

# MENIFEE VALLEY FLYERS

## CLUB OFFICERS

**President:** Jeff Miller 672-7693  
**Vice President:** Maurice Jolliff 295-8850  
**Secretary:** Steve Welch 674-4123  
**Treasurer:** Matt Stein 850-1521

## BOARD OF DIRECTORS

**Steve Bednarck** 246-9056  
**Rick Hunt** 672-4196  
**Leo Maki** 672-4358  
**Dale Powers** 295-7421  
**Silvio Sandvoss** 696-1216

## COMMITTEE CHAIRMEN

**Safety:** DonGreaff 244-7236  
**Membership:** Silvio Sandvoss 696-1216  
**Community:** Maurice Jolliff & 295-8850  
**Relations** Matt Stein 850-1521  
**Contest Director:** Don Burke 679-0349  
Leo Maki 672-4358  
Bill Squire 600-2821  
**Field Maint:** Maurice Jolliff 295-8850

## INSTRUCTORS

**Josh LaDou (Fixed/Heli)** 973-4655  
**Rolly Bittermann** 244-4674  
**Dennis Shinko** 629-0483  
**Sam Dix (Heli)** 943-7476  
**Jeff Miller** 672-7693  
**Ray Gould (Fixed/Heli)** 634-4112



## *Flight Line*

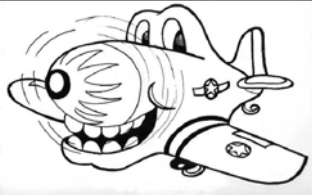
**Flight Line** is the newsletter of the Menifee Valley Flyers, a non-profit club chartered by the State of California and by the Academy of Model Aeronautics, Charter # 1717. The mailing address is 26754 Tropicana Drive Sun City, CA 92585.

**Editor: Matt Stein, (951) 850-1521**

**THE NEXT MEETING WILL BE**

**AUGUST 18, 2009 AT 7:00 PM**

**AT THE PROVIDENT BANK, SUN  
ERRY HILL IN  
TY**



**JULY, 2009**  
**First Class**

**MENIFEE VALLEY FLYERS**

26754 Tropicana Drive  
Sun City CA 92585

# Flight Line

A Newsletter of the Menifee Valley Flyers

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**JULY, 2009**

## *ANNOUNCEMENTS*

**Poker Fun Fly - September 12, 2009** Our next fun-filled Poker Fun Fly will be held on Saturday, September 12, 2009. More details to come.

**6th Annual Fall Fly-In - October 10, 2009** Just mark your calendar for this one. More details will be given in upcoming newsletters.

**December Holiday Party - December 5, 2009** Reservations have been made at RJ's Steak House in Murrieta. Dinner will start at 5:00 PM. More details will be announced.

**Club By-Laws Review:** **Rick Hunt** will be chairman of a By-Laws Review Committee charged with updating our Club By-Laws. If you would like to participate or provide input to the process, please contact Rick at 672-4196

## ***JULY 21, 2009 GENERAL MEETING MINUTES***

President **Jeff Miller** called the meeting to order at 7:10 PM with 12 members present. Treasurer **Matt Stein** reported the Club's bank balance with no out-

standing bills. Our final field assessment fee of \$65 per member (Year 3 of 3 years) was due July 1<sup>st</sup>. A couple of members did not pay their assessment and have lost their membership privileges. Membership Chairman **Silvio Sandvoss** reported that our membership now stands at 37

The Riverside R/C Club hosted the Inter-Club Fun Fly Competition on Saturday, June 27 and the Palomar Club hosted the third event at their field on July 25th. Several members of the MVF participated in both events. The current standings are: Palomar is in the lead, followed by Temecula Valley Flyers in second, Menifee Valley Flyers is in third, and Riverside in fourth. The fourth and final event will be held at the Temecula field sometime in August. The exact date is pending. Come on out and support your Club.

Our second Poker Fun Fly is set for Saturday, September 12th. We will once again open the event to members of all the local clubs (current AMA card required). We will be serving our delicious Bar-B-Q lunch, along with a raffle drawing. Entry fee is \$10 for the day. So, tell your pilot buddies, and come on out and enjoy a day of fun flying.

**Glen Ktatz** announced that on Saturday, August 8th at 8:30 AM, Temecula Valley Flyers will be hosting a build party for combat planes at French Valley Airport. The cost is \$40, which includes everything you will need to walk away with a flyable combat plane less the radio equipment and engine. There are 7 MIG-style kits available, so if you are interested, Please contact **Glen** at : [pinfix@aol.com](mailto:pinfix@aol.com) for more info and directions.

As a reminder, November is officer election month. We will open the floor to nominations at the October meeting. It's not too early to be thinking about who you would like to have run your Club in 2010.



The Annual MVF Holiday Party preparations are now under way. The party is tentatively set for Saturday evening, December 5 at 5:00 PM at RJ's Steak House in Murrieta. More info as to the cost per person and menu selections will be given as they become available. If you have any questions, please contact **Steve Welch** at (951) 674-4123.

Vice President **Maurice Jolliff** has been in touch with the Heritage Lakes HOA. This is the housing tract across Menifee road from the field, and interest is growing. There have been several occasions where some residents have come up and watched our flyers and wanted information about the Club. Please pilots, if you see a newcomer at the field, be courteous, introduce yourselves, answer their questions and invite them back. This is a good way to gain their interest and acceptance of our Club.

President **Jeff Miller** called for Show and Tell. We had several entries this month. **Silvio Sandvoss** showed off his new Kyosho "50 Series" P-40 loaded with a Magnum 70 four stroke and elect and retracts, it's a real looker. This new kit comes



with a "Dull Coat" finish, insignia, and really looks the part of a scale warbird. You can see this plane and more of **Silvio's** Warbird collection on our flight line most weekends.

**Matt Stein**, along with **Ray Gould's** building techniques, was able to resurrect and show off his ASM A-26 Invader. This ARF originally came with electric motors but now sports twin Magnum XLS 91's on a 92" wingspan. This plane will have more than enough power to help **Matt** set a new field speed record. No need for a stop watch, just blink.



**Glen Kratz** showed off two of Parkzone's latest "Bind-n-fly planes. Mainly for indoor/gymnasium flying is the Vapor, a Mylar-covered stick type plane. **Glen** demonstrated its ease of handling by flying the vapor around the meeting room.



The second was the new Sukoi SU-26. Also for indoor fun (outdoors with no wind), this plane comes ready to fly with full 4-channel capability.



Several fuel containers were found in the trash cans out at the field. Our Vice President and Field Maintenance Chairman **Maurice Jolliff** would like to remind all of us that these cans contain residual fuel and vapors, and with many of the days well over the 100degree mark, are highly combustable and can create a fire hazard. Pilots, please take your empty fuel containers with you and dispose of them at home.

With "Show & Tell" over, **Jeff** called for a break and refreshments. **Matt Stein** was able to feed the starving attendees by bringing the snacks (he forgot them at the June meeting). Our next meeting will be on the 18th of August, same place, same time. **Maurice Jolliff** will have snack duty.

*"Remember flyers, it's everyone's responsibility to keep our field safe and clean. Please, be courteous to one another, and if you know someone who is interested in flying, invite them to the field."*



## **HANGER TALK**

From RCMDirect.co.uk

### **Electronic Speed Controllers (ESC) Explained**

In electric powered models, if you need throttle control you will need an Electronic Speed Control (usually called an ESC).

These devices are controlled from the throttle channel of the radio and operate the motor much like an I/C engine throttle, from tick-over to full throttle, and all points between. Modern ESCs cover a wide range of applications and offer a sometimes-bewildering range of features and facilities including BEC, brakes, and various startup safety features (more on these later).

An ESC will generally have three sets of wiring. On one side you would have two wires, one black and one red, which go to the battery (Red +ve /Black -ve). On the same side you would normally have your servo or receiver cable, which goes into the throttle channel of your receiver. The other side would have three wires, which could be

the same colors, or three different colors, depending on manufacturer and convention used, which normally go to the motor.

Note that this is always plugged into the throttle channel even if the speed controller has the BEC feature and so is providing the power to the radio receiver.

If the three cables on the ESC are black, red, and white, then connect the three wires to the motor in matching colors. Check the direction of the motor and, if it requires reversing, swap the black and white cables over.

In modern speed controllers where the three wires for the ESC are the same color, attach any three wires and, to turn the motor direction around, swap the black and yellow motor cables around.

### **ESC Ratings**

The major things to look for when buying a speed control are the current rating, voltage rating, and features. The various features are individually covered below so let's have a look at the two main ratings.

First on the list is the maximum current rating. Typically this will be given as two figures e.g. 18/22A, the first is the current, which the ESC will take continuously, and the second is the short term current allowed normally for no more than 10-30 seconds. So in the example, you could run at 18A forever and use up to 22A for short periods, e.g. at takeoff. We recommend when selecting a speed controller allowing 20% margin so if you have a motor that draws 15 amps, I would select an ESC, which would have a minimum rating of 18 amps, based on the following simple calculation: 15 amps x 1.20 (20%) = 18 amps.

The other main ESC rating is the maximum voltage, more commonly expressed as a number of cells both Lithium Polymer and NiMH/NiCad. This is pretty straightforward. If you try to use the ESC with more cells it will break. It's also worth noting that many speed controls also give a minimum voltage or number of cells.

### **ESC features BEC**

BEC stands for Battery Elimination Circuit. It is a facility, which allows the radio receiver and servos

to run off the main motor battery (within certain conditions) so that you do not need a separate receiver battery. There are certain limits associated with BEC circuits that you need to keep in mind. BEC works by reducing the motor battery voltage to down to the 5V needed by the receiver. Doing this creates heat. Because of this it will only work with a main battery of up to some specified number of cells, often 10 cells (or 12V), and also with a specified load often 1 or 1.5A. The load is sometimes expressed as a number of servos and may reduce as the number of main battery cells goes up. For example it may allow three servos up to two Li-Poly cells and only two servos for a three-cell Li-Poly pack, with no BEC over four Li-Poly cells.

### **Motor cut off**

This feature is always associated with BEC. It cuts power to the motor before the battery is completely exhausted so that you still have power to the radio to get to a safe landing. Motor cut-off voltages nowadays are programmed into the speed controller and can auto detect the number of cells used once a power source is initially plugged in.

### **Brake**

Just as it sounds. When the throttle is at zero it applies a braking effort to the motor to stop it turning. This is to allow folding propellers to fold neatly rather than wind milling around creating lots of drag. Most are used on gliders and old-timers, which typically use the motor to get them up and then thermal around, sometimes for ages.

### **Opto-isolation (OPTO)**

This feature electrically isolates the signal from the radio throttle channel from the ESC. Doing this can dramatically reduce the level of radio interference, which can be created especially with very high currents. You cannot have both opto-isolation and BEC working at once in an ESC, though quite a few allow you to select at installation which of the two features you want to use.

### **PWM (Pulse Width Modulation / High rate control)**

The control of motor speed is obtained by switch-

ing the power to the motor on and off in various ratios, e.g. maximum throttle is permanently on, half throttle is on half time, off half time, etc. This switching on and off is done many times a second. The speed at which the switching takes place has a large effect on overall efficiency. Early speed controls used what is known as “frame rate” switching, which means that they switched approximately 50 times a second, the same rate frames of information are delivered over the radio. Most modern ESCs switch at a much higher rate, which makes them much more efficient, i.e. they lose less power as heat in the controller. Switching rates around 3000 Hz (times a second) are about optimum. Anywhere between 1000 Hz and 5000 Hz is acceptable.

### **Timing Mode**

Timing mode is similar to PWM and controls the on/off switching in the motor. There are two types:

- Soft timing: for two-, four-, six-pole motors (Mini AC, Kontronik, Hacker).
- Hard timing; six or more pole motors (Jeti Phasor, Mega, Plettenberg).

Hard timing increases both the motor revolutions and the current (up to 20%) with the same propeller and battery pack when compared to soft timing. Hard timing is more suitable for fast flying models.

Always use soft timing initially and after a few flights if the temperature of the batteries, speed controller, and motor are below 50° Celsius, then it is possible to test the system using the hard timing mode.

Note: Hard timing should not be used with any two-pole motors (Mini AC, Kontronik, Hacker).

### **Turning the speed controller on/off**

Brushless speed controllers do not normally come with an on/off switch, so to enable an ESC you need to plug the battery into the ESC. Prior to that you do need to ensure your throttle is set to idle/low and it is switched on. Normally a set of beeps or tones will denote it being armed.

To turn off or disarm an ESC just unplug the battery source.

### Disabling BEC

To disable BEC on speed controllers where a separate receiver pack will be used is done by removing the middle cable from the servo, receiver cable which goes from the speed controller to the receiver. In OPTO speed controllers this is not required. →

### REMEMBER --

**OUR NEXT MEETING IS SCHEDULED FOR TUESDAY, AUGUST 18, 2009 AT THE PROVIDENT BANK BLDG. IN SUN CITY. THE MEETING WILL START AT 7:00 PM**

## SEEN OUT AT THE FIELD



Bill Squire maidenied his new mid-wing beauty. It flew as good as it looks.



Matt Stein's newly recovered Something Extra #1 was also maidenied in July. With 3 new flights, the airframe now has over 500 flights on it.



Jeff Miller poses with Matt Steins two 12 year old grandchildren, Jacob and Samuel. Jeff and Matt are teaching the boys to fly under the Club's new Introductory Pilot Program.



Jeff has been a very busy instructor. Here he readies one of the Club's 40-size trainers prior to giving new member Stewart Lease his next flight lesson via the buddy box.