

A DUNCAN AVIATION PUBLICATION

Duncan

Prebrief

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For more information about the *Duncan Debrief* publication, contact Duncan Aviation's Marketing Communications team at 402.475.2611.

Hurricane Katrina
Maximum Sustained Winds 175 mph
Maximum Central Pressure 902 mb
08.23.2005 - 08.31.2005

Cover Story: Giving Back The Sky

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Cover Story: Duncan Aviation employees spend more than an hour transferring a hurricane-damaged Learjet from a flat-bed trailer to its spot in Duncan Aviation's service hangar. Over the next few months, this trucked-in aircraft undergoes extensive repairs and inspections, and eventually is given back to the sky.



A Message From Robert and Todd Duncan

Duncan Aviation is a truly dynamic company. I don't say that because I have 50 years of intimate involvement; I say it because of the many people who have put so much of their lives into making it successful—past, present and future!

Over my tenure, thousands of people have been involved in the Duncan Aviation success story. Just as a team pulls on a rope in tug-of-war, so have our team members, each according to their talents, pulled against the many pitfalls, transitions and constantly changing environment of general aviation. And for 50 years, the flag in the middle of that rope has moved our way! Duncan Aviation has had and continues to have great leadership, innovative people and wonderful teamwork. It will get "better and better" into the future.

General George Patton often said that he felt he was destined for great things. He devoted his life to the military in order to prepare himself for his destiny. In a similar way, I feel as though I've been preparing to be Chairman of Duncan Aviation all my life. I've devoted much of my life to learning all I can about aviation and to injecting myself into the industry we all serve. I firmly believe in the Core Values of Duncan Aviation, values my father and grandfather fused into the essence of the company. In short, I've grown up with Duncan Aviation and the aviation industry we proudly serve and I am confident Duncan Aviation is on the right course.

Part of my job going forward will be to maintain that course and to enhance the Duncan Aviation experience for customers, team members and our

This year I will retire. However, I will keep my finger on the pulse of Duncan Aviation as a board member and Chairman Emeritus. As Todd becomes Chairman, it is a fabulous feeling knowing his deep aviation roots and commitment to Duncan Aviation. Todd has seen and experienced many of the same transitions that I have in my career. He has developed trust and firm relationships throughout the industry. He understands the importance of retaining quality people and teamwork. He possesses positive energy, a passion for flight and best of all is fully committed to direct our family's involvement in Duncan Aviation. Todd has a great sense of how to serve customers and for many years now he has had his finger on the pulse of the industry.

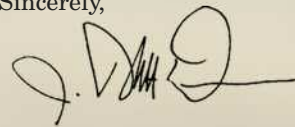
general industry. Some may think I'm a little young to be in the Chairman's position, but Robert was only 26 when he slid into the left side of the cockpit and Donald had the greatest confidence in him. He guided Duncan Aviation through some unbelievable transitions and did a fantastic job. Now it will be my responsibility and I can assure everyone associated with Duncan Aviation that the values we hold dear, the trust built through our relationships and the direct family involvement won't change!

I've grown up not only with Duncan Aviation, but with many of the team members here; we truly are just like family. It is such a great feeling to come to work each day and see so many people who all know each other and have for many years. That's another Duncan Aviation secret, employee

Both Todd and I officially joined Duncan Aviation as teenagers. It seemed we were always involved in some form of service to the company. As an early teen, Todd often accompanied Donald on sales trips; while still in high school he was selling airplanes and for many years now, Todd has led our award-winning avionics and accessory areas. I am proud to say he is a lifelong learner.

The third generation of Duncan leadership for Duncan Aviation will be a truly remarkable generation, and one I'm confident will succeed beyond anything I can imagine.

Sincerely,




J. Robert Duncan, Chairman

retention. Other companies ask: How do they do that? It's simple. Just as Robert has said, we are a big extended family. People here will tell you that I rarely spend my days tied to a desk; I meander through the hangars and talk, not with employees and customers, but with friends. And just as my father and grandfather taught me these values, I'm now teaching the fourth generation!

I'm looking forward to my tenure as Chairman and to new and old relationships, both customer and extended Duncan Aviation family. Buckle up, it will be a grand ride!

Sincerely,



D. Todd Duncan, Chairman





Part # AN960PD416

An Infinite Array of

“Special Projects”

“Special Projects.”

WOW! Is that ever a term in search of Duncan Aviation’s unique perspectives on how the business aviation industry functions and why it’s so important. At Duncan Aviation we think the term “special” applies to everything we do! Each project, whether it’s for a customer or for our community, is special.

Duncan Aviation has performed tens of thousands of “special projects”; at least that’s our perception. Some have had gigantic worksopes that involved coordination with nearly every Duncan Aviation department. Others have been

handled with a single phone call. We’ve seen wing demates, ferry permits, MPIs, more electronic installations than you can count, thousands of AOG situations, paint schemes that became works of art, bolts and washers that cost more to ship

“AOG situations, paint schemes that become works of art, bolts and washers that cost more to ship than they are invoiced for and a million more ‘special projects’ Each one performed as if it were the most important task at that moment.”

than we invoiced for and a million more “special projects.” What’s more, each one was performed as if it were the most important task at that moment—and it WAS!

What, from an operator’s perspective, constitutes “special?” It’s certainly special to have more service authorizations than anyone else in the world and be rated as the top maintenance and avionics repair facility year after year. Maybe the meaning of “special” bores down to the quality of those who work at such a business, and whether they truly care about what they do and the industry they serve. “Special projects” are part of the special sense of pride which brings aviation enthusiasts and professionals together to pull off some remarkable and unique projects.


SPECIAL = UNIQUE

Maybe a better way to talk about “special projects” is to refer to the uniqueness of certain projects and how Duncan Aviation uses its vast pool of experience to guide each project to fruition. When an operator wants or needs a complete inspection, overhaul and refurbishment, Duncan Aviation has the professional characteristics needed to perform these types of huge worksopes. That’s a bold statement, but it’s true because of the intense training, industry dedication, capital investment



Duncan Aviation paint technicians recreate company logos and unique designs on aircraft all the time. One of our favorite paint detail projects, though, has been recreating the Poky Little Puppy in a few different poses.

the Strategic Air Command Museum between Lincoln and Omaha), shipped aircraft wings around the world, sent teams to AOG locations all over the globe and restored badly damaged aircraft to original specifications. We outline some of our more unique projects in this issue of the *Duncan Debrief* magazine.

The people of Duncan Aviation have pretty much “seen it all.” That should instill great confidence for most operators. But the truth is that operators are most concerned with *their* “special project.” They want a company with a long history of excellence, teamwork and people who will always view *their* “project” as the most “special” one worked on. And here at Duncan Aviation, rest assured. It IS! 

and retention of experience that Duncan Aviation maintains year after year. Every Duncan Aviation team member stakes their personal reputation, and ours, on each project they touch. And take a close look at that reputation. No other company comes close to matching it! This type of dedication can’t be taught; it can only come from the hearts and souls of special individuals who view their careers as special.

Duncan Aviation has worked on many uniquely special projects. We’ve donated several aircraft to museums, painted and restored a space capsule (see the Apollo 009 capsule the next time you’re near

SOME MORE FAVORITE PROJECTS.



A CESSNA 150 FOR A CHILDREN’S MUSEUM

Not every delivery is for a typical business customer. In 2000, Duncan Aviation donated a Cessna 150 to the Lincoln Children’s Museum. Many Duncan Aviation team members contributed their time to make this 150 as realistic for children as possible. With it, the thrill of aviation comes alive for children who visit the museum.



APOLLO CAPSULE s/n 009, DUNCAN AVIATION’S SPACE CONNECTION

The unmanned Apollo space capsule s/n 009 was launched on Feb. 26, 1966, for a suborbital flight. After several years of testing, it was donated to the University of Nebraska in 1972 and sat outside in the Nebraska elements for years. The abuse required complete refurbishment and new paint. Duncan Aviation donated the labor needed to restore the capsule. Today it resides at the Strategic Air Command Museum located between Lincoln and Omaha and many Duncan Aviation customers see the restored capsule while touring the museum.



HELPING OUT IN BAHRAIN

When a Saudi Arabian aircraft damaged its wing during landing at a Bahrain airport, Duncan Aviation was called. The most economical solution required locating a “used” wing, bringing it back to airworthy condition in Lincoln and changing it out in Bahrain.

To transport the wing and Duncan Aviation team to Bahrain, a Russian Antonov AN-124-100 transport aircraft was needed. The team removed the damaged wing, installed the airworthy wing, connected the auxiliary fuel tank, test-flew the aircraft and had the work approved by the Kingdom of Saudi Arabia Presidency of Civil Aviation. This team dealt with poor ground equipment, old 220-volt electrical service in the hangar, uncertainties about visas and work permits and the staggering heat. Despite the challenges, the Duncan Aviation team did a top-notch job!

GIVING BACK THE SKY



ANSWERING THE CALL TO EXCEED

During the 2005 hurricane season the 11th tropical depression formed off the northwestern coast of the Bahamas. As it moved through the warm Caribbean waters, strong winds blew and waves surged creating a more intense tropical storm. It was at this time this natural phenomenon earned its name – Katrina. Although she was safely out at sea, Katrina didn't show signs of slowing down and was on a heading straight for the eastern coastal area of southern Florida. Just one hour before landfall, sustained winds catapulted her to hurricane status.

After a hurricane slams into land, there isn't much but devastation left behind. It's not always the water that does the most damage, but the wind – downing trees like twigs, twisting metal like tin cans and throwing debris through the air to become lethal projectiles. On August 25, 2005, southern Florida felt the effects of Hurricane Katrina as it pounded the Atlantic coast. The ragged eye made landfall at 6:30 p.m. between Miami and Fort Lauderdale. Buildings were no match for the 80 MPH sustained winds and 92 MPH gusts. The aftermath of a storm with this much strength is felt for a long time as everyone begins the process of cleaning up, rebuilding and moving forward. Airports reported hangars with doors ripped off and the airplanes tossed like toys.

When Brad Lennemann, Duncan Aviation Aircraft Service Sales Representative, received a phone call asking Duncan Aviation to provide a repair estimate on a Learjet 35 that sat through and survived Hurricane Katrina, he became real excited. "I know what kind of damage hurricane winds and flying debris can do to an aircraft, but I also know what kind of work Duncan Aviation is capable of. We were up for the challenge."

The initial photos showed damaged airplanes inside a hangar that was falling down around them. Nose and tail sections were in the air, smaller aircraft were pushed under larger ones and the hangar doors were lying underneath and on top of the pile. You couldn't tell where one plane ended and the other began.

Tim Garity, Airframe Tech Rep, headed to Florida to an area still littered with the effects of the hurricane. His destination

was a hangar that was still in disrepair with no doors, part of the roof missing and all insulation sucked out by the winds. Other buildings were wrapped around the supports like aluminum foil. One of the doors and part of the roof had come crashing down onto the tail of the Learjet causing the nose to rise and the radome to be sheered off. Both elevators and stabilizers were dented, twisted and torn.

Tim's proposal was going to be quite extensive with a long

Structures - Replaced: 3/4 of left-hand skins forward of the door - Nose doors - All leading edges - Vertical Stabilizer - Ailerons - Strainers in tail cone - Right tip tank - R
Aircraft - Replaced: 3/4 of left-hand skins forward of the door - Nose doors - All leading edges - Vertical Stabilizer - Ailerons - Strainers in tail cone - Right tip tank - R
in tail section - Replaced: Wingspans - Flaps - Rudders - Nose gear box - Delta wings - Engine - Wing engines after cone check - Machine Shop - Fabricated: micr tool
airframe tech rep



and parts - alignment checks - Accessories Shop (BTD) - Reformed major landing gear inspection, teardown & repair - Accessories Shop (LNR) - Assisted in
 Interior Completions - Installed complete interior - Identified & replaced many missing parts - PMA - Fabricated lower tail skin with compound curve Airframe

list of repairs and nearly every inspection in the book. "I knew we could do the work and had done it all before. This project would just require it all at once."

Every maintenance event comes with challenges, but this had more than its share. The first was how to get the aircraft from southern Florida to the Central Plains, more than 1,600 miles away in Lincoln, Nebraska, one of two full-service Duncan Aviation facilities in the United States.

When an aircraft arrives at Duncan Aviation for a maintenance event, it usually arrives by air. But on this occasion, the aircraft was not able to take flight and would have to arrive by another means of transportation—a flatbed trailer. Two experienced airframe mechanics, Donavon Mosher and Chris Schmitz along with Tim Garity performed an on-site demate to prepare the fuselage for transport. The day the fuselage and wing section were

scheduled to depart, a crowd gathered to watch as an eight-story crane easily picked them up and loaded them on the flatbed trailer to begin their journey northward.

Milestones

All work done at Duncan Aviation's full-service maintenance facilities are

**"Milestones,"
 said Monte
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 milestones."**

assigned a Project Manager, who is the customer's on-site contact to make sure the work meets their specifications and stays on schedule. But how do you prioritize a project that encompasses so many departments and requires so much talent and hours? "Milestones," said Monte Reeves, Duncan Aviation Project Manager. "You work a job like this by milestones. If you always look at the project as a whole, then progress doesn't seem to come fast enough. With smaller, more manageable goals, before you know it, a good chunk of the project is completed."

Most areas of Duncan Aviation were called to provide their skill and expertise on this project. One of the first in line was the Airframe Structures team. Led by Monty Allen, all members of this team had their work cut out for them. "There was nothing about this project that was cut and dry," said Ryan Jones, Lead Structures Mechanic for this project. Mike Mortensen and Dan Gospodarski, Airframe Structure Mechanics agreed. When asked what the most challenging aspect of the project was, Mike exclaimed, "All of it! At every turn, we were faced with some sort of obstacle that needed to be worked. But no matter what, we had to get it solved and behind us." This team was one of the first to tackle this project and one of the last to sign off on it. Before they were finished, they had



replaced three skins, Frame One, all leading edges and a long list of other structural work that included repairing, modifying or fabricating parts.

Along with Structures, the Airframe Maintenance team worked tirelessly. Rob Anderson, Airframe Team Leader, is proud of the work his team performed in spite of the frequent and frustrating obstacles that would slow down or stop their work. The major challenge that faced this team was a parts shortage. This lack of available parts was due to the age of the aircraft, a late model 35; one of the last of its kind to roll off the assembly line. Bombardier retired this model several years ago and doesn't manufacture many of the parts. Knowing that parts couldn't be the cause of missing those milestones, an all-out search began. Many were found, but still needed work to become useable. However, if a part just couldn't be found, work still continued because the Machine Shop was called upon to fabricate it in-house. "We were able to continue to make progress because of their skill. Curt Wilhelm and his team are so knowledgeable of our needs. We tell them what we are trying to do and

what we need to make it happen. They disappear and come back with something we can work with. Because this team makes tooling for everyone at Duncan Aviation, we couldn't get along without them." said Rob. "They are true craftsmen."

Although the work seemed rife with roadblocks at times, there was nothing that was new to Duncan Aviation—except for one. The tail of this Learjet was so badly damaged there was no choice but to replace the vertical stabilizer. "In all the years and all the Lears, we had never replaced a vertical stabilizer before," said Tim Garity. Although this was a new experience, it didn't detour, slow down or discourage anyone.

The stabilizer arrived at Duncan Aviation still attached to the severed tail section of the original aircraft. It required a significant amount of preliminary work by both the Airframe and Structures teams before it was ready for installation, including the removal of the existing tail section and a large bird nest.

To ensure that it was installed and aligned correctly, the Machine Shop was called upon again to do symmetry

checks at all angles using survey transit equipment. The depth of talent at Duncan Aviation was more than enough to install and properly align it for flight.

Team Effort

Monte Reeves believes that this project brought out the best in everyone who worked on it. Each shop worked together to prioritize the best schedule possible allowing flexibility for the unexpected. He kept track of the major milestones and communicated the need to stay on schedule. This multi-shop team effort wouldn't have been the success it was without each team working close together and respecting each others' needs. This included backing off and letting another shop have the time and space to work when necessary.

Parts were not the only challenge. Duncan Aviation's reputation for being the best at aircraft paint work also provided cause for concern. Not because of the difficulty of the work, but because at this time the paint bays were scheduled months in advance and were not as flexible. There was only one paint slot available and if the team missed it, they would have to wait 2.5 months for the next one. Everyone knew the importance of meeting this deadline and pushed hard to make it on time. The customer required the paint scheme be exactly the same as other aircraft the company owned. Through a process of matching colors and transferring patterns, this Learjet was indistinguishable among others in the same fleet and had the hallmark of all paint jobs by the best in the industry.

But there was more to this project than the exterior structure and finish.

Other shops and locations got in on the action as well. Every piece of avionics was bench-checked by the Avionics and Instruments team. In all, 22 pieces of avionics were removed, inspected, overhauled or replaced by Duncan Aviation avionics professionals. The interior had already been removed for

“Taking an airplane apart, trucking it in, putting it all back together and watching it fly out. This type of work is a one-of-a-kind opportunity.”

refurbishment prior to Katrina. After receiving it in five large crates, the Interior Completions team installed and brought the interior back to life while the Fuel team repaired leaks.

The Rapid Response Team out of Florida removed the engines before the demate for core inspection and the Accessory Shop in Battle Creek, Michigan was called in to perform the major landing gear inspections.

To say this project was just another maintenance event is like calling the Grand Canyon just another ditch. The number of Duncan Aviation team members that touched this project is too many to count, but each and every one of them stepped up and answered the

call to exceed, giving back the sky to this aircraft and providing an experience unlike any other, just like they would for any customer.

Flipping The Switch

Although everyone was confident in the work they performed, it is always a tenuous situation when it comes to flipping the switch for the very first time. Because of the initial damage to this Learjet, the power was not live to check what was working and what was not. The battery to this aircraft had not been turned on for more than nine months. But everyone breathed easier as all systems lit up and were ready for service. Only one test remained, the *stall flight*.


Stall flights are required on aircraft that have had the leading edge removed. This must be performed by a certified stall pilot with the experience to bring the aircraft safely to the ground if something isn't aligned correctly and causes the aircraft to make dangerous maneuvers in the air.

Craig Tylski, a retired Bombardier Stall Pilot, traveled to Lincoln, to do the final checks. After talking with Monte Reeves and other Team Leaders, asking them questions about the work performed and testing results, Craig climbed aboard along with Larry Bartlett, Duncan Aviation's Senior Pilot. “This says a lot about the trust these pilots have in our guys to perform quality work,” said Monte Reeves.

The first stall flight resulted in only a minor adjustment to the ailerons. After two more, the Learjet that sat through and survived a major category hurricane was cleared for safe flight.

Monte Reeves remembers the day the Learjet was released back to the owner. “He was ecstatic, like a kid who got his favorite toy back after it was lost. He was extremely satisfied with the quality of work of all the technicians and Duncan Aviation as a whole.” After a short test flight, they headed for home.

Challenges. That's what this project was all about. Each maintenance event is unique, but this had more challenges than most. “Taking an airplane apart,

trucking it in, putting it all back together and watching it fly out. This type of work is a one-of-a-kind opportunity. We may not ever see another one like it. That's what made this job fun and exciting,” said Monte. That sentiment was shared by many who worked the near 10,000 hours and six months so this Learjet 35, that was hauled by *truck* to Duncan Aviation for complete overhaul, could *fly* home. 



al stabilizer - Horizontal stabilizer - Wings - Assembled aircraft - Performed engine and airframe rns - Delivered sprank free! - NDT - Spar 5 & 7 - Engine mounts - Stab castings - Trinnion fittings - Yoke assembly - Cabin windows - Flap tracks - Spar - Skin thickness - Nose gear actua
- Nose trinnion fitting - R/lt forward montt casting attach bolts - Hydraulics - Tire change on all wheels - replaced corroded bearings and races - Repaired: spoiler actuator - MLC1 door actuator - Firehasing - ordered parts, parts, parts and more parts - Lear Engineering - Damage assessment
and more parts - Lear Engineering - Damage assessment

AOG AOG



Problems solved fast

The ability to solve any type of problem fast is rare in today's world, virtually nonexistent. It takes on a near superhero image of wonder and legend. The Flash comes to mind, a superhero who had the capacity to move at unimaginable speed to "save the day." Technology is moving humans into areas where outside-the-box vision, rather than thinking, becomes the prerequisite for a Flash-like rapid response. In aviation, no situation is more critical than the dreaded AOG. It is the one, three-letter acronym no one wants to hear or see. It is a "save the day" situation that requires immediate attention and a lightning-quick response from the most trusted name in aviation, Duncan Aviation.

877.522.0111 Ask For Engine Rapid Response

In 1998, Duncan Aviation decided that its top-rated services needed to be accessible to customers 24/7 anywhere in the world. Having major engine service centers in Lincoln, Nebraska, and Battle Creek, Michigan, along with more than 20 satellite facilities was good, but not good enough for Duncan Aviation and the thousands of customers who routinely depend on us. Operators who land at airports with little to no capacity for servicing their aircraft need fast, easy options for getting back in the air if problems arise.

To serve operators in these situations, Duncan Aviation developed Rapid Response Teams (RRT). Besides Lincoln and Battle Creek, the first RRT was located in Dallas, Texas, specializing in engines. The Engine RRT is led by Joe Stokey. Joe is on the front-line of this program, setting up the arrangements and contacting the teams.

Soon the program expanded to Denver, Chicago, Ft. Lauderdale, New York and Scottsdale. If you're AOG with an engine problem, any of these teams can make it to your location in less than 24 hours; outside the U.S. takes slightly longer, but we'll be there ASAP. To be there any faster, we'd have to follow you on your trips!

The Engine RRT has 13 technicians whose primary passion is to be ready to get Duncan Aviation customers or anyone else out of a jam, anywhere on the planet. Since inception, this team has performed more than 2,700 of these special AOG events. That's a lot of relieved operators! Duncan Aviation's Engine RRT has capabilities on all Honeywell APUs and 731 and 738 engines, all Pratt & Whitney turbofans, GE 734 engines and Williams FJ44 engines. Although the RRT technicians are experts in their own right, Duncan

Aviation believes in talking through a problem as extensively as possible, so the field technicians also rely on the deep experience of our engine technical experts in Lincoln and Battle Creek.

A regular Duncan Aviation customer recently acquired first-hand knowledge of just how good the Engine RRTs are, in Japan! After being called, the RRT got this customer back in the air and back to the U.S.

Duncan Aviation customers tell many of their peers about their RRT experiences and that is promoting a rise in calls from operators who are not as familiar with Duncan Aviation services calling for field help with engine AOG situations. "We have great engine rapid response team members. I've never worked with a better group of aviation professionals; they're very talented technicians," Stokey imparts.

877.522.0111 Ask For Airframe Rapid Response

Of course engines aren't the only aircraft system that might fail or be damaged in the field; airframe issues can also arise. So Duncan Aviation provides 24/7 airframe support out of Lincoln and Battle Creek. With more service authorizations than any other company in the world, Duncan Aviation has the technical experience to support nearly any type of corporate aircraft including Astra/Westwinds, Challengers,

Citations, Falcons, Gulfstreams, Hawkers, Learjets and Embraer. This type of support can only be accomplished by people who are totally devoted to aviation and who know how to build a team of technicians who are committed to customer service.

Duncan Aviation technicians in Battle Creek recently assisted a long-time customer and tenant of our Kalamazoo facility after a tug came

loose from their aircraft, scraped the left side of the fuselage and damaged the left wing during a trip to Florida. The Battle Creek RRT immediately went into action to help the customer get the aircraft back to Kalamazoo.

It is not unusual for Duncan Aviation to dispatch its own aircraft to expedite AOG repairs and possibly transport passengers to their next destination. Airframe RRTs have been dispatched

throughout the world to places like Brazil, Egypt and many countries in Europe. In fact, because of Duncan Aviation's service authorizations, many OEMs use Duncan Aviation for AOG situations if their resources are stretched too thin. OEMs trust Duncan Aviation to get there fast, assess the situation and make the necessary

repairs to keep aircraft flying. That's one of the reasons we have these authorizations, the fact that customers rely on close coordination with the OEMs.

Beyond a serious AOG situation, Duncan Aviation's RRTs have performed many minor inspections, service bulletins, pre-buy evaluations

and those all-important damage assessments. Duncan Aviation's vast, worldwide network of aviation contacts, vendors and OEM relationships makes the company the first choice for stranded and distressed operators.

Parts, Components and Services (PCS)


877.PCS.QUIK or 800.LOANERS

Not every AOG situation requires a team to be dispatched. Sometimes operators simply need a fast and accurate response for an exchange, loaner, repair or overhaul. Heading off an AOG event could be as simple as getting some technical advice.

Duncan Aviation's new Parts, Components and Services (PCS) has streamlined the operations of our former Parts Support Services and Component Services areas to provide customer-friendly, comprehensive solutions to aircraft operators with any need. PCS consists of two cross-trained teams who are able to utilize all the resources of Duncan Aviation to solve a wider variety of your aviation problems than ever before. Both teams are comprised of some of the brightest people in aviation today, completely dedicated to only one thing: Keeping you in the air! One call to

877.PCS.QUIK (877.727.7845) or 800.LOANERS unleashes all the services that these two teams provide, allowing you to change your concept of "business as usual." With PCS, a universe of aviation services is at your fingertips 24/7. PCS personnel are trained to get you:

- Exchanges, Rotables & Time and Material Exchanges
- Avionics, Instrument and Accessory Loaners
- All Components, Avionics, Instrument or Accessory Repairs or Overhauls
- Propeller Service
- Locator Service
- Technical Advice
- An Outlet to Sell or Consign Parts to PCS
- A Robust Network of Satellite Shops

When you're AOG or in critical need, all you need to remember is Duncan Aviation will find a way to solve the problem. Duncan Aviation's RRTs and PCS are almost like having a combination personal technician / tech rep / supplier with you on your flight—except you don't have to feed them! 



Checked your **Drawers** lately

That screwdriver that mysteriously went missing from the toolbox, a scrap of wire or a pack of Lifesavers might not look threatening. But as any A&P Technician will tell you, anything that's somewhere it doesn't belong sets the stage for a potentially dangerous situation. Such objects are known as FOD, and Duncan Aviation's technicians are finding more of them more frequently.

It's common knowledge that any foreign object in, on or around an aircraft can have tragic results. Yet Duncan Aviation's Airframe Technicians have discovered many of these objects during recent inspections across all makes and models of aircraft. Everything from small bits of trash to misplaced pieces of on-board equipment have been found trapped under floorboards and lying on top of wire bundles.

Vigilance to the task at hand can eliminate many forms of FOD.

it can lead to an extremely serious situation. FOD comes in many forms—typically debris from other aircraft. It can be nothing more than a small rivet or any other type of object on the ramp or runway. Tire punctures are common with runway FOD. Hopefully this type of debris is caught during pre-flight inspections and the result is only an inexpensive tire replacement and not a

The definitions of FOD can be as varied as the objects that can cause it: Foreign Object Damage, Foreign Object Debris, etc. One thing all aviation experts agree on is that if FOD is in your aircraft or if it affects the external areas of your aircraft

blowout during takeoff. Consider the case of runway FOD affecting a French Concorde flight several years ago. The aircraft was brought down by a piece of titanium that came from a thrust reverser

of a DC-10 which had taken off ahead of the Concorde. This caused a tire on the Concorde to shred and puncture a fuel tank upon takeoff, leading to a catastrophic failure.

External FOD can come from any object flying or floating in the air, such as "bird strikes." Bird strikes are common around bird fly-way areas along rivers or lakes. A B-1 bomber once flew into a flock of geese moments after it lifted from the ground. Many geese struck the leading edge of the wings. Unfortunately, the primary, secondary and backup hydraulic system lines were all positioned within inches of each other

that section of the wing. The bird struck and dented the aircraft skin, which in turn dented the hydraulic lines and caused a loss of pressure in all three systems. The



Duncan Aviation's technicians found this red Auxiliary Gear Handle (which belongs to the aircraft) sitting on top of the flight control pulleys.

aircraft became uncontrollable and crashed. Other external examples of FOD can be blowing sand, dust or volcanic ash and wildlife on or near runways.

Internal FOD can result from work crews leaving an object trapped behind a panel or floorboard somewhere on the aircraft. It can even be a part of the airplane that was moved and not returned to its proper place.

During inspections, Duncan Aviation technicians have discovered items ranging from tie-raps, avionic control buttons, pencils and even an auxiliary gear handle that was lying on top of the flight control pulleys under the co-pilot

floor. Any FOD trapped under floorboards can be a potential hazard to the safe operation of an aircraft. Sharp objects found lying on wire bundles, hydraulic lines, pitot / static lines, etc., are especially dangerous and can have a chafing potential which can again lead to a catastrophic failure.

Consider this fictional nightmare scenario: After a maintenance event, an auxiliary gear handle is left under the pilot's floor lying on top of the flight control pulleys. The crew has done a thorough preflight, but does not have X-ray vision and has no idea what's below them. They start down the runway for the flight home and just as the PNF (pilot not flying) calls V1 (the decision speed to abort the takeoff or fly) one engine quits, so the PF (pilot flying) immediately adds rudder for directional control. The auxiliary gear handle slips from its resting place due to the abnormal side loads and wedges into the rudder cables. The rudder is designed to travel a set number of degrees to give a pilot the required directional control at the speed above V1. Since the handle is now restricting

the designed amount of deflection, the pilot's only option is to reduce power on the good engine to match what rudder is available and PRAY that is enough.

Depending on the type of FOD, a loss of any system aboard an airplane is possible. This can lead to a life-threatening scenario during takeoff, flight and landing. Normally these types of FOD issues don't arise because of the professional training and maintenance ethics of A&Ps. Vigilance to the task at hand can eliminate many forms of FOD.

When it comes to FOD, carelessness should never be tolerated and strict procedures must be followed. Duncan Aviation is extremely serious about FOD and has an inspection system in place that is strictly adhered to in order to ensure that all foreign objects, regardless of area of origination, are secured prior to panel / floor close up. At Duncan Aviation a task on or around an aircraft is not completed until FOD is eliminated. Make sure to review the FOD procedures at any maintenance facility you might choose and make sure they take FOD as seriously as they should.



The damage to the TFE731 engine above was caused by a bird strike. Duncan Aviation's technicians found damage to the fan blades, nose cowl leading edge, fan stator, and compressor impeller... just to name a few. Depending on the strike, one bird can cause more than half-a-million dollars in damages.

OH... FOD!

Engine FOD Potentially Catastrophic

Engine FOD can be the most dangerous of all FOD. Any material that rips through any engine can cause a catastrophic failure. Engine FOD is both internal and external. Internal FOD can be mitigated through the use of strict procedures. (Check to see the procedures your service provider uses.) External FOD requires proper planning and observation to eliminate.

Internal FOD may include any tool, part or anything a technician may use while servicing an engine. Rivets are common FOD elements for engines. Years ago, a chief pilot decided to test his flight crew's FOD procedures by placing his hat inside an engine intake. Before he could warn them of his plan, they tested the engine. Several thousand dollars of damage resulted.

External FOD is much more dangerous if the aircraft is in flight. External FOD may include airborne debris such as a sand storm or volcanic ash from an eruption or even hail or ice ingestion. Be aware of FAA NOTAMs in the area of your flight plan. Also be careful when taxiing behind large aircraft as their jet blast and general size can kick up quite a bit of debris.



THE FIRST CHALLENGER^e

Duncan Aviation released the first Challenger^e during the summer of 2007. The 601 was retrofitted with the Universal EFI-890. In addition to this Glass Box cockpit enhancement, the Challenger was refurbished with a complete new interior featuring the latest textures and materials uniquely conceptualized by a Duncan Aviation designer. To view the pictures and read more about the transformation, visit www.DuncanAviation.aero.

DUNCAN AVIATION PRESENTS
THE GLASS BOX PROJECT

BACK IN BLACK

ASTRA^e

PART 3 OF A 3-PART SERIES




The Astra flight deck is *Back in Black* and features the latest Rockwell Collins Pro Line 21 IDS flight display system with XM weather and Jeppesen charts on the panel. This sleek panel design gives the look and feel of a new aircraft. It includes the most recent version 5 software adding new features such as space saving Engine Indication on the MFD and an ADI that extends “wall to wall.” The Pro Line 21 IDS integrates with existing sensors, radios, flight management systems and autopilots, adding safety and value to the aircraft. Corbin McNeill’s (owner/operator) Astra^e has been upgraded with new Collins TCAS, AHARS and RTUs currently found on the SPX and G100 airframes. His aircraft also has been upgraded with a new Iridium telephone. Corbin selected Aircell Axxess for its two-channel satcom capabilities and its growth path to Wi-Fi broadband data connectivity next year.

This completes the second Astra^e by Duncan Aviation. Currently, Corbin is enjoying his newly refurbished Astra^e in comfort and style with added safety for his crew and passengers.

“My experience with Duncan Aviation (and it is my first experience) has been quite excellent. They brokered the purchase of the Astra, conducted the pre-buy inspection and in addition to the extensive modifications, have done routine maintenance on the

aircraft. Because of their extensive experience and detailed knowledge of the Astra I intend to make Duncan Aviation my principle maintenance provider. Also, Duncan Aviation brokered the sale of my Cessna Citation CJ2, so I really had a total package deal that made my involvement much simpler.”

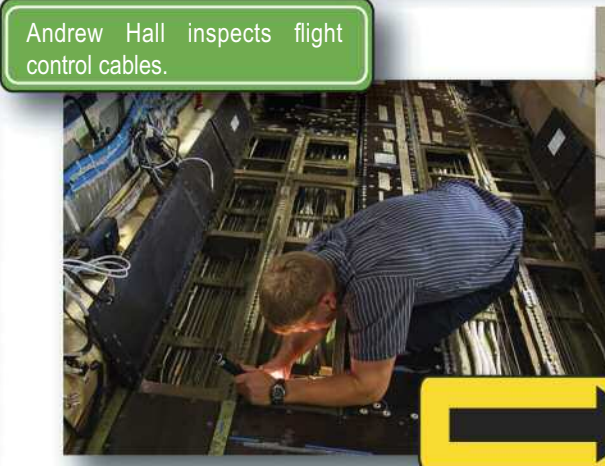
When contemplating an upgrade for your Astra consider the emerging ^e program here at Duncan Aviation. “With the sustained high prices for new aircraft, refitting an Astra to an Astra^e is a sensible alternative that can provide long-range, comfortable transportation integrated with the most modern avionics that greatly enhance situational awareness and safety. It is particularly appealing to an owner/operator who sees first-hand the advantages of these modern avionics,” said Corbin. The added benefits of greater aircraft value and extended warranties to the purchaser on value added packages make the program a uniquely feasible option. The experience, skills and knowledge of our Astra team is unmatched and worthy of your trust for maintenance and refurbishment needs.

For more information on the ^e program or other cockpit needs, please contact Andy Biller or Steve Eloffson at 800.228.4277 or Dennis DeCook at 800.525.2376. 

LOOKING FOR A HOME



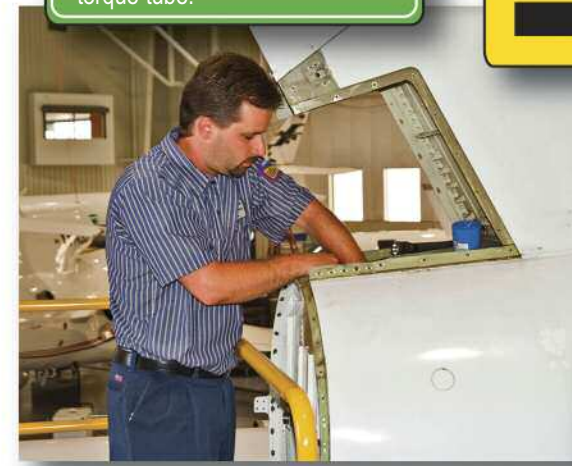
Scott Hunt performs a wing internal inspection.



Andrew Hall inspects flight control cables.



David Gurtowsky inspects the top of the horizontal stabilizer.



John Kauppila installs a rudder torque tube.



Kevin Teitsma makes repairs to a composite floorboard.



Roger Mathewson repairs the skin of a wing trailing edge.

96-month inspection

With the aging of the GV fleet, operators are looking around for alternatives to factory service. Some turn inward—a few large flight departments are comfortable with performing some inspections themselves. Others are seeking a new service home for the care of their valuable asset.

One of the largest inspections looming for many GV operators is the 96-month inspection. This 580-man-hour event opens up areas of the aircraft that have not been seen during earlier inspections, including wing internal inspections and under-floorboard inspections. Most of the interior comes out

for the job and just handling the removal and reinstallation of the large interior can take a great deal of time without an experienced team.

Gulfstream operators know that time is one of the most valuable assets in a flight department, and having your aircraft down for two months to perform this complex inspection is not a good use of time. An experienced service center can perform this inspection in three weeks.

But three weeks is still a chunk of time out of the life of your aircraft. How do you make the most of it? At eight years old, the aircraft is overdue for paint and interior if it has not been

refurbished previously. Paint and interior refurbishment will add downtime, but one downtime is better than two or three separate events. Some things that can be accomplished in the three-week downtime are avionics items such as phone system and cabin entertainment upgrades. With proper planning, some minor interior items can also be addressed such as carpet replacement and minor repairs.

Perhaps the best use of the time is to find a home for your aircraft that can perform the inspection quickly and at the same time take care of all of your other requests, all under one roof. The downtime will be shorter and time will be saved by

not having to coordinate work with multiple service providers.

Most of all, you want to feel confident in your choice—confident that your new service home is a place where you feel welcome and where the people working on your aircraft are knowledgeable and happy. Once you find such a place, you may never look around again.



"I want to thank the entire Duncan Aviation team for their efforts to make our aircraft the nicest Excel operating today. I had the opportunity to show the aircraft to our CEO and he was quite overwhelmed with the change. It is truly a beautiful job that we are very proud of, and you should be as well. Please let all that worked on the aircraft know how happy we are with the quality of work and, of course, the on time delivery."

Mark S. Charney, Director of Aviation

The Seven-Year Itch

Many factors determine the life of an aircraft interior—passenger loads, flight hours and its use. In general, however, seven years is more than the typical interval between refurbishments for a corporate aircraft. In only four to five years of average corporate usage levels, the wear and tear that has taken place inside the aircraft begins to show. The seats are worn around the edges, the carpet has a traffic pattern and the color scheme and seat design may be dated. Aside from the visible deterioration of the materials, some of the interior mechanisms will show signs of age. Moving parts wear out—latches, slides, window shade mechanisms, seat mechanisms and tambour doors all have a life limit. By the seven-year mark, most owners are overdue and itching to take care of the cosmetic and mechanical annoyances.

On paper, this Citation Excel looks almost as good as new. It is only seven years old and meticulously cared for throughout its short life. But the owner had the Seven-Year Itch: it was time to give the interior and exterior a full refurbishment while at the same time adding some luxury upgrades to a very basic interior.

If five years or more have come and gone since you last updated your aircraft's interior and you are evaluating the value of a refurbishment, consider this: your aircraft should be a reflection of its use, its passengers and its value. What does your aircraft say about you?



Refurb features:

- A full interior refurbishment including headliner, cabin windowline, lower sidewalls, curtains, seats and installation of a new custom carpet.

- Full veneer of all of the cabinetry in Birdseye Maple with a high gloss finish.

- New and redesigned cabinetry including a Jepp cabinet modification, two new tables and a new magazine rack.

- New plating with a polished gold finish.

- New lavatory sink fabrication and installation. This alone was a major upgrade: new plumbing, a drain and a heated water tank had to be added. The new sink and cabinet were fabricated and a one-of-a-kind faucet was designed. All of it was created and installed on-site by Duncan Aviation experts.

- A second Universal FMS was installed in the cockpit. In the cabin, many entertainment upgrades were completed including ALTO speakers, Rosenview LX moving map, Rosen bulkhead monitor, entertainment switching and Rosen monitor bases at six seat positions with two monitors installed.

- Full exterior refurbishment.

Before



A new Wave in aircraft audio quality:


ALTO bills itself as "audio designed with your aircraft in mind." And customer experience proves that. Expectations of entertainment system sound quality in an aircraft in flight are not high. But ALTO has set a new benchmark. Their custom-engineered audio systems are designed to deliver sound that will give passengers a whole new aircraft entertainment experience. ALTO's unique methods – cabin acoustic mapping, premium equipment and incorporating the unique needs of each listener – result in an aircraft audio experience rivaling some of the best home entertainment systems.

An International Nesting Ground

If there is one thing an international customer wants, it's efficiency. International customers in particular prefer to have everything handled at the facility they choose, not sent out to dozens of shops. They want options for their workscope and the best technical people in the industry handling their aircraft. International governments want a U.S. partner they can rely on; one that understands their particular needs. Maybe that's why Duncan Aviation's international business has more than quadrupled over the last several years. We meet the needs of our international friends.

There are many aircraft that operate outside the U.S. They are highly prized tools of governments as well as business. They transport dignitaries, perform military operations and fly government officials all over the world. Because Duncan Aviation had the insight years ago to organize an international marketing division and install a dedicated Government Programs department that works with governments worldwide, the company has the ability to work

effectively in the international arena. Duncan Aviation has worked with the governments of Egypt, Norway, South Africa, Venezuela and others to help maintain their Falcon aircraft. These governments and many businesses have used Duncan Aviation's top-rated services in airframe maintenance and inspections, engines, interiors, paint, avionics installations (Glass Box) and Parts, Components and Services (PCS).

Because Duncan Aviation does business in more than 90 different countries, we have the experience it takes to work with our many international customers. Confidence is a word that means a lot to an international customer. Operators throughout the world have confidence in Duncan Aviation because our international marketing expertise understands the intricate diversity of cultures around the planet. So whether your title includes being the King and Queen of Norway, a government official of the Arab Republic of Egypt or the Chief Pilot of ConAgra, Duncan Aviation is at your service! 

Foreign Falcon Connections

Norwegian Air Force (3-Falcon 20s)

- A- through C-Checks completed in-house
- Complete paint
- Major Avionics upgrades: MODE-S transponders, TCAS, UNS Dual Flight Management System, ELT installations and RSVM
- Major technical data support project (15 months)
 - o Re-write of technical manuals to comply with Norwegian operating manual requirements
 - o Validation of all electrical systems requiring mapping of all circuit breaker routings and updating electrical drawings to ATA formats

Egyptian Air Force (3-Falcon 20s)

- Major Avionics upgrades: UNS, TCAS, EGPWS, SATCOM, ELT, radios
- Worldwide AOG support: TFE731 engines shipped same day with Duncan Aviation technicians making the repairs in Cairo, Egypt
- All "depot" (heavy maintenance) work completed at Duncan Aviation headquarters in Lincoln according to OEM standards since 2000; under contract through 2013

Venezuelan Air Force (Falcon 50)

- C-Check with extensive corrosion

South African Air Force (2-Falcon 50s)

Presidential Support

- Pro Line 21 installation
- Full interior refurbishment
- Complete paint

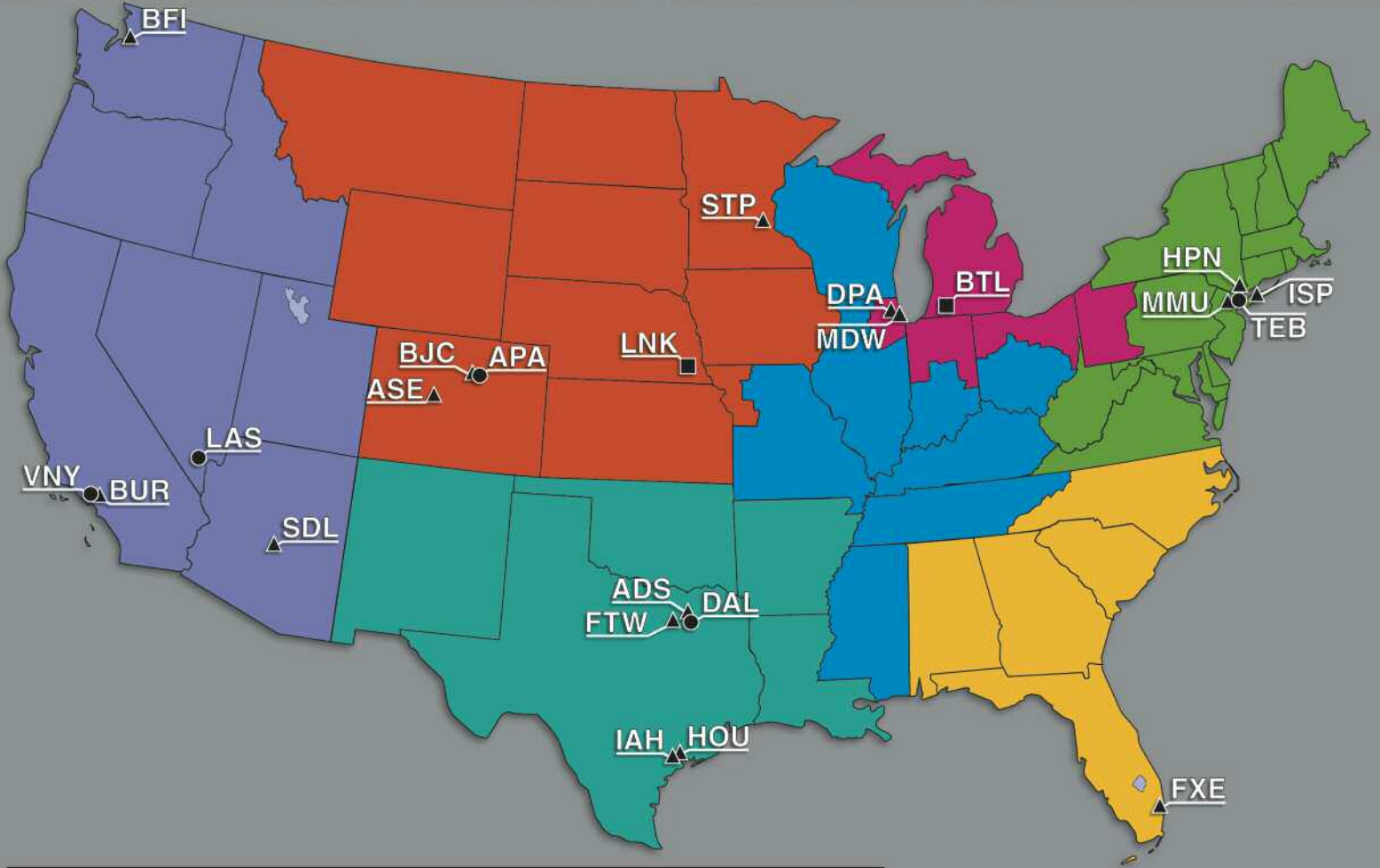
Pro Line 21 Installation



Duncan Design Collection Falcon 50 Shell Kit



DUNCAN AVIATION SERVICE FACILITIES



COMPLETE SERVICE FACILITIES

LNK	Lincoln, Nebraska	800.228.4277
BTL	Battle Creek, Michigan	800.525.2376

AVIONICS INSTALL & LINE SERVICE FACILITIES

APA	Denver, Colorado	Bob Hazy, Manager	303.649.1790
DAL	Dallas, Texas	Kent Beal, Manager	214.352.3468
LAS	Las Vegas, Nevada	Mark Francetic, Manager	702.262.6142
TEB	Teterboro, New Jersey	Jeff Glanville, Manager	201.288.1550
VNY	Van Nuys, California	Tony Russo, Manager	818.902.9961

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ASE	Aspen, Colorado	Bob Hazy, Manager	303.994.4253
BFI	Seattle, Washington	Mike White, Manager	206.764.3962
BJC	Broomfield, Colorado	Bob Hazy, Manager	303.410.7053
BUR	Burbank, California	Tony Russo, Manager	818.955.8413
DPA	West Chicago, Illinois	Derrick Hayden, Manager	630.444.0650
FTW	Ft. Worth, Texas	Kent Beal, Manager	817.740.9266
FXE	Ft. Lauderdale, Florida	Brian Redondo, Manager	954.771.6007
HOU	Houston, Texas	Sean Maddox, Manager	713.644.0352
HPN	White Plains, New York	Ernie Della Vecchia, Manager	914.686.8294
IAH	Bush Intercontinental, Texas	Sean Maddox, Manager	281.821.2689
ISP	Long Island, New York	Matt Nelson, Manager	631.981.1080
MDW	Chicago, Illinois	Derrick Hayden, Manager	773.284.4600
MMU	Morristown, New Jersey	Jeff Glanville, Manager	973.326.1110
SDL	Scottsdale, Arizona	Jim Davis, Manager	480.922.3575
STP	St. Paul, Minnesota	Jeff Delisle, Manager	651.209.8430

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