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MISSION STATEMENT

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The International Radio Controlled Helicopter Association (IRCHA) was established as an organization by the pilots, for the pilots. IRCHA works to promote the continued growth of radio controlled helicopters through education, representation, service, and special events. Radio controlled helicopters are a dynamic, evolving segment of the AMA and as such IRCHA works closely with the AMA to foster growth and acceptance. Through these endeavors, IRCHA hopes to provide its members with the opportunity to enjoy the hobby, make many new friends, and expand their intellectual interests.

JUNE 15TH, 2022

From the Board - IRCHA 2022

The 2022 IRCHA World Jamboree will take place August 10-14th at the International Aeromodelling Center in Muncie Indiana. While preparations for the Jamboree take place throughout the year, this is the time of the year it gets busy for the Board of Directors. Countless hours are spent coordinating all aspects of the event. While the official date for the start of the event is August 10th, Board members and volunteers will be onsite in Muncie as early as August 4th for preparations.

It is important to note that all IRCHA Board Members and staff are volunteers. If you are attending the Jamboree this year, take a moment to thank one or more of these volunteers when you see them working. Without their help, this event wouldn't happen. A significant number or our volunteers take extra vacation time to help make sure the Jamboree is a success. for pre-event setup (Aug 7th, 8th, or 9th), or post-event teardown (Aug 14th) we could ALWAYS use the help. The best way to volunteer is to contact any board member (my contact info is below) or use our general contact form at <u>https://ircha.org/contactform/.</u> Dan Lucente IRCHA President

dan.lucente@ircha.org An organization of Many, A Voice of One.

If you would like to volunteer

IRCHA JAMBOREE 2022 Grand Prize

IRCHA Jamboree Grand Prize

Miniature Aircraft Whiplash Gas V2 Including: MS Composite Main/Tail Blades GPH/OBR310 Engine (Fully Broke In Futaba T16IZ TX with R7108 RX Futaba GY755 Gyro/Governor Futaba Brushless Servos MS Studio GPH320 Muffler Custom Cut and Engraved TX Case XGuard Intelliswitch & RPM Sensor Jersey Modeler Fuel Can with DLE Pump ManiaX RX Battery Full Built, Setup, and Test Flown by Gas Powered Helicopters



Flying the Whiplash Turbine

The Whiplash Turbine is the fourth and latest in the Whiplash series of 700-class helicopters from Miniature Aircraft. Powered by a Turbine Solutions TS45i Whiplash Edition Turbine and sporting over 8 shaft horsepower, the Whiplash Turbine is a beast. Last spring, I had the chance to fly team manager, Cade Ciripompa's Turbine and put a respectable 40 flights on it (that's roughly ten gallons of jet fuel, in case you're curious). The experience begins with the beautiful looks of the TS45i, with it's large exhaust, gorgeous anodized blue features, and the bright red anodized clutch and heat sink from Miniature Aircraft. The model is simply a beauty to look at!

Next up is everyone's favorite part...

startup. You are now greeted with what is, in my opinion, the best reason to fly a turbine – the smell of jet fuel lighting up! Within a few moments, my VControl is indicating RPM and this means the second stage is warmed up and ready to fly.

The turbine flies like a heavy electric. It has more mass so you have to fly ahead of it to ensure you have time to recoup from any maneuvers. It is graceful through the air and is a pleasure to fly. While it is perfectly capable of 3D flight, I prefer to put it through precise maneuvers including loops, rolls, tight turns, flips, and the occasional tictocs. The turbine lag can be managed by staying off center stick and, instead, using the Whiplash's natural tendency to overspeed as an advantage to cool the turbine and keep rotor RPM at the desired speed.

The TS45i is a thirsty engine – yielding roughly five minutes of joy whether I pushed it or was easy on it. In the end, it's still cheaper than nitro and after each landing, I couldn't help but have a huge grin on my face... dreading the day I'd have to return it.

The Whiplash Turbine is definitely on my wish list and I'd be happy to buddy box you if we run into each other at a fun fly once I have mine!

By: Angel R. Rojas, Jr., Miniature Aircraft Team Pilot



New and Exciting Servos

Theta servos came to the market recently with innovative NFC technology built into the servos! The technology itself is nothing new, but it is quite unique to see it built into RC servos. NFC stands for near field communication, which means if you have an Android phone with NFC capabilities, you can fully program and adjust many different settings on your servos. Some people may see this as a gimmick, but it is far from it. In fact, there are many important parameters that can be modified within the servo allowing for a more efficient setup or to simply "customize" the feel to your flying style. Some settings include adjusting the center point, this is particularly useful if you do not like using sub trim on your model and this setting is particularly even more use-

SAB Heli Division

the servo "feels" in the air. For example, you can make the servo feel faster and stronger by adjusting the current consumption as well as the PID control loop of the servo. For instance, Bert and myself prefer a higher "max current" value to create a more responsive feeling servo. Another cool feature of programming is that If you use the Futaba CGY gyro system, you can also adjust the center pulse frequency of your cyclic servos to 760us to take full advantage of that flight control unit! Theta Servos offers a wide variety of servos ranging from micro size all the way up to full size high torque servos suitable for large-scale airplanes. All servos have an incredible requested this as they preferred a

ful on the tail servo so that you can

get a mechanically perfect setup!

Other settings can change the way

warranty as well as competitive pricing that is on par with many top brands on the market these days!

BK Designs LLC (BK Hobbies) is the distributor of Theta Servos in the US. You can order Theta Servos from bkhobbies.com as well as participating dealers.

By: Kyle Stacy



SAB continues to push the envelope on new models to suit the average every day pilot or the 3D Maniac! The latest 700 size release from SAB is the Raw Piuma! For those of you who are not familiar with the Raw Nitro; the Piuma features many parts from it including as a smaller rotor head (compared to the current Raw 700 flown on a single 6s or 7s power electric), a 30mm tail boom instead of a 35mm tail boom, and a smaller tail rotor assembly. All of these changes reduce the overall weight by about one full pound The Piuma also utilizes a fully removable canopy. Some people

removable canopy over the battery hatch that the Raw 700 implemented. The Piuma is also different when it comes to power setups; the max motor size is a 4035, which is not traditional for a 700 size machine! In fact, the Piuma can very safely and efficiently be setup. Simply using the same motor/ESC combination from a Kraken bies.com as well as participating or Raw 580; the Piuma can run on either 6s, 7s, 8s all the way up to 12s! Running the Piuma on a single By: Bert Kammerer compared to the original Raw 700. battery setup offers a low RPM setup for someone looking to work on orientations, fly light sport aero-

batics, or simply someone who already has a Raw, Kraken 580 or any other model that uses a traditional 5000 MAH 6s battery pack and wants to share batteries with these other models.

BK Designs LLC (BK Hobbies & SAB USA) are the official US distributor for SAB. You can order the new Piuma from bkhobdealers.





How I got Started Precision F3C Flying

It's mid-February 2020, COVID-19 is gaining ground, and my employer takes precautionary measures by mandating the workfrom-home policy for all employees, globally. The extrovert in me couldn't bear the four-walled environment, sitting and "zoom" calling most of the day with no face-to -face interaction. Quarantining with the family was great, but I needed a hobby. One day surfacing YouTube, I ran across a video of someone flying an RC Helicopter. I thought to myself, I remember those!! I flew a Hirobo Shuttle back in the mid-90s for a short time. Fast-forward 25+ years later, and I see RC Helicopters are thriving! #keeprchelisalive



How do I get back into the hobby? Well, the video led me to the company that sold the 200 size helicopter and I purchased it. Remembering some of the hovering basics, I took to the backyard, day in and day out. Learning hover mode versus idle-up. Late Summer of 2020, I joined a few RC Helicopter related groups on Facebook. I met some really cool people and

learned about local clubs I could join. Flying with a crew of about 8-10 pilots (ATL Heli Smackdown Crew aka Tri-Lambda's), I quickly learned more about the hobby and how to progress with maneuvers. The guys were inspiring with their cool 3D tricks and flights, so much that I really wanted to learn. I learned that my eyes were just not quick enough to keep up. Bought my first 700 size helicopter but still, the moves were too quick, and with different orientations, and variable speeds, I got overwhelmed. And to top it off with crash after crash, repair after repair, flying RC helicopters for me, was losing its fun factor. I felt 3D style of flying wasn't for me. I shifted towards more of a "big-air" style of flying and I loved it.



Learning circuit patterns, stall turns, flips, loops, and rolls, yes!, found my style. Excited!, now I'm scouring YouTube looking for bigair flights and run across F3C competition videos. Precision flying, hover and aerobatic routines; very cool! How do I begin to learn F3C?

My internet searching led me to

the F3CN website (https:// f3cn.org). There, I learned about the different levels or classes ranging from beginner AMA Sportsman to expert F3C Schedule P and F. The site is very helpful, not only showing the rules but also diagramed instructions of the maneuvers of all routines for all classes. I printed the Sportsman class routine to study. I also went back to YouTube to search "F3C Sportsman" and came across several videos but one, in particular, really inspired me. Pilot Geena Tucker was an AMA Sportsman competitor at the AMPS RC Heli Event in Miami, FL in 2021 (video: https:// youtu.be/B7QJeoXSNK0). I was so impressed watching her fly, especially in the high wind gusts, and how well she did. I thought to myself, I want to do that, learn that, and compete! AMA Class/F3C routines or schedules consist of a series of Hover and big-air Aerobatic maneuvers.

Pilots are scored by three judges that grade your performance on precision movements, smoothness of transitions, and technical execution. The AMA Sportsman schedule maneuvers are beginner-level but you should know basic orientations to ensure you can complete all routines. Hover maneuvers include progressively drawing the shape of an inverted triangle and diamond. Aerobatic maneuvers are forward flight routines such as the roll, loop, stall turn, oval, and the fun candlestick with half roll down!

IRCHA BULLETIN

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How I got Started Precision F3C Flying continued



I started practicing the AMA Sportsman schedule in July 2021. I spent about 10 hours per week at the field hovering and big-air flying until I felt good enough to compete. I missed competing at NATS in Muncie, IN; I felt it was too soon to try. I continued practicing and my first F3C event was October 2021 at the Triple Creek RC Heli Fall Classic in Tampa, FL. I can't begin to tell you how nervous I was to be in the likes of other F3C pilots and compete against them. But I met a new community of RC Helicopter pilots. Nick Maxwell, Yasunobu "Nob" Muraki, Tim DiPeri, Gordie Meade, Mike Goza, and Tom Dooley were just a few expert F3C pilots that lend humbled support helping pilots like myself learn all about heli and electronic setup, to suggestions correcting maneuvers flown by pilots.

What about the helicopter and electronic setup? It's definitely a pilot preference but you want to go with a helicopter heavy enough that it provides great stability, especially in hover mode. I currently fly the SAB Genesis Urukay (700+ size or class) which I think is a great entry helicopter into AMA Class/F3C competition. It has a modular fuselage design and compared to other F3C helicopters, it's solid and fairly affordable. But pod



and boom helicopters work just as well. I've seen many pilots that prefer to fly pod and boom because it may be more affordable than fuselage-based heli's and may also be less resistant to high wind gusts. Again pilot preference, just make sure you're comfortable with whatever you choose. Now radio systems, in my opinion, will truly determine how precise mechanics are controlled in your helicopter. You want a system that allows control over many aspects such as maneuver-based flight modes, gyro rates, dual rates, expo, fine pitch curves, etc.

My radio system of choice is the Futaba T32MZ transmitter with the CGY760R gyro/flybarless unit. This system allows me to set rates on individual controls such as the aileron, elevator, pitch, and tail for complete authority on the flight surface. But again, radio systems are pilot preferences and you should select the system that's right for you.

Moving on and after placing 1st at the AMPS RC Heli Event this year down in Miami, I look forward to competing at NATS up north in August. Precision flying and competition have grown over the past year and more



pilots are ready to get out there and show the world what they are made of. Will you give it a try? Want more information? Please don't hesitate to email me: Brian.Byrdsong@gmail.com and I will try and help lead you down the path of righteousness, down the path of F3C Precision flying! Check out my hover maneuvers on YouTube: Inverted Triangle and the Diamond I would like to thank my support systems, Team HeliDirect, Team Kontronik, and my beautiful wife, Diana.



Flybarless Gyro Set-Up for Scale RC Helicopters

The better part of ten years ago I was encouraged by Danny Melnik of Aeropanda to make a change to Kontronik power systems for my electric model helicopters. At that time I was still relatively new to electric propulsion, but I knew well enough that I was not satisfied with the equipment that I had been flying prior to making the change to Kontronik. The change to Kontronik proved to be one of the wisest of my modeling career. Several years later I was very pleased to become of member of the United States Kontronik team, and then a little over two years ago the North American Kontronik Business Development Manager, Tim Diperi, asked me to take over as the United States service agent for Kontronik motors and to provide technical support for Kontronik speed controls. The name of my company is Kontronik Service USA.

In my capacity as service and technical support agent for Kontronik in the United States, I receive inquiries quite often about how to correctly choose a power system in the context of gearing, motor size, and motor kV. When these questions appear on the various online and social media forums, the knee jerk reply often states to "just use a head speed calculator" or "just run what the kit manufacturer suggests, and it'll be perfect". Unfortunately blindly following either one or both of these suggestions deprives a modeler of a true understanding of what is or is not the ideal combination for a chosen speed control, motor, model, and flying style.

If we consider the average 700 class 3D model helicopter on the market today, that model will typically be set up with a motor and gearing combination to yield somewhere in the 2000-2200 rpm range or perhaps a bit more up to 2400 rpm. Of course there are exceptions, but most models gear up somewhere in this rpm range. If that set up is how you want to fly, then you can indeed follow the kit manufacturer's specifications for motor kV and gearing. But what if you do not want to turn your model that fast? Oh, that's easy....."I'll just reduce the throttle curve to what I want the head to turn." It is not that simple when you configure a model the correct way.

The first item that needs to be considered is the highest throttle percentage your chosen speed control can run and still maintain governor headroom. So what is headroom? Well, we know that as the motor batteries in an electric model discharge, their voltage decreases. The governor in an electric model not only keeps the rotor head from over speeding, it also can open the throttle in the background, so to speak, so as voltage decreases, more throttle is added to keep the head speed constant and especially under increased load when maneuvering. It is important to check your speed control's manual for the maximum throttle percentage you can run and still maintain adequate governor headroom. For Kontronik Kosmik, Jive Pro, and Kolibri speed controls, I suggest the throttle percentage be no higher than 80% on a 0-100 scale. Please do not assume

that all speed controls share these guidelines because such is not the case.

So, once you know the highest throttle curve percentage you can run and still have adequate headroom, the next thing to define if what you want your highest head speed to be and the gearing and motor kV required to produce it. At this point in the set up process I will use a head speed calculator such as the one in the popular IRCHA RC Heli Toolbox app or Mr. Mel's head speed calculator.



Flybarless Gyro Set-Up for Scale RC Helicopters continued

With the highest desired throttle percentage now known, you will enter your gearing, motor kV, and battery voltage and then see the maximum head speed provided by the target throttle percentage. If the head speed is not high enough, then investigate if there is another pinion choice for your model with perhaps one more tooth in the pinion or pulley. If the predicted head speed is too high, then see what happens with you revise the gear ratio for a smaller pinion or drive pulley. If you cannot get very close to your desired maximum head speed at the correct throttle percentage using available gearing, then the next step is to reduce or increase motor kV corresponding to the direction you need the head speed to go. When considering motor kV choice, a higher kV motor paired with a lower gear ratio is preferred to a lower kV motor with a higher gear ratio because the former gives the motor a mechanical advantage. One may also argue that with the higher kV motor and lower gear ratio that motor rpm may be more tightly controlled because the faster the motor turns relative to the rotor head, the more sampling opportunities for the control loop the governor has for controlling rpm.

Earlier I mentioned that the easy option to adjust the highest head speed when for example the rpm is too high is to reduce the throttle curve percentage. This practice is ill advised because it is inefficient and actually hard on the speed control's field effect transistors or FET's. As a general concept, the harder we push a model in flight, the less we want the FET's switching on and off to reduce head speed. More FET switching on and off equates to more heat and lower overall energy efficiency. For sure some switching must occur in the context of governor headroom, but if we take a model whose maximum head speed is being dialed back by a fifteen or twenty percent or more reduction in the throttle curve and then the model is also flown hard, the duty cycle of the FET's is dramatically increased and the average and peak current and resulting heat with which the speed control must contend are markedly increased. If the demands on the speed control consistently fall far enough outside of the design criteria for the product, failure can occur. Thus the rule of thumb for model gearing and set up is to choose a maximum head speed and then gear so that



that head speed corresponds as closely as reasonable to the highest recommended throttle percentage for the speed control while still maintaining governor headroom.

Now, clearly we don't always fly around at maximum geared head speed. If lower head speeds are desired for hover or another flight condition or conditions, by all means reduce the throttle percentage to suit your taste Thanks to an engineering principle known as active freewheeling, all but effectively one of the major speed control brands on the market today can tolerate well partial throttle settings. The key to success here is common sense. If you have geared you model to turn 2000 rpm, do not dial the head speed back to 1200 rpm and then see how abusive you can be to the model in flight. All you will accomplish in such a case is making the speed control as well as the motor very hot. It is simply not the correct way to manage electric power.

I realize that I have covered a fair amount of information here in comparatively few words, so I invite all of you to reach out to me at <u>re-</u>

pair.usa@kontronik.com should you need help setting up your electric models or are in need or Kontronik motor service or speed control technical support. I wish you all the best for a great flying season!

Ben Minor

Heli-Factory Introduction

In 2008 Georg Maier and Bernd Bremer joined forces to create Heli-Factory which is located in Lindlar Germany. This merger resulted in a company that can proudly claim to be the leading manufacturer of scale model helicopters. Heli-Factory has achieved its goal to produce perfectly built helicopters with optimally adapted turbine/exhaust systems and electric powered mechanics. Their helicopters can be ordered as a complete airworthy model or you can purchase a partially completed fuselage with the woodwork and tail drive installed, all openings cut out and doors installed. Other components can be ordered separately for the owner to install as desired.

Before the introduction of *Heli-Factory* the modeler had a very limited selection of scale rotor systems, scale swashplates and control systems. Some of their mechanics are model specific and allow the builder the choice of either a turbine or electric motor for power. The cockpits and scale accessories are the most detailed in the industry. Heli-Factory mechanics and components are tested and proven to be a reliable combination giving the pilot true confidence in the helicopter they are flying. You can see from the pictures that the scale components and accessories are second to none and can give the scale modeler the items necessary to build award winning helicopters that are both impressive in the air as well as on the ground.

Chuck Birt, owner of Peak Aircraft is now the exclusive distributor of *Heli*-

Factory here in the United States. Chuck has been in the business for many years and is also a distributor for Vario Helicopters and Minicopter North America. Please contact Chuck at *HELI-FACTORYUSA.COM* for any questions.

Heli-Factory is proudly announcing Mike (Jon) Ellis (flyboy6191@yahoo.com) and Rene Gotiear (renedgotiear@hotmail.com) as the newest team members to their

Sponsored Pilot Program.







XL Power Nimbus 550 – Configuration Tips

With the release of XL Power's new Nimbus 550 class helicopter are you trying to choose between the different set-ups? Options are endless with this heli's flexible battery compartment and rigid chassis which can handle any power thrown at it... let's break it down and see what might be the best fit for you.

There are 2 kit options, mini or standard size cyclic servos; both use a standard size tail servo. If you are aiming for a lightweight and lower to medium RPM set-up mini servos will be best. For all-out smack 3D and 2400+ head speeds, choosing the full size option might be best.

The battery compartment can fit 6s (3300~5500) all the way up to 12s (2600~3300), motors 4020~4035 - 500~1200KV, and ESCs 80~150amp. Gearing options are 8.15, 8.83, 9.63. Generally speaking a 6s 5000 set-up with an 4025-1100KV motor and 130amp ESC with stock gearing will give plenty of power and decent flight times that most expect from a 550

class heli, sharing batteries with your 700 class (single 6s of the 12s) or even EDF jet and 65" 3D airplane.

For a bit longer flight times and demanding less power, a 4020 and 6s 5000-5200 is great for cruise around flying and general 3D aerobatics delivering 4 minutes + flight times. If you are looking for a set-up that delivers more power than your common 550 set-up mentioned above, a 4025/30-900KV can be used with 7s or 8s by only changing the pinion; while it is going to have a bit heavier feel there will be excess power for any type of 3D. A 4025 vs. a 4030 should be determined by how much torque you desire, ex - a pilot who likes to make fast collective changes and hold the collective at full expecting very tight RPM control might benefit from the torquier 4030 over a pilot who loads the motor but quickly unloads it as well. The latter pilot also usually prefers a bit lighter set-up as well.

For those shooting for ballistic performance 10~12s (2600- 3300mAh) options and up to 4035 size motors will fit in the frames. The battery tray is in stick form, so a 10 or 12s stick or multiple packs put into series end to end will fit on the tray.

For sport flying and smoother 3D, 1900-2200 are all great head speeds to target for. For most 3D 2300-2400 is a good range, and for balls to the wall all out fun, 2400+ makes for a rocket ship. 520-580 main blades can be used. Typically, a pilot who likes a more light feeling will choose a longer blade, medium RPM, and a slightly higher torque motor. A pilot wanting more stable in a hover and less effected by wind will prefer a shorter blade and slightly higher RPM.

Nick Maxwell



Kontronik Drives Go Low

I LOVE MY KONTRONIK STUFF... PERIOD.

If you've ever seen me fly, you know that I enjoy flying at a variety of RPMs and with precision. Considering how motors and ESCs work, this can be challenging with the wrong setup. My Pyro 750-50 with the Kosmik 210 HV -I gives me a comfortable range of 850rpm through 2000rpm.. yes - 850 RPM!

My Whiplash 730Es are set up for F3C competition so I'm used to low RPM flight but, one day, I decided to push it and see how low I could go. At 34% throttle, the RPM settled in at

around 850 rpm so I began to feed collective. The helicopter began to get light on the skids and lifted into a hover... after almost ALL the collective was fed!

Flying at low RPM is possible because of the active freewheeling technology in all of the Kontronik ESCs. This technology manages energy cycling through the electrical system more efficiently to avoid the heat and waste associated with traditional brushless drives. What this means is that I have longer flight times available so I can spend more time refining my competition maneuvers instead of charging.

During the 2021 NATS, I took a break between competition rounds to see how long I could fly the model at 850rpm on 12s packs without recharging. I was able to keep it in the air almost 22 minutes before I ran out of attention span!

While not everyone is going to be flying at low RPM like me, it's great to know that my setup by Kontronik is fully capable of handling the entire range of RPMs that I enjoy without any heat or consumption issues.

By: Angel R. Rojas, Jr., Miniature Aircraft Team Pilot

Flight details 13.08.2020 19:40:54

To overview



730E - B 0020020604



PRO Hover

C full: U full:

End:



C used: 4007 m∆h U min: 43.4 V 44.0 V U empty: I max: 21.4 A P max: 945 W



Gas Powered Helicopters (GPH)

We all heard it for years. They are too heavy, not enough power, noisy, and boring to watch fly. Many years ago, gasoline-powered helicopters earned most of these statements as they were essentially an afterthought by a few model helicopter manufacturers. Their existing models were adapted for the available engines with the minimal amount of engineering possible. The power systems were not designed for helicopter use, and minimal, focused effort was made to improve them.

As time went by and the model helicopter market shifted to electric power systems and became even more competitive, the smaller sales numbers made it impractical for the expense associated with different kits for gas helicopters, so the few manufacturers making them stopped. Today, only one manufacturer still makes an out-of -the-box gas-powered helicopter, Miniature Aircraft. In fact, the Whiplash Gas was designed from the ground up to be gas-powered. It was the first of the three Whiplash models to be manufactured.



However, there was still customer interest in the platform, so an enterprising company in Texas named HeliBug decided to make conversion kits for popular electric helicopters. Although the idea of converting an existing helicopter to another type of powerplant was somewhat unusual at the time, it turned out to be pretty popular. Now even some large helicopter manufacturers have developed Nitro conversion kits for their models as a less expensive way of providing a model type.

Over time more gas conversions have been developed by JC Designs and Blackoutmods for today's most popular models. With these conversions, gas helicopters are now available for various brands and sizes and are state of the art.

Power systems designed explicitly for gas-powered helicopters by primary engine modifiers such as Toxic Racing Machines (TRM) and O'Neill Brothers Racing (OBR) can deliver power equivalent to glow engines. Exhaust systems such as Muffler Studio (MStudio) have developed mufflers that keep the sound to a reasonable level, are lightweight and durable, and allow the engines to develop their maximum power.

There has always been a level of customer interest in internal combustionpowered model helicopters, the sounds and smells of burnt fuel, longer flight times, and the convenience of simply filling the fuel tank instead of battery management procedures are enticing to many.

In the last couple of years, the cost of glow fuel has skyrocketed to new levels. Although gasoline/petrol costs have also increased, they remain at about 1/10 of the cost of glow fuel. Also, because glow fuel has a lower power density, glow engines consume much more fuel per minute of flight. The result is that with today's fuel prices, a typical 700 class nitro model flight will use about \$6 in fuel for a 7minute flight. The exact size gaspowered helicopter will fly for about 10 minutes for less than \$1 in fuel. A lot of fun for a lot less money. Today customers have lots of choices to give gas helicopters a try. Miniature Aircraft now has V2 Whiplash, JC Designs offers conversions for SAB, Synergy, and XPower/MSH models, and Blackoutmods offers conversions for Align Mikado, Synergy, Minicopter, and XPower. A new entry into the market, G-Thangs also has conversions for XLPower and Tron models.

Very recently, Helidirect began carrying many of the gas conversions and power systems, and other accessories available. You can find out more by visiting helidirect.com, gaspoweredhelicopters.com, and blackoutmods.com, or by visiting IRCHA, where you will find most of these models flying all week!

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A Shift in the "Power System" Tide

We started to see the first "competition worthy" electric helicopters around 2007. At XFC 2007, Daniel Jetschin from Germany showed up as the only pilot using and electric model. He flew a Mikado Logo 600 and blew the crowd away with his electrifying performance. Following that was XFC 2009, which had Jamie Robertson who flew half nitro, half electric at the competition, winning the first-place prize after high all electric finals flights. Then in 2010 there was a huge shift in competition pilots using electric models. There was Kyle Dahl who won XFC 2010 with a Scorpion Powered Mikado Logo 600. A few months later, the top 3 pilots at 3D Masters, Nick Maxwell, Daniel Katsav, and Kyle Dahl all were competing with Scorpion Powered Electric helicopters. After 2010, nearly all competition pilots, and the majority of the RC heli market swapped to Electric Power Helicopters.

Since that point the development of Electric Powered has centered around just one thing. That was always to give MORE POWER. Pilots started to use larger and larger motors doing crazier and crazier flying. In the nitro days, 2000rpm on a 700 size model was already high. With Electric powered models, pilots started pushing their rpms to new limits going up to 2100, 2200, 2300, even some to 2400! This led to larger ESCs, larger batteries, more robust helicopter designs to handle the demand of the new era of RC helicopters.

This rise in model performance came to a peak around 2016 and since then it has plateaued. While flying got more radical, and the pilots got better with even more crazier tricks, the power systems on the market did not evolve much. Starting a few years ago we saw some boutique markets for "light weight" power systems on certain

models, but now we are starting to see this light-weight market get some more spotlight. For example, SAB has just announced their RAW PIUMA 700, which is an ultra-light 700 size model. Rather than use a typical 700 size power system like our HKII-4525 -520kv with Tribunus II 14-200A ESC. It can use a smaller motor and ESC such as our HKIV-4025-520kv, with Tribunus II 12-80A ESC! The light model weight, with slight lower rpm, provides a really nice flying experience still with more flight time. We look forward to this new trend in the RC Heli market and can not wait to see what other companies will come up with next!

Be sure to come see us at the upcoming IRCHA Jamboree 2022! We will be there in force with our USA Distributor, Mikado USA, and cannot wait!

Kyle Dahl Scorpion Power System





IRCHA Pilot Proficiency Program

I wanted to take some time to write a small section for this year's goals for PPP (Pilot Proficiency Program).

In 2021, we had 4 people at IRCHA complete levels 1-3.

Madison Lewis Completed Level 1

Richard Sowers Completed Level 1

Nathan Essex Completed Levels 1 & 2

Robert Montee Completed Levels 1-3

For their efforts, IRCHA is giving awarding little trophies to add to your transmitter box, or field box. See Picture. Level 1 Green Level 2 Light Blue Level 3 Dark Orange Level 4 Red (not pictured) Level 5 Black (not pictured) Level 6 Dark Blue (not pictured) Level 7 Light Orange (not pictured)

I will be attending a few events in March-May, Cajun Heli Fest and MayDay, both in Louisiana. If anyone wants to complete levels, please let me know.

I look forward to this year's program improving. It's a fun way to track your RC heli flying progress.

By JC Zankl



From The Editor

It is almost time for the Annual IRCHA Jamboree. Make sure you get preregistered for the Jamboree this year. Registration is now open:

HTTPS://IRCHA.ORG/SHOP



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