AVIATION News Journal
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SUN 'N FUN 2019



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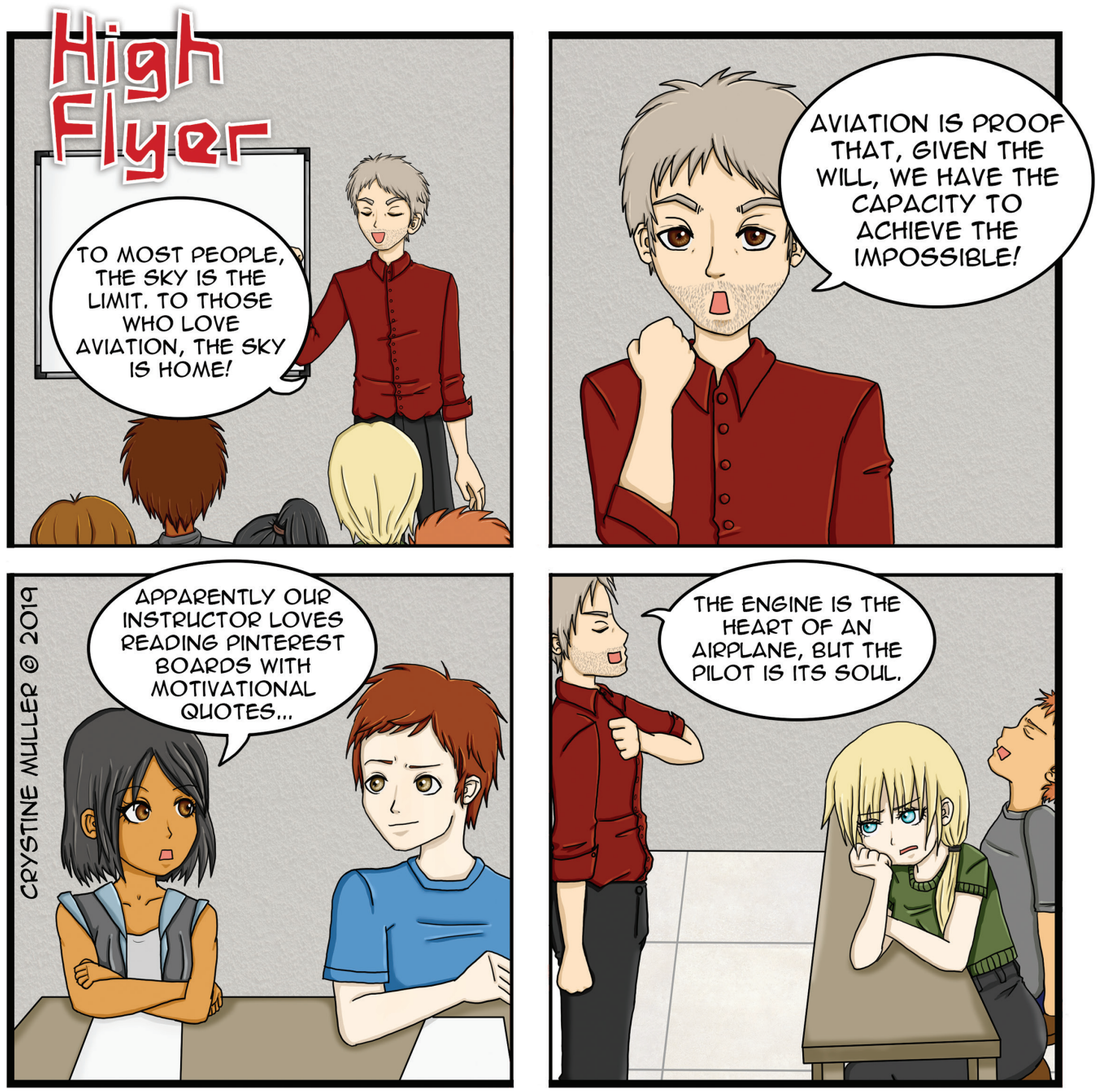
What Happens After A PROP STRIKE?

SPECIAL EDITION: 12 Pages of Airshow Photographs



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Cover: Just Aircraft SuperSTOL
This cover photograph was taken by Divan Muller at Sun 'n Fun 2019. It shows a Just Aircraft SuperSTOL completing an extremely short landing.

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From the Editor

In this issue of ANJ, we aim to share as much as possible of our experience at the Sun 'n Fun Fly-in and Expo, held at Lakeland, Florida, primarily through photography. In fact, we have dedicated almost half of this edition to the event, which has to rank as one of the best and well-organized of its kind in the world. Additionally, video footage of Sun 'n Fun has been uploaded to our website, www.aviationnewsjournal.com, as well as our YouTube account, so be sure to have a look. Many more photographs of the event are also available on our website.

There will be quite a few major airshows over the next few months, and we will strive to bring you all the action via the magazine and website.

As major aviation stories, such as the ongoing Boeing 737 MAX 8 saga, continue to dominate news headlines, let us not forget the events which took place in June, exactly 75 years ago. On June 6, 1941, D-Day, the successful Allied invasion of Normandy took place, effectively turning the tide of World War II. Canadians played no small part in this operation. According to the Royal Canadian Air Force, "39 out of 42 active squadrons overseas at the time participated in D-Day: 15 served with Bomber Command, 18 with the Second Tactical Air Force, four with Coastal Command and two in Air Defence of Great Britain.

"In human terms, this meant approximately 30,000 men and women serving in Canadian units with another 24,000 to be found in British and other Allied formations.

"Approximately 1,000 Canadian aircraft were in the air on D-Day of which seven were either shot down, listed as missing or crashed due to battle damage. Before the invasion, the Allied air forces had been informed that Operation Overlord would require a 'maximum effort' - and that is exactly what the Canadians provided."

Until next time, fly safely.
Divan Muller

AMEC/TEAC
Logo Contest

The Canadian Federation of AME Associations (CFAMEA) was created to bind the regional associations together into a cohesive working group, formed for the purpose of giving a collective voice to all Aircraft Maintenance Engineers. Our first step is to re-brand and re-focus the current framework of CFAMEA, reinstated as the Aircraft Maintenance Engineers of Canada (AMEC) - Techniciens D'Entretien D'Aeronefs du Canada (TEAC). The contest is open to the public and the winning logo will be selected in August 2019 and awarded $250.

Submission Deadline: July 31, 2019 **Email:** president@wamea.com

Aviation News

WAMEA Airworthiness Symposium and Tradeshow

From March 21 to 22, the Western Aviation Maintenance Engineers' Association (WAMEA) held its annual AME symposium and trade show in Calgary, AB. The event, one of the largest of its kind in Canada, was well attended with an impressive lineup of speakers, courses and exhibitors.

WAMEA is one of five similar associations across Canada, the others being the Atlantic, Ontario, Central and Pacific associations. These associations represent regional interests as well as concerns of national importance.

The Western AME Association is run by a volunteer group of AMEs who are elected by the member AMEs to the Board of Directors. The membership is comprised of AMEs, non-licensed personnel working in the industry, students and apprentices as well as corporate members.


WAMEA President Jarrah Elhalabi

Attendees at WAMEA's symposium and trade show benefited from various specialized courses designed specifically for those with maintenance and management duties. Courses included subjects such as auditing, insurance for AMEs and dangerous goods. More than thirty companies and organizations had show stands at the exhibition.

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First CC-295 rolls off assembly line

News and photograph courtesy of the RCAF

On March, 2019, the first of the Royal Canadian Air Force's sixteen new CC-295 fixed-wing search and rescue aircraft rolled off the assembly line in Spain, bringing the RCAF one step closer to first delivery.

This aircraft is the first of sixteen to be built following a contract award in December 2016 to Airbus Defence and Space.

The CC-295, as it has been designated by the RCAF, will replace the Buffalo and H-model Hercules fleets in the fixed-wing search and rescue role.

The RCAF will operate the new fleet from 19 Wing Comox, 17 Wing Winnipeg, 8 Wing Trenton, and 14 Wing Greenwood. A training centre for CC-295 aircrew and maintainers is also being built at 19 Wing Comox.

The first aircraft is on track to be accepted by Canada in Spain in late 2019, and to be flying in Canadian skies in the spring of 2020.

AirVenture 2019 News

Three U.S. Air Force Air Combat Command demonstration teams will be performing at EAA AirVenture Oshkosh 2019, which will be held from July 22 to 28 in Oshkosh, WI. The F-35 Lightning II, A-10 Thunderbolt II, and F-22 Raptor demo teams will perform abbreviated demonstrations as part of the daily air shows during AirVenture, as well as participate in the Air Force Heritage Flight programme. In addition, some of these aircraft will partake in the night air shows on Wednesday and Saturday of AirVenture.

Also at AirVenture, Bud Anderson, a National Aviation Hall of Fame member who was a triple ace during World War II, will be saluted during warbirds activities at Oshkosh.

The programme will be highlighted by a reunion of North American P-51 Mustangs, the aircraft flown by Anderson in his Old Crow markings during the war. EAA has invited all flying P-51 aircraft to Oshkosh for the event, particularly for a salute to Anderson during the Thursday, July 25, afternoon air show.

Those flying demonstrations are part of AirVenture's *Push to Victory* theme for World War II anniversaries, which also encompasses the 75th anniversary of the D-Day landing in Normandy.

EAA AirVenture is the world's largest gathering of warbirds with more than 300 aircraft participating in displays and flying activities each year.

Anderson, who earned more than 25 awards during his military career, served with the renowned 357th Fighter Group based in England during World War II and totaled 16.25 aerial victories. His unit was credited with more than 600 aerial victories in 15 months - the highest pace of victories during the war.

Following the war, Anderson flew and led flight test programmes in Ohio and California, and also led fighter squadrons during post-war Korea and in Vietnam. He retired from the U.S. Air Force in 1972 and worked for more than a decade in flight test operations for McDonnell Aircraft.



Bud Anderson (right) at AirVenture 2009

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PAMEA is a non-profit association comprised of aircraft maintenance engineers, aircraft maintenance personnel and aviation industry corporate members. As an active member of the Canadian Federation of AME Associations, its mission is to promote and protect the professionalism of the AME, while developing, maintaining and improving relations with regulatory bodies affecting the industry.
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SUN ‘N FUN

Fly-in and Expo

Text and photography by Divan Muller

Although not quite as famous as the Experimental Aircraft Association’s (EAA) AirVenture in Oshkosh, WI, the world’s second largest aviation expo is certainly worth attending.

US Navy Blue Angels



Kitfox

Sun ‘n Fun

From 2 to 7 April this year, the 45th annual Sun ‘n Fun Fly-In and Expo was held at Lakeland Linder International Airport, in Florida. The airport, which is located just outside the city of Lakeland, has recently been given international status and is home to the well-known ‘hurricane hunters’ of the National Oceanic and Atmospheric Administration (NOAA).

The first Sun ‘n Fun event was organized in 1974 by the Lakeland chapter of the EAA. The event grew at a steady pace and by 1978 it was second only to the EAA’s convention in Oshkosh, in terms of size. In 2004, Sun ‘n Fun was separated from the EAA, making it an independent organization which was no longer affiliated with the EAA. That said, the two organizations continue to work together to achieve common goals, such as promoting aviation to the next generation of potential pilots. In the words of EAA CEO and chairman Jack Pelton, “Along with our EAA programmes, there are marvellous aviation educational programmes created right here by our friends at Sun ‘n Fun, the Lakeland Aero Club and the Aerospace Centre for Excellence (ACE), plus those from multiple other organizations.

“All of us understand the importance of introducing these opportunities to young people. Just as each of us came to aviation via our own experiences, these activities are doing the real work of providing today’s pathways.”

He continued, “Sun ‘n Fun is one of those places where we can enjoy the legacy of the more than 100 years of flight that came before us, while also looking forward to what is next. A great part of that responsibility is ensuring that there must be a ‘next’.”

Sun ‘n Fun serves as a fundraiser for ACE, its educational component. Every year, Sun ‘n Fun makes hundreds of thousands of dollars of scholarship funds available to students aiming to pursue a career in the aerospace industry.

Sights and Sounds

With this year’s theme ‘First in Fun – Fast in Flight’, Sun ‘n Fun was attended by more than 200 000 pilots and enthusiasts. More than 3 500 volunteers worked to ensure the event’s success. About forty Royal Air Force Cadets from the southeast of England joined the ranks of volunteers. This was the 25th year the cadets have served at Sun ‘n Fun.

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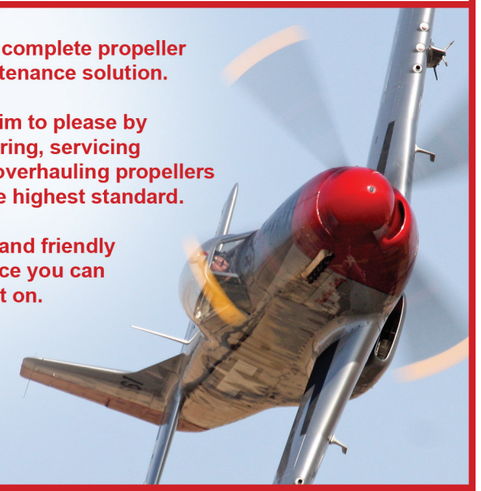

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This year also marked the 25th anniversary of Sun 'n Fun Radio, which was originally created to keep airshow attendees with hearing impairments informed. At the time, hearing aids were not compatible with public address systems.

In terms of international visitors, more than 400 Brazilians attended Sun 'n Fun, while about 230 and 110 people travelled from Canada and England respectively.

To those who have attended the AirVenture at Oshkosh, Sun 'n Fun would present a familiar atmosphere, albeit on a smaller scale. About 500 exhibitors had a wide variety of aircraft and related products on display, while long lines of visiting aircraft, many with tents pitched next to them, were parked at the airport. On the opening day of the show, one of the exhibiting companies, Piper Aircraft, unveiled its VFR (Visual Flight Rules) Piper Pilot 100 and IFR (Instrument Flight Rules) Pilot 100i aircraft, specifically designed to serve as training aircraft.

More than 300 forums and workshop sessions, covering subjects such as metal fabrication, avionics installations, fabric aircraft covering and safety wiring, were presented throughout the event. Recreational pilots were able to shop at the Light Sport Aircraft (LSA) Mall at Paradise City, an area dedicated to the fun side of flight. Before and after each daily airshow, LSAs, microlights, autogyros and Short Take-Off and Landing (STOL) aircraft could be seen in action at Paradise City's small grass runway.

In addition to the numerous commercial exhibits, there were dozens of warbirds and modern military aircraft on display. For example, a B-17F of the movie Memphis Belle was on static display and available for fun flights. Other warbirds included A-1 Skyraiders, T-28 Trojans, P-51 Mustangs, a B-25 Mitchell, a P-40 Warhawk, the world's sole surviving XP-82 Twin Mustang and an F4U Corsair, to name a few. In terms modern military aircraft, enthusiasts were able to view aircraft such as F-35 Lightning IIs, F/A-18 Hornet and Super Hornet fighters, a C-17 Globemaster III transport aircraft, a KC-135 Stratotanker, as well as an MV-22 Osprey. Various helicopters, such as an AH-64 Apache and CH-47G Chinook could also be seen.

Daily airshows primarily included aerobatic aircraft, many of which have performed at AirVenture, as well as special

Main photograph: C-47 Tico Belle participated in the D-Day invasion of 1944. Later that year, she participated in Operation Dragoon, Operation Market Garden, the relief of Bastogne during the Battle of the Bulge, and Operation Varsity.





Bell Huey



F-16 Viper demonstration aircraft

warbird displays. Heritage flights, with formations of older and modern military aircraft were quite popular, as were displays by the F-16 Viper Demo Team. However, it was the US Navy's Blue Angels Demonstration Squadron that dominated the show. The team's six F/A-18 Hornets performed stunning aerobatic manoeuvres in a breath-taking display of power and precision. Supplementing the daily airshows, two night shows were held over the course of the week. The combination of formation aerobatics, pyrotechnics and fireworks is always something to behold.

That's All Brother

One of the Douglas C-47s on display at Sun 'n Fun had a truly remarkable history. The aircraft, named 'That's All Brother', led the main airborne invasion on D-Day, 6 June 1944, over Normandy, France, in World War II. The aircraft forms part of the D-Day Squadron, which aims to fly eighteen DC-3s and C-47s across the North Atlantic Ocean, to participate in the 75th anniversary of the invasion of Normandy. The D-Day Squadron will be flying from the USA to England, where the aircraft will be joined by about thirty C-47s and DC-3 from other parts of the world, some as far as Russia and South Africa. After participating in the D-Day anniversary, the aircraft will fly to Germany to commemorate the 70th anniversary of the Berlin Airlift.

Main photograph: The AirCam was originally designed to serve as a photography platform for National Geographic in the Congo Basin in Central Africa.



C-47 That's All Brother



Left: Gary Hillman, based at Red Deer Airport, AB, presented a workshop on fabric covering



T-45 Goshawk and A-1 Skyraider



KC-135



Rans S-12 displaying a Viking 90 engine



AeroShell Aerobatic Team

Main photograph: Blue Angels



Franklin Demon-1



Gene Soucy's Showcat



An F-35 with a night show's fireworks display



Wayne Toddun and Jean d'Assonville

Sling TSi

A South African-designed Sling TSi flew to Sun 'n Fun all the way from the Sling Pilot Academy in California. The aircraft was flown by Co-CEO at Sling Pilot Academy Wayne Toddun and technical director at The Airplane Factory Jean d'Assonville. The Rotax 915iS-powered aircraft completed the non-stop 1 900 nm flight in 13.5 hours. The aircraft was flown at a speed of 155 kts at 17 500 ft, until bad weather forced a change of altitude. The two pilots opted to fly at low level, where the air was calmer, despite being less fuel-efficient. Nevertheless, they arrived safely at Lakeland after an impressive flight. Jean d'Assonville is no stranger to epic long-distance flights, having completed round-the-world flights in Sling aircraft.

The Future

According to Sun 'n Fun's newly appointed chairman of the board Harley Richards, there has been tremendous growth over the past six years. He added that there will be even more growth in the next six years. At the end of this year's Sun 'n Fun, a new name was unveiled for the event: Sun 'n Fun Aerospace Expo. According to Sun 'n Fun President John Leenhouts, "Renaming this iconic aviation event reflects our mission to engage, educate and accelerate the next generation of aerospace professionals."

Next year, Sun 'n Fun will take place from 31 March to 5 April.



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Aircraft That Could Have CHANGED HISTORY

Text by Divan Muller

History is filled with examples of cancelled aircraft programmes. Perhaps we should be grateful that some aircraft never entered production. The Royal Aircraft Factory B.E.9, for example, had a tandem configuration, in which the engine and propeller were located between the pilot and observer's respective cockpits. Suffice to say it was an extremely dangerous configuration. On the other hand, some truly brilliant aircraft designs did not enter production either. Let us look at some examples.



Fairey Rotodyne - J Thinesen, SFF photo archive

Fairey Rotodyne

Developed during the early 1950s, the Fairey Rotodyne was a convertiplane, combining the flight characteristics of a helicopter and autogyro. With seating capacity for more than forty passengers, the Rotodyne was essentially a small airliner. It was powered by two Napier Eland turboprop engines, providing 2 800 shp each. In forward flight, four large rotor blades spun freely, as with normal autogyros, but during take offs and landings, the rotor was powered by compressed air. To achieve this, the air was channelled through tubes inside the rotor blades, exiting through rotor tip combustion chambers. The Rotodyne completed its maiden flight on 6 November 1957. It had a top speed of more than 160 kts and a range of 725 km.

Work on a larger version, capable of carrying 75 passengers and powered by Rolls-Royce Tyne turboprops commenced, but the programme was cancelled in 1962. The most common reason given for the cancellation was the fact that, as a tipjet rotorcraft, the Rotodyne was incredibly noisy during take-offs and landings. However, the aircraft was funded by the British government, which may have scrapped the programme due to a lack of interest from prospective operators.

Avro Canada CF-105 Arrow

Also during the 1950s, while Fairey engineers were working on the Rotodyne, Avro Canada focussed on developing an advanced interceptor, which it named the CF-105 Arrow. Due



Avro Arrow

to the urgency of the Royal Canadian Air Force's requirement for an interceptor, it was decided that a production line would be set up before the prototype aircraft were built. The first few production aircraft would then be used as prototypes. This was a risky approach, but it was necessary to save time. The Arrow first flew on 25 March 1958, with experienced test pilot Janusz Zurakowski at the controls. On its third test flight, the Arrow exceeded the speed of sound while in a steep climb. Designed to intercept Soviet bombers, the Arrow was a technological marvel. It was the world's first fly-by-wire aircraft. It had a top speed of Mach 2.4 and could accelerate from idle on a runway to Mach 0.92 in only 90 seconds. After only 72 hours of flight testing, the Arrow met 95% of its intended design specifications. Then disaster struck. The Canadian government cancelled the Arrow programme and ordered the destruction of all complete and incomplete Arrows, along with all engines, test data, design documentation and production tooling. More than 14 000 Avro employees lost their jobs, with many thousands more in supply chains also becoming unemployed. For the next two and a half years, during the height of the Cold War, Canada was left defenceless against Soviet bombers.

British Aircraft Corporation TSR-2

At the same time as the CF-105 Arrow was cancelled in Canada, British Aircraft Corporation engineers began work on 'Tactical Strike and Reconnaissance 2', simply known as the 'TSR.2'. As a matter of interest, the reason for the '2' in 'TSR.2' remains a mystery, as there was no known 'TSR.1', but the number could have referred to its Mach 2 requirement. The TSR.2's maiden flight took place on 27 September 1964, with subsequent flight tests revealing the aircraft's astonishing performance. The large strike aircraft could easily exceed Mach 1 without the use of afterburners. Its maximum speed of about Mach 2.3 was limited by leading edge temperatures, as the TSR.2 had a theoretical top speed of Mach 3. The aircraft had similar avionics to that of later model American General Dynamics F-111s, although the former aircraft's navigation-attack system was the most sophisticated in the world at the time. The TSR.2 was powered by two powerful Bristol Siddeley Olympus engines, similar to those used by the Avro Vulcan bomber. Each of these engines produced about 30 600 lbs of thrust. In combat, the TSR.2 could carry more than 2 700 kg of conventional or nuclear weapons in an



TSR2 - Tony Hisgett

internal bay, in addition to a load of 4 500 kg on external underwing pylons. As with the Avro Arrow, the TSR.2 programme was killed by politics. Two of the completed prototypes can now be seen in British museums, but the only flying example was destroyed while in use as a gunnery target.

Boeing Sikorsky RAH-66 Comanche

The RAH-66 Comanche first flew on 4 January 1996. Today, more than twenty years later, it still looks more modern and sophisticated than any other combat helicopter in the world. The stealthy Comanche was the result of a 1980s request by the US Army, which hoped to replace its ageing fleet of Vietnam War-era light helicopters. The RAH-66's five main rotor blades with downturned tips and Fenestron-style tail rotor resulted in low acoustic signature, while several techniques, such as a radar-absorbing coating, were employed to make the helicopter stealthy. It had sophisticated avionics, a digital fly-by-wire control system and was powered by two Rolls-Royce Honeywell turboshaft engines, each providing more than 1 400 shp.

It terms of armament, the Comanche had a three-barrel 20 mm Gatling cannon, with the ability to carry up to six Hellfire anti-tank missiles or twelve Stinger air-to-air missiles in internal weapons bays. Up to eight Hellfires or sixteen Stingers could also be carried on removable stub wings. Hydra air-to-ground rockets could also be carried internally or externally. Delivery of the first of 1 213 Comanches was scheduled for 2006. However, the US Army cancelled the programme in 2004, arguing that it would be better to spend its money on more urgent needs. By then, it had spent nearly $7 billion on the development of the RAH-66.



RAH-66 - US Army

Behind the Scenes at
MAXCRAFT AVIONICS

Text and photography by Divan Muller

This year marks the 30th anniversary of the founding of Maxcraft Avionics Ltd, one of the largest and best-known avionics facilities in Canada. The ANJ team visited the company at Pitt Meadows Airport to find out more about its operations, and was given a tour of its impressive facilities.

Maxcraft Avionics Ltd was founded in 1989 at Langley Airport in British Columbia. The company started out with a single contract to provide avionics support to an operator of Sikorsky S-61 helicopters. Seven years later, Maxcraft relocated to Vancouver International Airport. At the time, the company had ten employees. By the late 2000s the company had grown tremendously in terms of staff and experience, having sent technicians all over the world to provide support to commercial aircraft operators. Then, in 2009, construction began on a specialized avionics maintenance facility at Pitt Meadows Airport, quite literally built from the ground up to provide avionics support to the industry.

Pitt Meadows Airport proved to be an ideal location for Maxcraft Avionics. Over the years, it has provided room to expand, supportive airport management and runways long enough for customers with larger aircraft. Operators of helicopters and all aircraft, from mid-size jets to high-end experimental aircraft, benefit from Maxcraft's services. About 70 percent of the company's business takes



An example of avionics installed by Maxcraft Avionics. The instrument panel was also designed and installed by Maxcraft.

Photograph courtesy of Maxcraft Avionics





Construction of Maxcraft's building at Pitt Meadows Airport in 2008. It was built specifically as a specialized avionics maintenance facility. Photographs courtesy of Maxcraft Avionics.

place at Pitt Meadows, while 20 percent takes place at its Vancouver International Airport facilities, and 10 percent at various locations around the world.

Over the past four years, Maxcraft has made use of a *trusted affiliate network* to complete work which extends beyond the scope of avionics. Only companies with a proven track record of reliability, quality work and regulatory compliance are designated as trusted affiliates. By collaborating with these companies, which include specialists in interiors, maintenance, structures and other areas, Maxcraft is able to provide comprehensive one-stop solutions. Maxcraft's facility has large hangar doors and a five-ton overhead hoist, making it possible to conduct simultaneous maintenance projects, thereby reducing downtime.

As a Transport Canada approved maintenance organization, Maxcraft holds ratings in avionics, instruments, structures, components and aircraft categories. Maxcraft's range of products and parts is staggering, with the company representing dozens of avionic manufacturers, while keeping more than 20 000 parts in its inventory. With in-house design



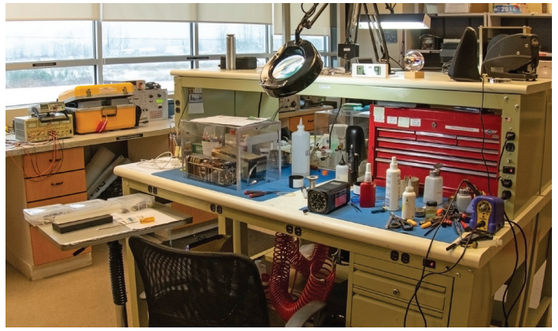


Above left: Reception area • Above right: Maxcraft Avionics Ltd's founder and president Daryl MacIntosh
Below: Maxcraft's maintenance hangar is large enough to accommodate mid-size jets, large helicopters or several GA aircraft.





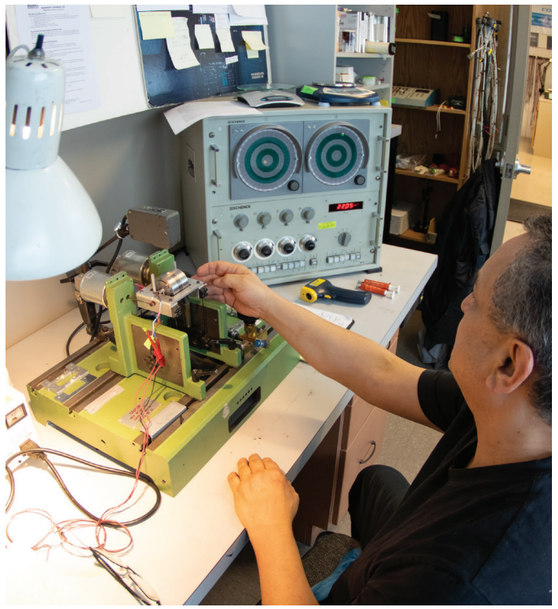


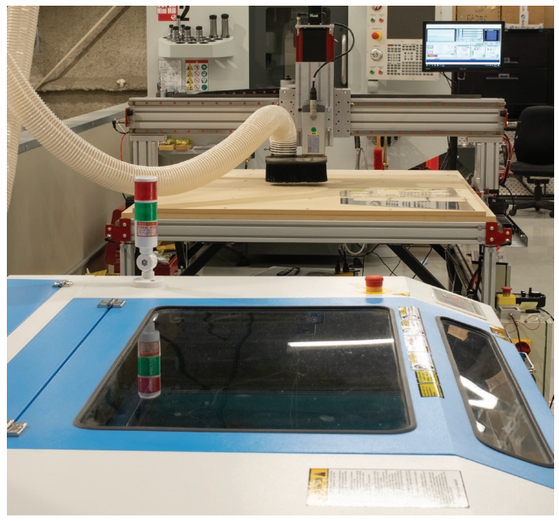


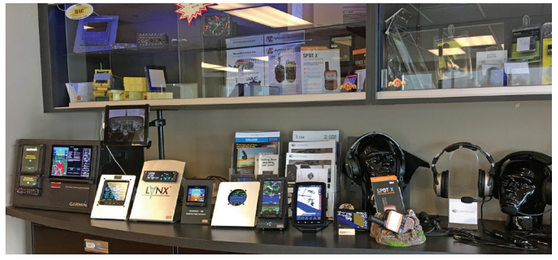
Above and right: The avionics repair department focuses on components such as radar systems, radios and navigation equipment, while the instrument repair department covers mechanical flight, navigation and engine instruments and accessories. Maxcraft technicians are also specialists in difficult-to-repair helicopter accessories.

Below right: Maxcraft sells a tremendous variety of products from leading brands around the world. Photographs courtesy of Maxcraft.

Below: At the panel production centre, technicians are able to design and built customized instrument panels. Without the need to outsource, a considerable amount of time is saved while ensuring quality.







services, STC development takes place on-site, making it easier to manage and more affordable to design and integrate navigation systems, specialized equipment or flight instrument systems, for instance. Maxcraft has invested hundreds of thousands of dollars into sophisticated custom avionics testing tools, expediting the repair of instruments, avionics and autopilot systems. Specialized digital equipment, for example, is used for accurately calibrating magnetic compasses, gyro compasses and attitude-heading reference systems. There is also a fully equipped sheet metal shop, paint shop, storage for cowlings and interior parts while work is taking place, repair shops, and the list goes on. For further details on Maxcraft's extensive range of products, services and examples of projects, visit www.maxcraft.ca

Right: Parts shipping and receiving department. Maxcraft maintains a substantial inventory of new and used avionics equipment for sale and rent.

The various rooms, offices and workshops at Maxcraft's facilities are logically laid out to improve the efficiency with which projects are managed.

Below: A laser-based marking system is used for in-house laser wire marking and cutting. Maxcraft has years of experience in completely rewiring aircraft, including helicopters such as the Bell 206, Bell 212, Sikorsky S61, Sikorsky S76A, Eurocopter (now Airbus Helicopters) AS350 and AS355.







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What Happens to a Propeller After A PROP STRIKE?

Text by Divan Muller

Bounced landings, ground loops, failure to extend landing gear… propeller strikes come in various forms and the results can be quite expensive, not to mention dangerous.

According to Lycoming, "there may be hidden internal engine damage from such an incident. From the experience of previous incidents, we know that the unseen damage to an engine by sudden stoppage or a hard ground strike has caused subsequent engine failures." This would necessitate inspections which will be covered in a future edition of ANJ.

For the purposes of this article, however, we will look specifically at what happens to the propeller itself. To find out, ANJ paid a visit to *Aero Propeller of Calgary*, near Calgary International Airport in Alberta.

"Even if the blades have not been bent by the prop strike, an overhaul is mandatory."

Combined, the company's three owners, Gord Thompson, Nash Javer and Kevin Samuel, have more than a century's experience in propeller maintenance and repairs. The company has been around for more than forty years.

A propeller strike, or momentary or sudden stoppage, happens when an aircraft's propeller impacts the ground or any object, ranging from water to hangar doors, resulting in a loss of rpm. This could be due to a hard landing or collapsed landing gear, for example. As a result, a prop strike could render parts of the propeller, or even the entire propeller, useless. Following such an incident, the propeller would have to be taken to a repair facility, where it can be inspected, and the severity of the damage can be determined to see whether the propeller can be repaired. Prop strikes lead to different kinds of damage. Metal propellers can be bent, sheared or twisted. (Composite propellers can shatter, but can also be reconstructed. *Aero Propeller of Calgary* specializes in metal propellers.) Shears or tears in a blade should not be repaired, and the blade would have to be scrapped. In fact, depending on the manufacturer, the blade *and* the hub may have to be scrapped. Depending on the brand of propeller, the length of the section of the blade which is affected is also a determining factor.

Gord Thompson, Kevin Samuel and Nash Javer



If a blade is bent within limits specified by its manufacturer, it can be straightened and the angles compared with set specifications. Even if the blades have not been bent by the prop strike, an overhaul is mandatory. Paint is removed and blades are examined to see if they had been damaged, not only by the strike, but also corrosion and extreme stresses imposed on propellers. Technicians also measure dimensions to determine whether the components can be overhauled. Once the propeller has been taken apart, the basic components are cleaned and degreased. The next step is to repair the damage and ensure that the components are within the manufacturer's dimensional limits. All major components are then sent to a certified workshop for non-destructive inspection. Next, components are polished and dipped in a solution for corrosion protection, before being painted and given a durable polyurethane coating. Finally, the propeller is reassembled and set according to the manufacturer's overhaul manual.

For further information or advice regarding propeller maintenance, please contact *Aero Propeller of Calgary* at 403-291-9400.

For regulations regarding inspections after abnormal occurrences, such as a prop strike, please visit the Canadian Aviation Regulations (CARS) section of Transport Canada's website, www.tc.gc.ca

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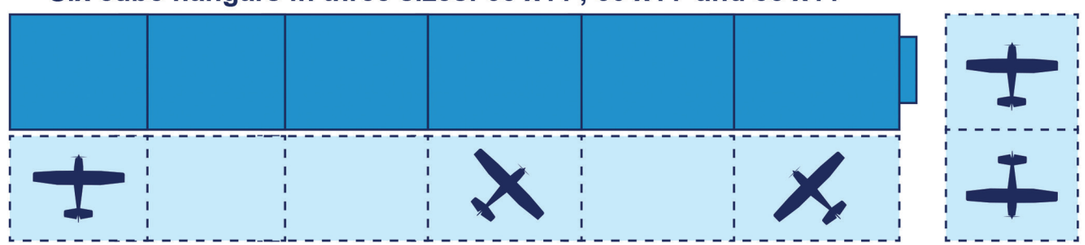

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MOVING ON UP!
Time for a Bigger Plane

By Michael Wilton of Prairie Aircraft Sales

There comes a time, when it makes sense to look to move forward from a small aircraft to a larger machine. Our upgrade epiphany came in the form of identical twin bundles of joy and a flight from Calgary to Edmonton.



We had enjoyed a lot of great flying in our Piper Cherokee 235. It was roomy and carried a lot of load, by small single standards, but with the addition of two extra humans and the associated equipment that requires, we were finding it was a struggle. We had to load two car seats in the plane, one in the front seat and one in the back, with my wife at the time trying to manage two little ones from one of the rear seats. When I mentioned an upgrade, her comment was "buy whatever you want, but I want to have club seating. That is a must for us now".

The search commenced with only that parameter initially. At the time I was not working for Prairie Aircraft Sales Ltd. so the first thing I did was engage Kathy Wrobel our president. What was our mission? What did we need to carry? Was club seating a make or break? We discussed all the possibilities from twin Cessnas and Senecas, Lances, Saratogas and Bonanzas. With a sustained mission heading over the mountains from Calgary to Victoria, regularly (we had family out there), we needed something all weather capable, turbo charged and relatively quick.

We reviewed all the available club seating airplanes. The Lance and Saratoga series was intriguing. Staying with the Piper family, club seats, good speed and load carrying were all benefits. Bonanzas were an option as well, though they demand high prices in the market for the 36 series. I also have a personal connection that does not make the aircraft my favourite, my father was killed in his just months after I was married. That didn't make it out of the question but did push me to review other options too.

Twins seemed like a viable option as well. We discussed Senecas, but most of the good ones were demanding a high price due to flight schools wanting them for training aircraft. Kathy then hit upon the possibility of a twin Cessna. I was intrigued but thought that was out of our price range and operating budget. Though much more than the single, I had no idea how capable this aircraft was at its price point. Kathy also walked me through the operating costs.

I spoke to a couple twin Cessna owners, including my brother who owns a Cessna 310R turbo. We had previously taken that plane from Ottawa to Edinburgh, Scotland, so I was confident in the capabilities. Kathy then mentioned that the price differential for both purchase and operating costs was not a huge jump to move up to a pressurized twin, i.e. the Cessna 340. With the addition of pressurization and the thought of trying to keep an oxygen mask on two squirming little ones for a 2-hour flight, we agreed that a pressurized twin would be a great benefit in our mission.

The search began in earnest. Now I must confess, I didn't do any searching at all. Kathy conducted the searching, found suitable planes in our price range and presented them to us in a package. She and I discussed the pros and cons of each one presented. In the end, Kathy was able to locate a plane right here in Calgary that had sat unused for several years since the owner had passed away. The plane had mid time engines, great paint and interior, and had extensive avionics upgrades. This included dual WAAS GPS nav/comms and a Garmin G600. It had good maintenance by quality AMEs I knew and though it was missing the US log books, the US package had been ordered from the FAA. Kathy also did extensive research to ensure there were no incidents that had not been presented. I was away with the family on vacation during the late stages and relied heavily on Kathy and our specific requirements. This meant that when we found the 340 we wanted, I was away in Florida and wasn't even able to see the plane. We struck a deal pending a pre-purchase inspection and the seller agreed to put it through an annual inspection with their maintenance facility. I was so impressed with this maintenance facility that I use them for my annuals to this day.

The pre-purchase showed no major show stoppers that would not be covered in the annual and we moved forward. The annual came up with some issues, including a faulty de-ice valve, which the sellers fixed as part of the agreement and I had some upgrades done at my cost to fix a few things I wanted changed. My final acceptance was a test flight with an instructor I knew well. This was a critical situation as I had not completed my twin rating at that time and needed someone familiar with big twins. The test flight was great, and the plane was ours.

In the meantime, I was busy pounding out my twin rating in a local flight training unit's Piper Seneca and was able to complete my flight test the weekend after we accepted the new Cessna twin. Since I was by no means safe or capable to fly this much larger machine, I conducted many hours of training for my IFR in it and lots of great cross-country flights with my instructors. They were invaluable for learning systems. The new avionics I learned by plugging in a small APU we have in our hanger and "hanger flying" the avionics. I spent so much time doing this, that at one point I could put my hand on the switches and gauges with my eyes closed. This would serve me well a few month later when we had a turbo charger fail on the left engine, which required us to shut it down in flight and shoot an approach to minimums at an unfamiliar airport. I knew the plane so well by this time, that it was a non-event. Well it was a non-event for me, my non-pilot passenger might feel differently about the whole situation!

The plane was an amazing machine. We flew all over Canada and the US. Took the family to countless vacations, Christmas get togethers and family meet ups. The costs were higher of course, but my sons grew up in the back of that plane. Our whole family could travel in comfort, over the weather and my wife could deal with anything that came up (you can use your imagination about what had to be accomplished in the back with two little kids). It was also a great load hauler for the family. In our case, with twin boys, we needed two cribs, two high chairs, countless clothes and toys. All of it went into and came out of the big Cessna. Many a ramp attendant burst out laughing watching us load or unload the "gear" required to spend even a weekend away with twin little ones.

We have since sold the big plane and purchased a Mooney (see our previous article "Where did the other prop go? (Our Mooney Story)" in this magazine. Though our mission has changed, and we no longer needed the big twin, the choice to upgrade and the assistance from a seasoned broker was key to our twin ownership experience being a positive one.

If you are looking to upgrade, or downgrade, Prairie Aircraft Sales Ltd. offers focused acquisition searches. Things have changed and I am now part of these searches for our customers. The experience of going through the process as a previous customer, means I have a unique insight into how they go and the amazing benefits that can be had from "moving on up!".

For information on purchasing and selling aircraft,
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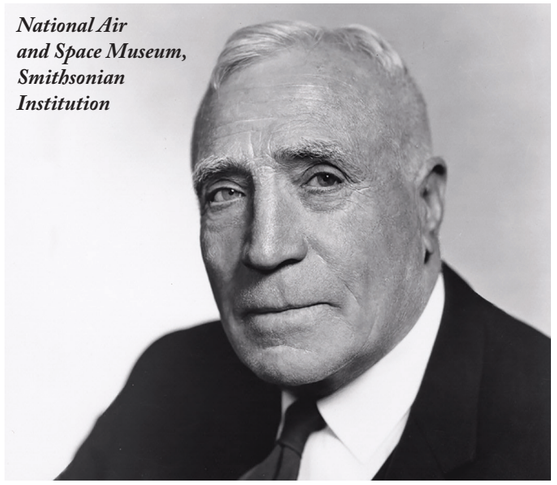
A Piper L-4, the military version of the J-3 Cub - US Air Force



National Air and Space Museum, Smithsonian Institution



Piper Cherokee Arrow - Huhu Uet

William Thomas Piper Sr. was born on 8 January 1881 in a small town in the state of New York. He served in the Spanish-American War of 1898, before studying mechanical engineering at Harvard University. He co-founded the Dallas Oil Company, before serving with the US Army's engineer corps in World War I. After the war, Piper invested in the Taylor Brothers' Aircraft Corporation and during the Great Depression, he became the company's sole owner. Piper used the company to build and sell low-cost aircraft, including the Taylor Cub. Piper aggressively promoted the Cub and its succeeding variants, even including free flying lessons with each purchase. In 1937, he renamed the company 'Piper Aircraft Corporation.' One year later, Piper introduced the J-3 Cub. With almost 20 000 examples built, it was the quintessential light aircraft of the 1940s. Piper continued to produce commercially successful aircraft, many of which remain popular to this day. For example, more than 32 000 Piper Cherokees have been built. The Cherokee, which is still in production, first flew in 1960. In 1968, William Piper retired as president of his company, while continuing to serve as chairman of the board. He died on 15 January 1970 at the age of 89. Piper was often called the 'Henry Ford of aviation,' due to his ability to make aviation more accessible to the general public.

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