.DuncanComponents.com. \*

> Customer commitment, quality service and fast turntimes are terms not lost to antiquity at Duncan Aviation's busy Avionics & Instrument shop.

Duncan Aviation has been rated the #1 Avionics Shop in the U.S. every year since 1985. (PRASE survey *Professional Pilot* magazine)



Jim Kuhl, Bill Prier and Joe Moritz talk to Gerry Schultz about their Pitot/Static schedules.









uncan Aviation's Accessory Shop routinely provides ONE or TWO day AOG turns on many accessory components. How do we turn your units so quickly with superior quality? Our people!

The Accessory Shop is open seven days a week. Our dedicated weekend team is on duty Saturdays and Sundays from 10 a.m. until 10:30 p.m. In addition, there is no overtime charge for routine repairs when using this special extra service provided by Duncan Aviation.

Duncan Aviation's Accessory Shop also employs the same specialized team concept found throughout every department at Duncan Aviation. Each team of skilled technicians concentrates on specific types of aircraft components, testing/inspecting equipment and propellers. This makes each team a group of highly trained, experienced specialists who are led by an even more experienced Team Leader.

Duncan Aviation accessory teams include: A specilized Hydraulic Team, Electronic Team, Electro-Mechanical Team, NDT Team, Pneumatic Team and a Propeller Team.

For more information, please contact Chris Gress, Duncan Aviation Component Service Sales & Marketing Rep, at 800.228.4277 ext. 1664. \*





Duncan Aviation was ranked 62nd in FORTUNE magazine's top 100 places to work survey. This was the company's first attempt at the Fortune 100 List.





#### Duncan Aviation and Parker's Abex NWL Service Center team up to provide

# The Best Warranty in the Business

Part Numbers **Currently Available:** 

Lear: P/N #s 65078-01, 6600301-3, AP09V-8-01

Hawker: P/N #s 42022-03, AP05V-086-02

**Bombardier** (Short Bros.) SD330 & SD360: P/N # 40163

BW

wo of the greatest names in aviation an unbeatable exchange price, and you can't L have teamed up to provide operators with an unprecedented warranty that is knocking the aviation component business on its ear.

In the real world, warranties vary greatly from product to product, but they are seldom for more than a year. With the demands placed on components in the aviation industry, most warranties understandably average only one or two years in duration. So just imagine installing an Abex NWL pump in your aircraft with a five-year/3500 hour warranty. Did that get your attention? Along with this fantastic warranty, add in

go wrong.

To find out more about this exciting and unparalleled offer, please contact Chris Gress, Duncan Aviation Component Service Sales & Marketing Rep, at 800.228.4277 ext. 1664, direct at 402.479.1664, cell at 402.450.5216 or e-mail at chris gress@duncanaviation.com. \*