



# The Stetson Flyer

July 2016 Issue: LAZY HAZY DAYS OF SUMMER

Our website address: <http://www.stetsonflyers.com>

## President's Message

Good Day

Summer is now here and I would like to take this occasion to wish all our members and families a safe and beautiful summer. Let us have fun and fly safely.

We have a number of great club events coming up and I would like to encourage all members to participate. Enter and enjoy flying in our fun fly's! We had an excellent Ed Rae Fun Fly this year and some interesting static display at the Aviation Museum on July 1<sup>st</sup>.

I would like to thank all the many volunteers who have helped us in past years and ask for their continued support. A special invite goes out to our new members to volunteer their time at these club events. There is no better way to see what's happening and get to know people than to work in an event. You become part of the action!

On a more official point, a RC airplane that crashed into an elderly couple's backyard on Princess Louise Drive in Orleans on June 27th, was being flown by a Stetson member. The Member has been contacted by the Club Executive, and the appropriate action was taken. The case is now closed. All our Club members should be aware that flying from a park, school yard or any other properties without written permission from the owner will not be covered by MAAC insurance or your home insurance unless you have specific option on your personal insurance.

As a reminder, please be familiar with The Ottawa Parks and Facilities By-Law No. 2004-276

A by-law of the City of Ottawa to regulate and to promote responsible enjoyment and use of parks and facilities

**The Council of the City of Ottawa hereby enacts as follows**

**Section 5 – "SPORTS AND ACTIVITIES"**

## STETSONS COMING EVENTS:

**Aug 13-14, 2016: Stetson IMAC Aerobatics Contest**

**Canteen and limited camping available—  
Stetson field: 5800 Frontier Road**

**Aug 27-28, 2016: Stetson Giant Scale Event**

**Canteen and limited camping available—  
Stetson field: 5800 Frontier Road**

**September 24, 2016: Stetson New Flyer Fun Fly**

**Stetson Field: 5800 Frontier Road**

**October 13, 2016: Winter Clean-up**

**Stetson Field: 5800 Frontier Road**

**(10)** No person shall operate a motor driven model airplane, helicopter, rocket or boat except in an area designated by the Director for that purpose.

*"Director"* means the Director of Parks and Recreation of the Community and Protective Services Department of the City of Ottawa or authorized designates, unless otherwise specified;

*"Park"* means a playground, playing field, ball diamond, sports field, beach including but not limited to the area of the water under the control or supervision of the City, recreation centre, community building, facility, square, garden, water, pedestrian walkway or any other area owned, leased or used by the City and devoted to active or passive recreation and includes any lane or walkway or public parking area leading thereto; (amended by By-law No. 2012-86)

*"Person"* means any individual, association, firm, partnership, corporation, agent or trustee and the heirs, executors, or other legal representatives of a person to whom the context can apply according to law;

Have a nice summer and see you at the airfield.

Daniel Marcotte, President

Stetson Flyers Model Airplane Club

613-299-1970

**Executive for 2016**

<b>President</b>	Daniel Marcotte	613-299-1970
<b>Vice-President</b>	Hal MacDonald	613-764-1950
<b>Secretary</b>	Mark Lanthier	613-262-9818
<b>Membership</b>	Daniel Marcotte	613-299-1970
<b>Treasurer</b>	Mark Lanthier	613-262-9818
<b>Events Coordinator</b>	Gary Robertson	613-746-4209

**Appointed by the Executive**

<b>Chief Flying Instructor</b>	Simon Nadler	613-883-3367
<b>Webmaster</b>	Simon Nadler	613-883-3367
<b>Newsletter</b>	Bob Myhara	613 744-1619
<b>Field Coordinators</b>	Pierre Coulombe	613-824-8942
<b>Safety Officer:</b>	Hal MacDonald	613-764-1950

**Contact your executive at:** [contact@stetsonflyers.com](mailto:contact@stetsonflyers.com)

**Snail Mail Address:**

The Stetson Flyers Model Airplane Club  
 3940 Innes Road  
 PO Box 91542  
 Ottawa ON K1W 1K0

**Club Dues 2016:**

General Member prior to April 1, 2016	\$80.00
General Member after April 1, 2016	\$100.00
Student Member: (21 Years old and under, full time student)	\$40.00
Junior Member: (18 Years old and under)	\$40.00
Family Membership prior to April 1, 2016 (Two adults plus youth/students)	\$130.00
Family Membership after April 1, 2016 (Two adults plus youth/students)	\$150.00
MAAC Membership: (required)	\$90.40

Please obtain your MAAC membership from MAAC directly. This is easily done online at [www.maac.ca](http://www.maac.ca)

**\*\*NEW\*\*** memberships after September 10th half price.  
 Not valid on renewals or lapsed memberships.

**Newsletter Questions and Answers**

**Not Getting Yours?**

Get us your correct email address and we'll get you on the list!

**Meetings:** The Stetson Flyers meet at 7:30 on the last **WEDNESDAY** of each month, except for December, May, June, July or August. The meetings are held at the Canadian Air and Space Museum in the Bush Theatre.

**Bring and Brag:**

Each meeting we encourage members and guests to bring something of interest to show to the group. It could be a new plane, a build in progress, or a demo of a technique.

**Use the FRONT door to the museum!**

Don't forget that the Aviation Museum requires us to use pay parking (\$3 for the evening) at the front of the museum and enter through the main front doors.

**Photo Credits:**

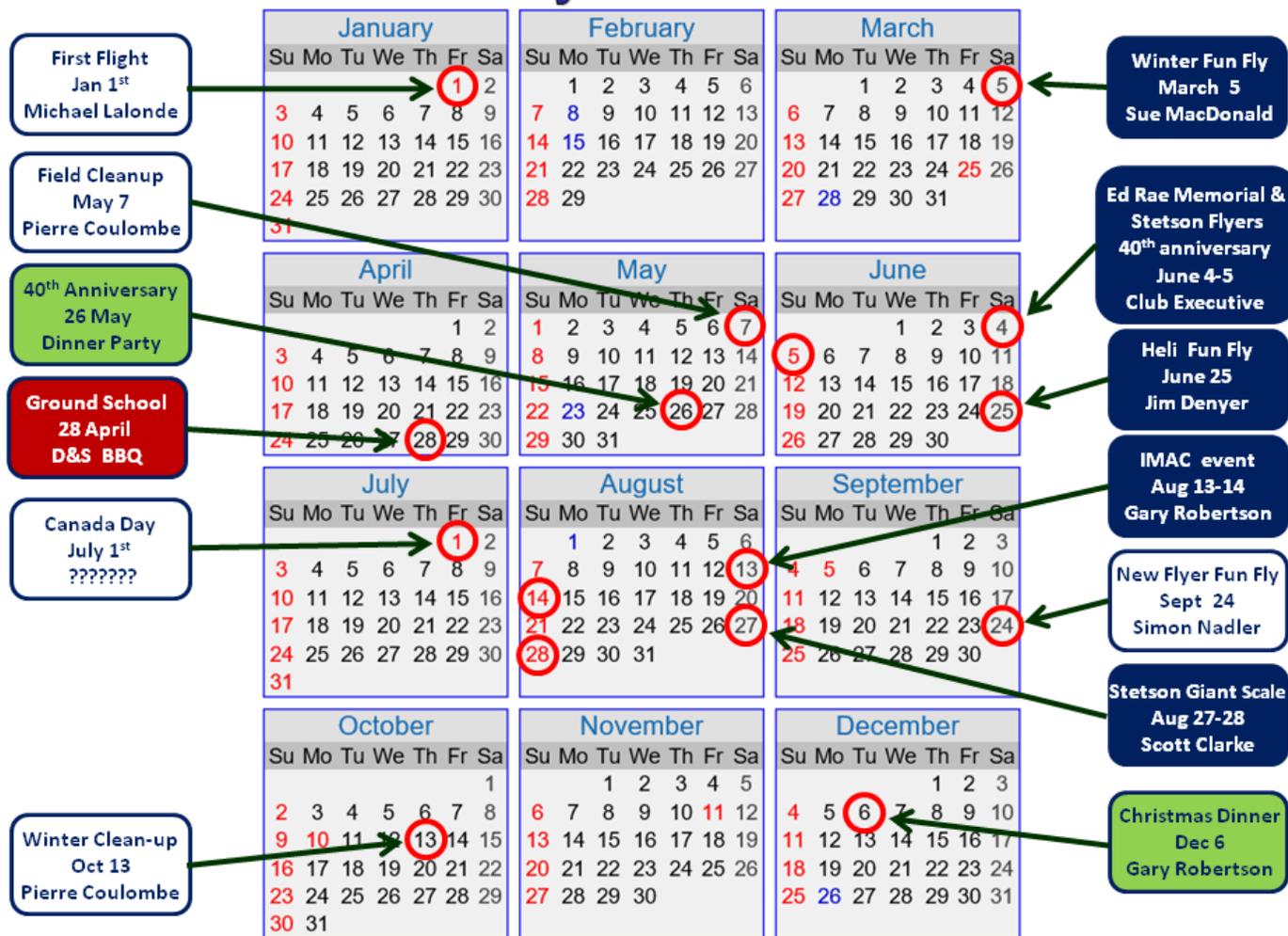
Unless noted otherwise, photos in this newsletter are by our webmaster Simon Nadler, our newsletter editor Bob Myhara, or our Vice President Hal MacDonald.

**Want to propose something?**

Members in good standing can bring motions from the floor at any regular meeting. The motion will need to be seconded, then discussed and voted on by the members present. Sometimes the outcome is that the motion is tabled so more information, implications, etc. can be gathered and presented.

You can help speed up the process by giving the executive a "heads up" by sending an email to [contact@stetsonflyers.com](mailto:contact@stetsonflyers.com), ideally before the executive meeting which happens the Tuesday before a regular meeting. This will allow the executive team a chance to research the idea in advance of the meeting and gather any required information.

## 2016 Stetson Flyers Calendar of Events



### Safety Report: Hal MacDonald VP/Safety Officer Stetson Flyers Model Aircraft Club

**I**ncrease in mishaps at the Flying Field.

1. While no reports of personal injury or damage to public property have been reported to date, scuttlebutt at the flying field seems to indicate an increase in the amount of air related mishaps so far this year. This being the case it may be time to step back and reflect on your safety habits.
2. Having a safe flying season starts now by making sure your plane is safe to fly. Remember that ultimately the pilot is always responsible for the airworthiness and the control of their model "in a manner that does not interfere with the safe enjoyment of the hobby/sport by others.
3. If you want to avoid problems in the air it is best that you get into the habit of performing regular systems

checks on the ground.

4. You do not have to do this before every flight, but you should come up with some sort of pre-flight routine and stick to it. While not all inclusive, here are a few tips that will help prevent a mishap at the field or personal injury:
  - a. Straight and true a 'bent' model will never fly properly and this can add enormously to the difficulty in learning to fly. So it's really important that your model is assembled with its flying surfaces straight and true.
  - b. Insure the structural integrity of your aircraft is sound. Check, and if required, repair, all glue joints especially those with a load/stress area (i.e. engine firewall, wing attachment areas, wing tube, horizontal/vertical stab, landing gear, etc).
  - c. Check that all engine and equipment bolts are tight and secure).



- d. Ensure the propeller used is the correct size and pitch for the engine used, is in good condition, (no repairs allowed), balanced and properly secured to the engine. If spinner is used, verify its integrity and security as well.
- e. Check fuel tank and fuel lines integrity; replace if faulty.
- f. Is the correct size, torque and voltage of the servo being used for a specific function as a minimum to meet the specifications recommended by the ARF/Kit manufacture and anticipated type of flying (i.e. 3D).
- g. Go over all the servo, attachment points, arms, screws and clevis joints for security and condition.
- h. Check, fix, or repair any damaged wood /foam or covering.
- i. Keep gaps between aircraft structure and control surfaces close together in order to avoid flutter issues.
- j. Are the Controls throws set up as per the manufacturer's instructions?
- k. Do the control surfaces move in the correct direction for the command given?
- l. The transmitter and airborne batteries are one of the most important items to check. Use quality batteries and check battery condition before and after each flight.
- m. Check all the electronic components of your model for serviceability (i.e. battery leads; charging plugs, connectors, and switches). When in doubt – Replace.
- n. Check all servo wires and plugs, are they in good condition, correct gauge of extension wire, are the servo connections tight. Use Servo Connector Safety Clip/Locks, tape or heat shrink to prevent separation and loss of power or signal.
- o. Make sure that receiver antenna has not come loose and ended up in a pile in the center of the plane. Is the receiver antenna orientation as per the OEMs specifications?
- p. Balance the model as per the manufacturer's instructions, longitudinally (CofG) and laterally (wing tip to wing tip),
- q. Check that your radio set up for each plane has not changed for whatever reason. Are the switches in the proper position, correct aircraft selected and Fail safes programmed and tested.
- r. Do a range check before making that first flight of the day, does the receiver indicate a good "BIND" with the transmitter?
- s. Gain familiarity with the ground handling character-

istics of your model by taxiing it around for a few sessions, see how it tracks and handles taxiing into the wind/downwind or how the model is affected by cross winds.

- t. Know your aircraft flight characteristics and limitations. Always fly within your planes capability and more importantly – you ability. Remember to allow, for environmental factors (wind, sun, snow, temperature); and
- u. Are you truly ready and mentally alert to enjoy your flight? When in doubt, step back and wait until such time as you are ready and comfortable to do so. This is our hobby, for our enjoyment. Don't be pressured into flying until you feel comfortable in doing so. It is strongly recommended to always fly with a friend.

Sometimes having a friend doing the safety check on your plane or acting as your spotter can go a long ways in have a very enjoyable and incident free flight.

The use of a Spotter could have helped to prevent mid-air incident. It is always a good idea to use a spotter for everyday flying as well as at events. The Spotter should perform the duties for which they have been briefed by the pilot. Such tasks would normally include things like advising the pilot of the position of other aircraft and any potential for collision or communicating the pilot's intentions to other pilots flying at the same time, taking off or landing. For information on "SPOTTERS", please review: [MAAC Safety Document MSD 7 - Need For and Duties Of Spotters and Helpers](#) ; and [MAAC Advisory Publication" MAP 4 - Duties of a Spotter"](#)

Medical Conditions. You are the best judge of whether you are medically fit to fly on a specific day or not. If a member has a medical condition or is using medications that would reasonably limit or restrict their ability to fly in a safe and competent manner, it is strongly recommended the member not fly. If a member has a serious medical condition please ensure other club members are aware your condition and or medications, and a contact to notify in case an emergency arises. If warranted, wear or carry a medical bracelet, necklace or medical wallet card.

Have a happy and safe flying season.

# Aerobatics Corner:

Summer flying is on!  
WHOOPEE!

As you read this, the aerobatic gang are hard at our practice and sequence flying. We are also doing an excellent job devouring the burgers and hot dogs at lunch!

We had an unfortunate mid-air incident last week involving an aerobatic member and a sport flyer. The sport flyer took off well after the aerobatic pilot had begun his practice sequence, so there was no lack of awareness of what was happening. There were also a small number of flyers, so there wasn't any issue of getting flight time.

This lack of respect is very uncommon these days as we have all been working together quite well to ensure that all types of aircraft have access to the skies to enjoy their own styles of flying.

I sincerely hope that we will not see this kind of thing again!

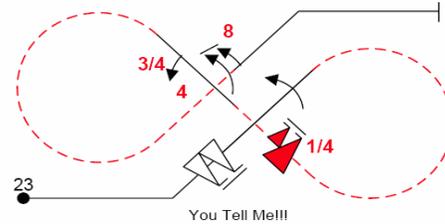
Now on to more fun items:

The Stetson IMAC Contest is coming on August 13-14 and promises to be a great event. We hope you will come out and participate, have fun, and enjoy the camaraderie with other pilots from different clubs and locations.

***For anyone who would like to fly in the event, please contact me asap and we will be happy to help you be ready!***

Flying precision aerobatics is a really great way to improve your piloting skills in all respects. Our group of enthusiasts are very willing to share their knowledge and experiences on flying, aircraft setups, radio programming, and of course, on HOW to "straighten up and fly right".

We also need volunteers for canteen duty on Saturday



and Sunday at our IMAC event, so please let me know if you are able to help out. Email me at [garyr75@hotmail.com](mailto:garyr75@hotmail.com) please.

**THAT NEXT AIRPLANE:** We get a lot of inquiries at the field about choices for 'that next plane'. This is sometimes difficult to answer without some knowledge of where you are trying to go in your R/C enjoyment.

However, a few generalities may be in order from an aerobatics perspective. A good aerobatics aircraft will have straight wings (no dihedral) and a symmetrical airfoil.

There are several very good ARF's out there, and a few not-so-good ones that haven't worked out as well.

Generally, major manufacturers are a good place to look.

Aeroworks, Pilot, Hangar 9, Extreme Flight and similar well known companies have some pretty impressive offerings. Ask around at the field. See which ones you like and go talk to the pilots. Everyone has their own opinion, of course, so you will quickly get a feeling of why folks like this vs. that airframe.

As for power, electrics are quite popular for smaller sizes. As airframes get larger however, the batteries become more costly and the 'advantages' of electrics' clean smooth power begin to fade. This now leaves you with the likely choice of a gasser engine. The availability of reliable gas engines from 10cc and up have made this option much more affordable as aircraft size increases.

Radio choices are confusing for newer pilots, and there is a tendency to under-buy when stepping up, simply because the buyer may not be aware of why the features on the better radios are going to help him. Talk to us. We will show you quickly how important these items are!

Take care aerobats! See you out there!

Gary.

## Stetsons 2016 Spring Clean-up



This year's spring clean-up was held on May 7, 2016. There was a fantastic turn out with 30 volunteers showing up on Friday and Saturday to roll the runway and pit area, fill in the low spots, and seed and fertilize the turf. The clean-up was organized by Pierre Coulombe, Field Coordinator.

We resurfaced the areas around the setup tables with crushed stone and repaired necessary structures. We replaced some sections of the main fence and built a new helicopter fence for safety. Thanks goes to the many hard working club members, we accomplished a very large portion of the 'to-do' list.



Thanks to the following who gave generously of their time, skills and energy:

*Peter Blair (Truck and trailer), Tom Pellow (Roller Driver), Peter Wakefield (Roller Driver), Réjean Bouchard, Scott Murphy, Jean Maurice Moreau, Pierre Coulombe, Len Streefkerk, Dave Hubenig, Dave Percy, Lars Eilf, Bob Myhara, John Jackson, Marc Simonic, Dave Tymofie, Tony Morris, William Wegenas, Pat Hennessey, Dan Marcotte, Dave Percy, Claude Dostaler, Hal MacDonald, John Weber, Jonathan Harper, Ron Hanson, Bob Sintzel, Dave Martin, Eric Paradis, Mike Lalonde, Chris Ferry, Norm Kihl, Ed Ronan, Reg Dyer, Edward McMamn and Maurice Forgues. (Edit. Sorry for any omissions).*



Also, special thanks to Pete Blair for the use of his trailer to carry loads of material from Pomerleau which saved the Club a lot of money.

There was a free lunch for all the workers. After the work is finished, the field was opened for flying.

Thanks again goes to all the hard workers, and looking forward to a successful flying year.



# Special Ed Rae Memorial and 40th Anniversary Fun Fly!

WOW! What a truly magnificent day to hold a big fun fly! Mother nature gave us a perfect Saturday with blue skies, some puffy clouds, and gentle winds. We saw 50 pilots register for the flying, and a large contingent of past members come out for the event.



It was a great way to celebrate the Stetson Flyers 40'th Anniversary year. Thank You for your participation! The trip down memory lane was supported by many others such as Fred Zufelt who brought out two hand-built models that his father, Jim Zufelt, constructed many decades ago. Jim would be very proud to see his creations maintained and still flying today! Thanks Fred for keeping the legacy alive and well!

It was a great trip down memory lane for many as old friendships were re-kindled and new ones started! We must tip our Stetson Hats to the participation of old-time members such as Gerry Pronovost, still very active today, and a treasure house of history, stories, and knowledge of our wonderful hobby/sport. We also need to thank the Ed Rae family for once again gracing us with their presence. Ed was a founding member of this great club, and his contributions and tireless efforts will never be forgotten!



The event provided an opportunity for the Stetsons to showcase 4 decades of progress and development in our Radio Control hobby/sport. We held a first ever FPV Quad Racing demonstration with Pierre and Emmanuel piloting these incredibly fast and nimble quads, complete with live video feeds on a big screen monitor.

Demonstrating the other end of the speed spectrum we saw a model R/C Parasail aircraft brought out and ably flown by Elckar Monsalve. His top speed was a comfortable walking pace!



We must also thank the MANY volunteer Stetsons who worked hard to make today the success we all enjoyed: The many hard-working canteen staff, the folks who helped with parking, putting out the signs, selling the 50/50 tickets, getting the Anniversary Cake, and on it goes... Thank you President Dan for shouldering the load as always, and leading by example once more! You do realize of course, that the membership will NEVER let you retire, right?



The Stetson Flyers membership should be proud: Proud of the success the club enjoys today; Proud of our history and our founders, on whose shoulders we stand on this day, 40 years later! (Commentary by Gary Robertson).

## *Out and About at the Stetsons*



Ed Rae Junior Fun-fly



More Field Clean-up



Lending a hand



Pierre's new Sukhoi



Dave's Hurricane is back



What the hobby is all about—having a good time

# Miniature Turbine Engines

By Peter Wakefield

**T**urbine powered aircraft are becoming a frequent sight and sound at the flying field. Today's engines come as a complete ready to install package; no assembly required.

Years ago, some turbine manufacturers sold plans and castings so that modellers could build their own turbine engine. If doing the machine work wasn't within one's skill set, there was an option to purchase a kit of finished components that you could assemble yourself. I enjoy working with mechanical devices so choosing to assemble my own turbine was an easy decision.

Assembly starts at the front of the turbine with the diffuser (Figure 1) and shaft tunnel (Figure 2). The diffuser directs the air from the compressor into the combustion chamber. The shaft tunnel has a bearing at each end within which spins the turbine shaft.



Figure 1



Figure 2

Figure 3 shows the case front (left) and intake cone (right). Putting these components together (shaft tunnel, diffuser and case front) completes the front air intake assembly as seen in Figure 4. The intake cone is absent at this time.



Figure 3



Figure 4

Now is the time to assemble the spinning components of the engine. Figure 5 shows the turbine wheel, shaft, and compressor. The turbine wheel and rear bearing come pre-assembled on the turbine shaft so that the manufacturer can dynamically balance the complete assembly.

Figure 6 shows the turbine wheel, shaft and compressor installed in the shaft tunnel assembly.



Figure 5



Figure 6

At this time the front intake cone is installed on the case front (Figure 7). The intake cone (seen in Figure 3) is centred over the compressor and secured to the case front with several screws. The intake cone must be accurately positioned so that the compressor blades do not rub on it.

After the intake cone was added and secured, the turbine wheel and shaft were carefully removed so that the remainder of the engine could be assembled around the shaft tunnel. Thus the turbine shaft is missing in Figure 7.

At the back end of the engine, the next component to be added is the combustion chamber. When turbine engines were originally designed in the 1950s, combustion chambers consisted of several metal compartments or “cans” into which both compressed air (from the compressor) and fuel from the fuel pumps were injected.



Figure 7



Figure 8

Today, combustion chambers are annular, where air from the compressor is forced through the circular compartment into which fuel is sprayed. Figure 8 shows the combustion chamber installed around the shaft tunnel. Notice that the small diameter tubing on the combustion chamber is the fuel manifold, where fuel from the fuel pump is delivered to the spray nozzles.



Figure 9

Where the hot gases exit the combustion chamber, the rear turbine nozzle guide vanes (NGV) are attached to the turbine case. The centre ring of the NGV fits over the centre tubular section of the combustion chamber, followed by the turbine case installed over the outer ring of the NGV as seen in Figure 9. Notice that the turbine wheel and shaft will be reinstalled through the bearing shown in the centre of the NGV.

Figure 10 shows the front end of the engine with turbine shaft, spinner nut, fuel lines and rpm sensor added.

To complete the engine, the starter motor and its cover are attached to the front of the engine (Figure 11). Fitted to the motor shaft is a small bendix clutch that automatically engages and disengages on the compressor spinner nut.

The starter motor can be seen in front of the Foreign Object Debris (FOD) screen which prevents foreign objects from being ingested into the engine.

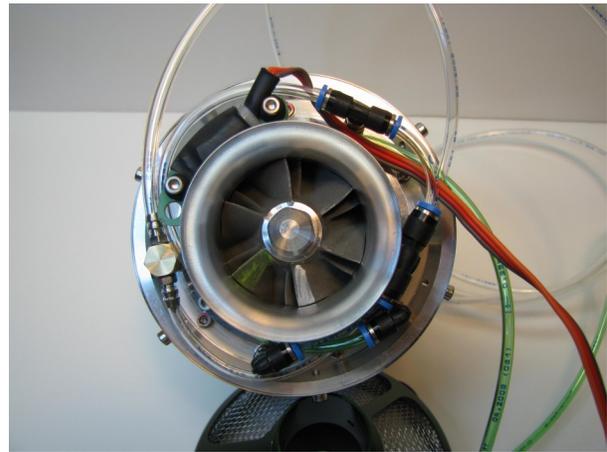


Figure 10

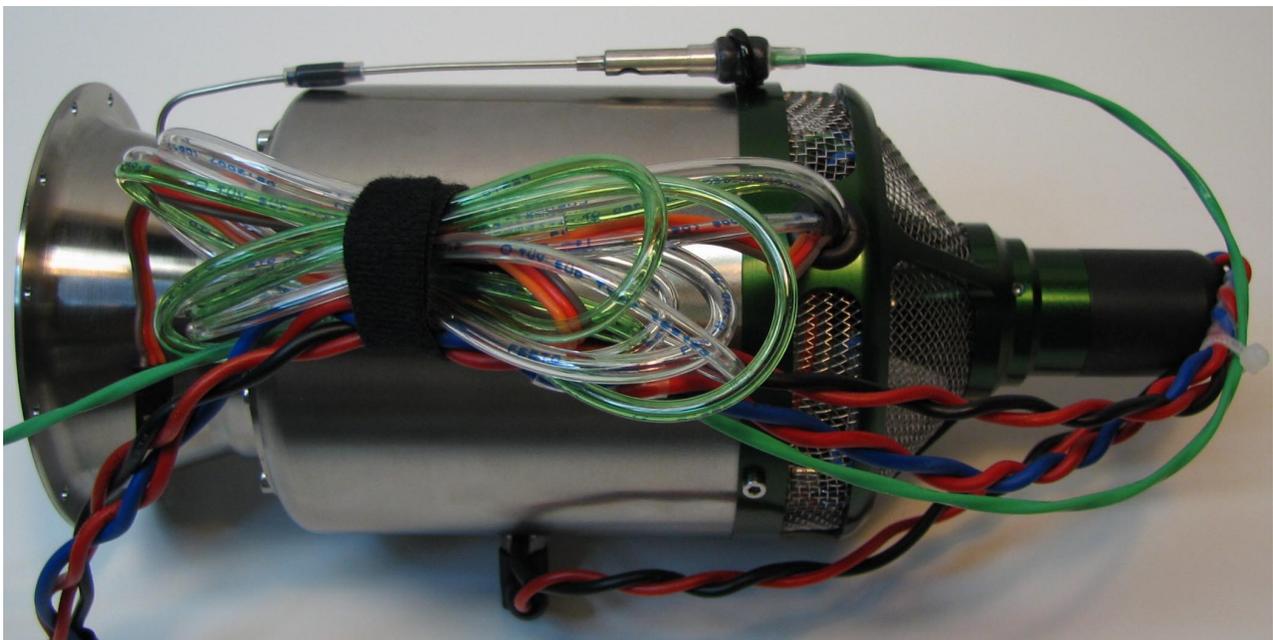


Figure 11

Figure 12 shows the completed engine with the interstage attached and the engine installed in a test stand for its first start.

Figure 13— IT WORKS!! Turbine speed is 115,000 RPM running at 356° C. As of the helicopter fun fly on June 25th, the engine now has over 41 hours of run time and has consumed over 45 gallons of kerosene.



Figure 13

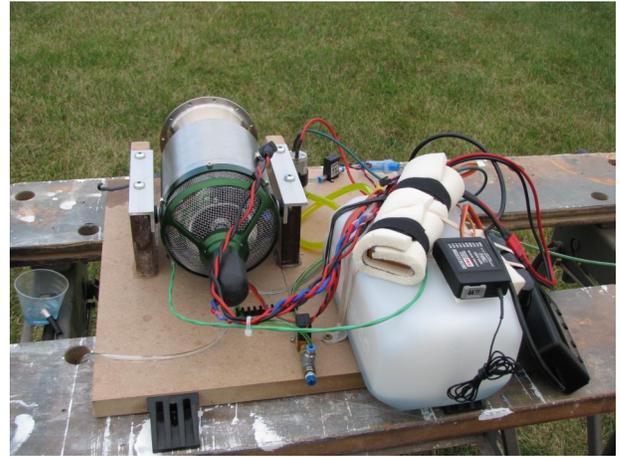


Figure 12

The entire powerplant is shown in Figure 14. The turbine shown in these photos is a gas generator. Instead of thrust, a gas generator engine is optimized to produce large quantities of hot gas that's directed through a secondary turbine wheel on a separate gearbox shaft. A clutch unit installed on the gearbox shaft transfers power to the helicopter mechanics.

The photo in Figure 14 shows the 2nd stage gearbox. The gear ratio is 3.45 to 1. The temperature at the interstage section can exceed 600 degrees Celsius, so is wrapped with insulating material to protect the surrounding frame structure.

Hope you enjoyed your trip through my helicopter turbine.

Peter Wakefield



Figure 14