



November 2008

Transmitter

The Newsletter of the Palomar RC Flyers

RC Web Site — www.PalomarRCFlyers.org

Parents please pass this copy of the Transmitter on to your Junior Member(s) as you see fit.

November 2008 President's Column

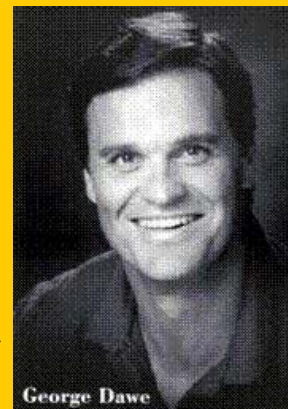
Ok, aside from that presidential Election thing, this is the biggest election of the year...at least for the Palomar R/C Flyers! Therefore you need to vote! Ballots should be mailed to you soon and the winners will be announced at the Christmas Banquet.

At the last meeting, Vice President, Curtis Kitteringham, and Secretary David Truax, announced they finished the arrangements for the Christmas/Holiday Dinner. An announcement for the dinner appeared in last month's issue regarding time and pricing and should also be in this issue, so make sure you look for, buy your tickets and put it on your calendar! This year as in the recent past, the dinner will be catered. The meal will feature Turkey and Ham with all the trimmings!

Many of you may have probably noticed that the Sun Shade on the fixed wing field has been modified! The job was completed in a manner that leaves no one sunshade more than 300 square feet, thus making us exempt from San Diego County's permit requirements! As you also know, we have complied with the County of San Diego's directives, as far as the Car track was concerned. That leaves only the helicopter field's sunshade, for which holes have been augured and the "Containers" to be permitted on the landlords "Master Building Plan" as temporary fixtures. The helicopter field should get 2 new poles this weekend and then modified the rest of the way in two weeks. Its slow going when only 3 other people show up to do the work!

There is still time to earn Palomar dollars! As stated above, the helicopter field construction remains and then the final Palomar Dollar opportunity as a volunteer judge and/or contest director assistant at the two day Pearl Harbor Classic event which will be held on December 6 & 7, 2008 also provides a Palomar dollar opportunity!

Speaking of Combat, another build-a-thon was scheduled to take place, this time at David Drowns house. Hopefully, many people showed up to build their own open or slow survivable ship! The Pearl Harbor Classic, scheduled for December 6th and 7th should be a big event! In addition to SSC and the Open events, we are hosting our first 2548 event. Please see the RCCA website for 2548 rules and entry qualifications! A reminder...I am flying in the 2548



George Dawe

ei-

event! So come see a Combat event! If you haven't watched one, You NEED to see a combat event before you ring in the new year!

Remember, just because daylight savings time is gone, doesn't mean you can't come learn to fly! Informal flight instruction is always available through one of the instructors listed at the end of this issue of the Transmitter!

At the last meeting several "dues raising" proposals were put forth, discussed and voted upon! All were defeated as in these tough economic times, the club membership wisely thought it better to keep dues at the 2008 level for at least another year! With the budget I outlined in my last Newsletter, assuming dues intake stays about the same, we should be fine. Again, I will ask the new Board of Directors to approve the proposed 2009 budget I drafted in last month's Transmitter issue and presented to the Membership at the October 2008 General Club meeting at the first 2009 board meeting.

One last item! Bill Hill finished in Second Place at the Fun Fly fly off representing the Palomar R/C Flyers. It should be noted that the two top spots went to guys that flew "Electric Aircraft". "Times are a changing!" Congratulations to Bill and all the other Palomar R/C Flyers, Gary, Butch and "Lawndart" Bob for their participation in the 1st annual Interclub Fun-Fly Event!

That's all for now! Fly safe...and avoid flying over Highway 15! Have fun in our great Hobby!

Your President,

George Dawe

BOARD MEETING Oct 29th

There will be an SSC build-a-thon on Nov 15th. For location and time, call David Drowns. The build-a-thon for 2548 combat ships will be scheduled for January. Board voted \$200 to Darrel Albert to purchase more streamers in preparation for December's Pearl Harbor Classic combat event. Entry fees for the PHC will be \$15 for the first event and \$10 for each event after that.

Christmas Dinner tickets are available at the meetings or by mail from Dave Truax. Adults are \$20 and juniors under 18 are \$8. Ticket sales must be cut off by the second week of December. Make checks out to PRCF.

Joe Buko's treasurers report:

MMF --- \$6773.72

Checking --- \$328.70

Total --- \$7102.42

The auction at the November meeting will benefit the raffle at the December dinner. Call Robin Solomon or Dave Truax if you want to donate to the auction or the raffle prizes. All donations graciously accepted.

Work party at the field to cut up the sun shade will be on November 8th. Be there or be nominated for the board.

GENERAL MEETING Oct 16th

Meeting called to order at 7:33. George reported on the maintenance of the trainer fleet. Herb Hayes volunteered to help on the rebuilds. We received a nice thank you letter and photograph from troop 708 of Vista. George is the aviation merit badge advisor for San Diego and San Bernardino counties and he helped several Scouts complete their merit badge requirements. Our members also put on a low key static show at Tom Johnston's church.

The members held a spirited discussion on the proposed dues raise. After the break, Prop B, dues remain the same for a year,

Nominations for club officers for 2009 are as follows:

President-George Dawe ,
 Vice President -Bill Hill
 Secretary-Dave Truax,
 Treasurer-Joe Buko

Board Members -

Darrel Albert,	Frank Bataglia.
Tom Johnston,	David Drowns,
Butch Abongan,	Bob Peterson,
Todd Melton,	Justin Barry

Varley Longson declined to run for the board, but will remain as Membership Director

Joe Buko's Treasurers report is as follows:

Money Market-	\$7273.72,
Checking-	\$636.70
Total of	\$7910.42

Model of the Month was won by Frank and Ethel Burke's sleek 1-6th scale Pica Spitfire. Wingspan of 88" with a Revolution 52cc engine and Robart retracts. Manufacturer's estimated weight is 12-14 pounds and this one came in at 21 pounds 2 ounces. The size was large enough to show off the Spit's graceful wing and fillets and Ethel's cockpit detailing.

Bill Hill showed a slick Predator 500 that converted to E- power. A few weeks later Bill flew it at the Pylon event and it seemed to be very competitive. Bob Peterson brought in a 1973 Du-bro heli with a K&B .40 and prop mounted ABOVE the rotor blades. A one of a kind model, to be sure. William Demoore was present and daimed the attendance prize, a Magnum .91 four- stroke

Tickets for the club Christmas Dinner on Dec 20th are now on sale. Adult tickets are \$20 and juniors under 18 are \$8. Buy them from Dave Truax at the November meeting or by mail to Dave Truax 1312 Shadow Hills Dr. San Marcos Ca 92059. Make checks out to Palomar RC Fliers

Bill from Hobby Town brought in several new E- models, including a micro heli, a slick T-28 Mentor and a foamy Corsair

Raffle winners included

Dave Truax-Hi-Tech Flight- pak,
 Larry Hufford-K&B.40
 Dave Truax-P-40 die cast
 Kieth Albert-B-17 kit.

Combat Corner

There will be a combat Build-a-Thon at David Drowns house tomorrow Sat 16th starting at 9:00a.m.. David's house is in Escondido and if you plan to attend call him at

760-740-1715

For directions

NEWSLETTER EDITOR HAS DECIDED TO MOVE ON

I have decided to step aside for next year after three years of publishing this letter. It has been very rewarding in many ways but those months seem to flash by a little too fast and so I hope to try my hand at something else, like flying more often, or even building a plane or something like that. Frank Battaglia has agreed to fill in the spot in my place and I will assist him if he needs it until he is comfortable with the job. So starting in January all Newsletter material should be directed to Frank at:

760-727-4574

E-mail—fbattagl01@cox.net

**Model of the Month
October 2008**



Model of the Month for October was awarded to Frank Burke for building this 1/5 scale Spitfire Pica kit. The wing span is 88 in., it weighed in at 21 lbs. 2 oz., and took 5 months to complete. It is powered by a Revolution 52cc gas engine, has Robart retracts, Hi-Tec servos, and uses a JR Spectrum radio. Thank you to Varley Longson for taking it up for the maiden flight.

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BIG 4-STROKE WW-II WARBIRO



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TODAY!

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ARF

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Cypher Heli



Length: 25.8 inches, Rotor: 27.3 inches
Strong, lightweight, fully 3D aerobatic, and ARF.
Includes: brushless motor & ESC. Suitable for
3-c Li-Po (extra). Hurry! Sale ends
Dec. 31, 2008

No. 163140, Regularly \$199.99

SALE 153³³ SAVE 46⁶⁶

MASH Heli 2.4GHz



MASH+



Rotor: 13.4 in. **BEGINNER FRIENDLY!**
Hurry! Sale ends
Dec. 31, 2008

New 2.4GHz Radio System
Ready-To-Fly Micro Heli
100% Factory assembled. MASH is stable
and easy to fly. (8 AA alkaline cells extra).
No. 163127, Regularly \$159.99

SALE 119⁹⁹ SAVE 40⁰⁰

EF-16 EDF Jet



Includes ducted fan unit and high speed
brushless motor & ESC.

No. 107312, Regularly \$139.99

SALE 99⁹⁹ SAVE 40⁰⁰

NOVEMBER 2008 CLUB FLIER

Mark your
calendar!

Friday,
November 21



Hobby People

starts our annual
Thanksgiving
5-Day weekend sale

Hobby People

CALIFORNIA:

- | | |
|------------------|-----------------|
| Camarillo | Chino Hills |
| El Cajon | Encino |
| Escondido | Fountain Valley |
| Hesperia | Lake Forest |
| La Habra | Lakewood |
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| Riverside | Redlands |
| Rancho Cucamonga | |
| Santa Clarita | San Diego |

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- Las Vegas North

For store info, call:
1-866-HOBBY-4-U

BOY SCOUT DAY
Troop 708

October 16, 2008

George Dawe, President
Palomar RC Flyers

Dear George and Palomar RC Flyers:

I would like to take this opportunity to express our deepest gratitude to yourself and your club members for an awesome day of flying and learning last weekend. All our Scouts and adults had a terrific time and they were all abuzz about earning the Aviation Merit Badge. In fact, two Scouts are now talking seriously about becoming pilots. Well done!

As a Scout leader, I appreciate the time and effort it takes to put together a program like this. Yours was the perfect mix of academic and hands-on learning. In addition, the flight instructors were all extremely professional, courteous and most of all, patient!

Thank you all again for great time that will not be soon forgotten.

Finally, if your club has any future maintenance needs in and around Johnson Field, our Scouts are always looking for service projects. Please don't hesitate to contact me if you are interested.

Sincerely,

Scot Hogan
Scoutmaster, Troop 708

4946 Amador Dr.
Oceanside, CA 92056
(760) 940-1673
Troop708Mailbox@cox.net

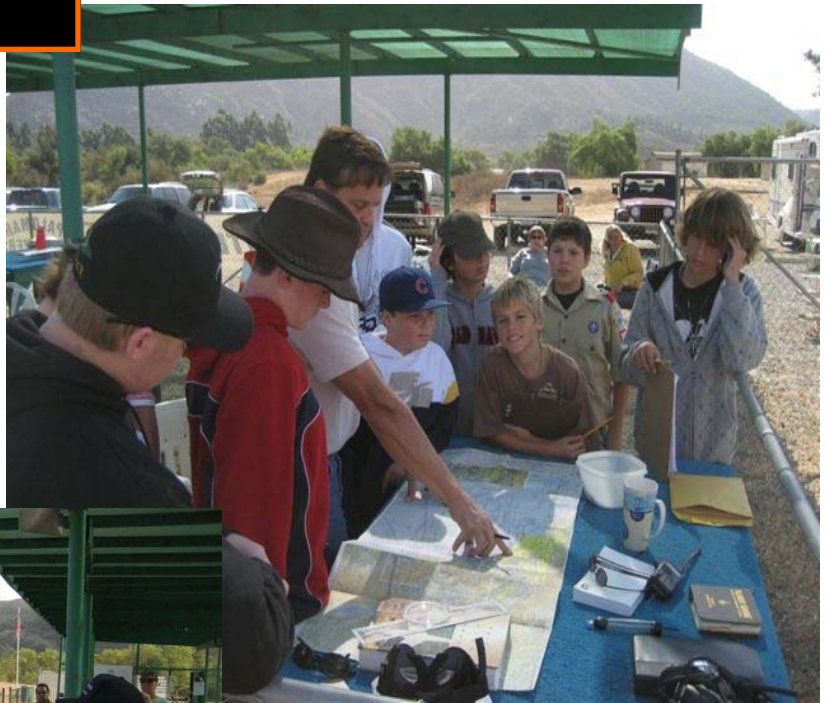
**BOY SCOUT DAY
Troop 708**



Here are some photos that were taken on Saturday 10-11-08 at the field of the Boy Scout Troop 708 Vista. George Dawe, Butch Abongan, Darrell Albert, David Downs, Varley Longson, Todd Melton, Bill Hill, and Don White (and a few others that I forgot to mention) did a super job to help 12 boy scouts achieve their Aviation Merit badge and to fly an RC aircraft for the first time. The boys had a blast! In addition, 7 parents (including one mom) did get some stick time as well.



BOY SCOUT DAY
Troop 708





CHRISTMAS/HOLIDAY DINNER

The club's Christmas Dinner and raffle will be held at the San Marcos Senior Center on Sat. Dec.20th, doors opening at 6:30 pm. Dinner buffet starts at 7:00pm, with the awards and raffle starting at 8:30 and continuing to 10:00pm.

We have worked hard to keep the ticket prices near the levels of the past years. Adults, over 18 will be the same \$20.00 and juniors, 18 and under will be \$8.00. Your ticket will be good for dinner and entry to the door prize raffle for aviation themed memorabilia, candy and movie tickets. tickets will be available at the club meetings from Secretary Dave Truax or by mail from

Dave Truax

1312 Shadow Hills Dr.

San Marcos CA 92069

Please make checks out to Palomar R.C. Flyers



LOCAL BOYS WIN SCALEMASTERS EVENT IN FLORIDA

29TH USSMA CHAMPIONSHIPS SARASOTA FLORIDA

Ron Peterka

Well Curtis Kitteringham and I just crossed off one more item on our “bucket” list. You know, that list of things you want to do or see before you kick the bucket. We won first place in the Team Scale event at the USSMA Championships this month in Florida.

Before anything else we want to thank USSMA, especially Carolyn Van Herk, for all the work they did organizing the event. Thanks to the Sarasota R/C Squadron and the CD John Hay for all the preparation, operation, and clean-up the club did to make this competition come off. Thanks to the many sponsors who make a contest of this size possible. What a beautiful field to fly off of! There are more thank you's due, but more on that later.

For Curtis and I this competition had a theme..... persistence. It took eight years of persistence to finally win a Championship. We had to have persistence to convince our respective spouses that this was a good thing to do. And when we finally got to the meet we needed a huge dose of persistence after the engine quit on our first official flight resulting in a booming score of 44. After numerous perfect practice flight performances, plug fouling shut us down. Fortunately, the plane got back undamaged.

In the resulting repair and engine trouble shooting process we managed to crack the insulator between the carb and the engine block causing a vacuum leak. Here is where a ton more thank-you's are needed. It took almost three hours working in the Florida sun to finally get the engine running again and in all that time numerous people tried their best to help us. One fellow called for a friend to bring new parts from a local shop. Others rummaged through their own spare parts bins for possible help. The announcer pleaded for help. Advice was plentiful, but unsuccessful. Finally a Sarasota club member went home, took the insulator from his own model and brought it to the field. It was not quite the right part, but it worked! We were back in the competition. If it had not been for the great help of so many people, we would not have been able to make another official flight, and would not have been able to win our trophy. A big thanks to all



those people we don't even know.

We had taken a Mulligan so our second flight was the last one on Friday. The flying went on in nearly perfect conditions. Light winds and partially cloudy skies making a great backdrop for the models in the air. Large crowds of spectators showed up on the weekend to urge us all on. The judges worked hard and it took perfect flights to get very high scores. We, unfortunately didn't. High, but not perfect either. At the end of Saturday's flights we appeared to have a possible third or even second place in hand. It might depend on the Sunday flight.

Sunday was bright, clear, and hot. All the days were hot and humid. Hard for us Westerners to handle and we almost melted. Our last flight turned out to be our very best score and to our amazement, we wound up in first place. When they handed us the trophy it was the strangest, best, feeling you could imagine.

Oh, the Stinson also won the plaque for "Best Golden Age" model.

Not every contestant was as lucky. My good friend Oscar Wiengart had sent his 1/3 scale Ercoupe along with me in my RV and he flew to Sarasota to fly in team scale with a local pilot. The plane arrived safely and he connected with his pilot a day before the static judging began. After a thorough check-out a test flight went off without a hitch and a second flight was begun to practice the maneuvers planned for the contest. Take-off was fine.

During the first circuit around the pattern the plane glitched slightly and Oscar asked the pilot to land. The plane made an immediate turn and on final it appeared to lose radio control and

went nose first into the center of the runway destroying the model completely. Immediately after the

crash a channel monitor was turned on and indicated no interference in any channel. Before the model was moved the radio was checked and all servos still plugged in worked perfectly. Both batteries checked OK. It appears the radio may have been affected by engine ignition 'noise' although the model had been flown for over 50 flights in the past with no problems.

Poor Oscar was out of the contest before getting one official flight after traveling over 2500 miles. Good sport that he is, he stayed, helping Curtis and myself with our problems and he enjoyed the Saturday banquet.

Cont'd on next page



Perhaps due to the economy, or high gas prices, attendance at this Championship was a little low. There were 31 entries spread around Expert, Advanced, and Team Scale. And while the Sarasota field is a well equipped and beautiful place to fly its airspace is limited compared to some fields. The flying box is limited by noise factors over nearby neighbors. For sport flying this is no problem, but for USSMA it became a large problem with big models and the required figure eight. After conferencing with pilots, USSMA officials, and the Sarasota RC Squadron officials, it was decided to delete the required figure eight making only four mandatory maneuvers and six additional maneuvers. Every contest has something that goes awry and this was the one for this contest. With good communications the problem was worked out to everyone's satisfaction and the meet continued.

More on the Championships at www.sarasotarc.com or www.scalemasters.org

Models: TX articles:08championships

NOTICE TO MEMBERSHIP

KEEP OUR TABLES CLEAN

Please, everyone should try to keep the aluminum covers to our field benches clean. The chemicals in the glo- fuel will attack the aluminum over time and make them rough and even more difficult to keep clean. So when you're finished using a table just wipe them off with your paper towels , or whatever, and dispose of the towels in the trash bins. Your cooperation in this matter is needed

ASSEMBLY INSPECTION

- Check Security - Engine, fuel tank, wheels, receiver, battery, servos.
- Pull Test - Linkages and control surfaces.
- Receiver Antenna - Fully extended and away from metal.
- Verify Center of gravity location.
- Conduct Range Test- with transmitter antenna collapsed.

PRE-FLIGHT(EACH FLIGHT)

- Check receiver voltage under load.
- Check transmitter power level.
- Check engine high speed, nose up.
- Check engine idle, nose down.
- Extend transmitter antenna.
- Check control surface direction and response.

Combat Corner

These pictures were sent in by Richard Martin and show the laser cutting of our latest batch of combat planes. Richard's family owns a machine shop that uses this sophisticated equipment for parts production. He was very gracious to allow us access to and his help in producing 15 planes, perfectly cut from coroplast thus bringing down manufacturing time by about five hours per plane. The results should be spectacular. Too bad we're just going to tear them up something terrible when WWII resumes on Dec 6th and 7th.



SEEN AT THE FIELD

Misc. No captions



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LEARN HOW-TO

MOD A PC POWER SUPPLY

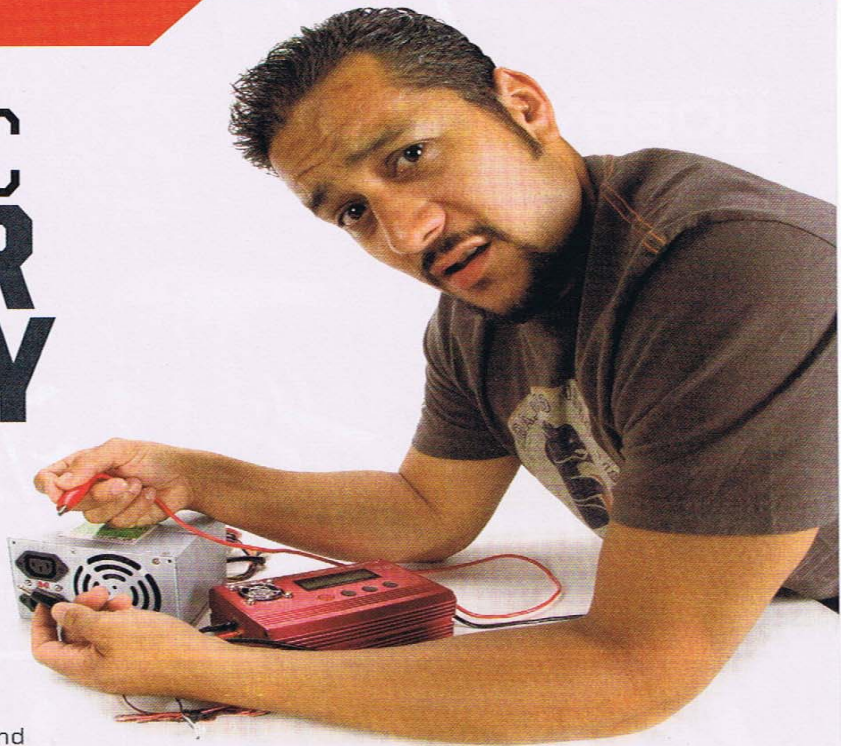
GOOD POWER
ON THE CHEAP!

Words: Chuck Bassani

So - you've found the 'perfect' battery charger and it does everything you want it to do. Most chargers are designed to operate off a 12.0 to 13.5 volt DC power source, and there's a good reason for that; it allows them to run off your car battery. But - what do you power it with if you need to use it inside?

The obvious answer is to purchase a commercially available DC power supply. A 12.0v supply with decent current capability in the order of 12 amps will run you in the neighborhood of \$100. You do, however, have another option; modify a computer power supply.

Most PCs contain power supplies designed to the ATX specification (see www.formfactors.org). These units are relatively small, lightweight, and can easily provide 13+ amps of current on their 12.0 volt output. Best of all, you can usually get your mitts on one of these little gems for free. You just have to pull one from an old discarded computer.



That's one handsome devil.

IS THIS MOD FOR ME?

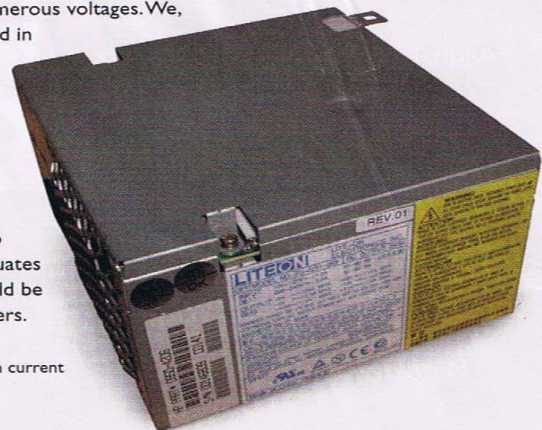
Well, if you want to save 90+ dollars and you can solder and operate a drill, then the answer is yes. No circuit modifications are necessary. You just need to add a few simple components and do a little wire maintenance.

The cost associated with the conversion will depend on how fancy you want to get, but a basic, no-frills conversion can be done for around \$5. Yep, that's not a misprint - I did say "\$5". So let's take a look at what's involved in converting an ATX PC Power Supply into a bench supply for your charger.

FINDING THE RIGHT ONE

ATX power supplies output numerous voltages. We, however, are primarily interested in only one; the +12.0v output. A label on the side of the case indicates the current ratings for each of the outputs. Look at the +12.0v spec and determine if it produces sufficient current for your needs. You'll probably find it capable of 12 to 13 amps at a minimum. That equates to about 150 watts, which should be sufficient for the majority of users.

Check the label. It tells you how much current the 12v tap can supply.



» HERE'S WHAT WE'LL BE DOING...

First, you'll need to add some output posts to the power supply case. This will provide the taps necessary to attach your charger to the supply.

Because ATX power supplies employ a 'switching' circuit type design, they require a load in order to operate. Although the charger itself is a load, you're going to add an artificial load internally. This will allow the supply to turn on without anything attached to it.

Finally, you'll need to address two signal lines. The first one is a 'POWER ON' line used to turn the power supply on/off. This signal needs to be activated, either permanently or through a switch. The second one is a 'REMOTE SENSE' line that facilitates letting the power supply compensate for excessive drops in voltage due to the length of the wires. You'll have to do something with that one so the power supply is happy.

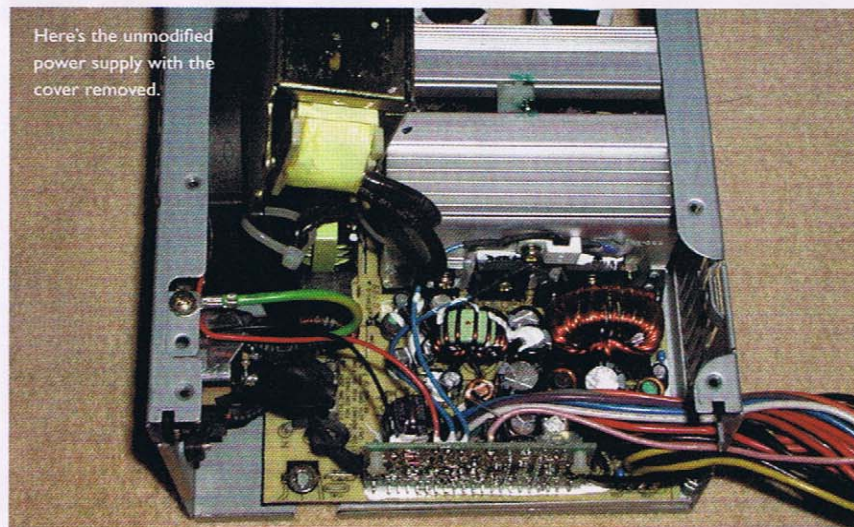
Optionally, you can add a 'Power-On' lamp that illuminates when the supply is turned on. If you really want to get fancy, you can add a current meter to visually display how much current the supply is sourcing. If the plain gray box doesn't go with your décor, you can also dress it up with some vinyl 'skins'.

COMMON SENSE DISCLAIMER: As is appropriate when working with any electrical equipment, PLEASE exercise caution. Don't attempt to perform any work on the power supply while it's plugged in. Line voltage can be lethal. Read the ATX specification and familiarize yourself with its components. A good understanding of the various voltages present and their associated power capability is encouraged. Even when unplugged, capacitors can hold a pretty good charge and thus continue to pose the risk of an electrical shock. Don't touch stuff you don't need to.

THE MOD
OPEN THE CASE

The case is made up of two pieces. The components are mounted on one piece and the other piece serves as a cover. Remove the screws holding the cover and slide it off.

On some supplies (like the one in the picture), you may find a transformer attached to the cover. You can temporarily remove this from the cover. It'll make things a little easier to work on.



Here's the unmodified power supply with the cover removed.

» DIFFICULTY

SCALE RATING: 1=EASY 5=ADVANCED

5.0



» TIME TO COMPLETE



45 Minutes

» ITEMS & TOOLS NEEDED

-  ■ ATX POWER SUPPLY
-  ■ INSULATED BINDING POST
-  ■ ONE 10 OHM, 10 WATT POWER RESISTOR
-  ■ HEAT SHRINK TUBING
-  ■ HEAT SINK COMPOUND
-  ■ NYLON WIRE TIES
-  ■ SPST PANEL MOUNT SWITCH (OPTIONAL)
-  ■ POWER INDICATOR (OPTIONAL)
-  ■ CURRENT METER (OPTIONAL)
-  ■ ADHESIVE BACKED VINYL (OPTIONAL)
-  ■ SCREW DRIVERS
-  ■ SMALL OPEN-END WRENCHES
-  ■ WIRE CUTTER
-  ■ WIRE STRIPPER
-  ■ SOLDERING IRON AND SOLDER
-  ■ HEAT GUN
-  ■ DRILL MOTOR AND BITS

LEARN HOW-TO


MOD A PC POWER SUPPLY

TECH NOTE

ATX Specs

The ATX specification allows $\pm 5\%$ tolerance on the +12v output. This means that it can output anywhere between 11.4 and 12.6 volts and still be considered within tolerance. I find that most supplies output towards the low side. One of the characteristics of the ATX power supply is 'cross regulation'. This is an interaction between the +3.3v, +5v, and +12v outputs. It's possible to raise the voltage on the +12v output slightly by loading up the +5v output a little heavier. To do that, you can substitute the one 10 ohm resistor with two 1 ohm / 10 watt resistors wired in series. You should be aware, however, that in rare cases, the power supply may detect this as an overload condition if there isn't a load on the 12v tap.





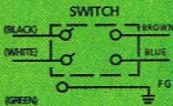
300W






SWITCHING POWER SUPPLY

AC I/P	115/230V ~ 7A/3A	60/50Hz
DC O/P	+5V +12V -5V -12V	
MAX. A	30A 10A 0.5A 0.5A	
MIN. A	0.5A 0.5A 0.5A 0.5A	

CAUTION!
HAZARDOUS AREA
Input correct voltage selector.
Do not remove this cover. Trained service personnel only.
No user serviceable components inside.

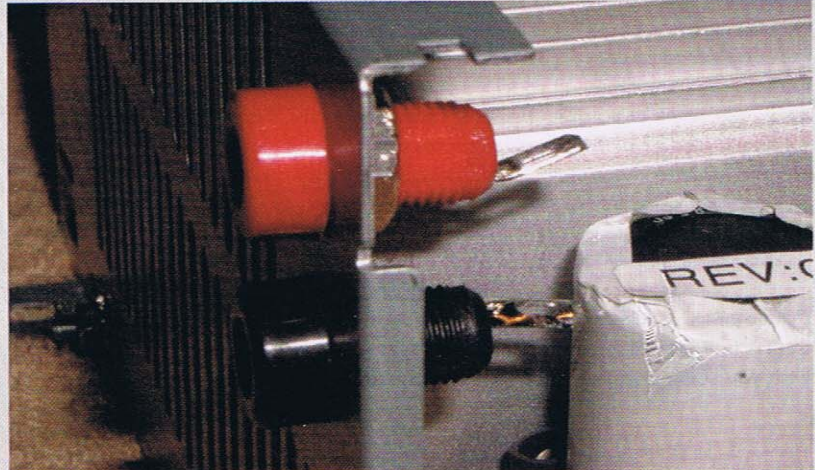
SWITCH



MOUNT THE OUTPUT POSTS

Once the case is open, take a good look inside. You'll need to find an area to mount the two output posts and possibly other optional parts. Make sure you find an area with enough clearance to allow you to tighten the mounting hardware and connect the wires to them. Drill the appropriate size holes and mount the posts.



Find a nice open spot to mount the output posts.

IMPORTANT: When drilling any holes, make sure you don't drill through and damage the internal components with the drill bit. Also, make sure you blow out any metal shavings as these could cause a short circuit when the supply is turned on and subsequently damage the supply.

MOUNT THE LOAD RESISTOR

The load resistor is going to get warm. Putting 5 volts across 10 ohms will draw 0.5 amps of current. That means the resistor is going to dissipate about 2.5 watts of power. Although that's only about 25% of its rating, we want to help it keep cool.

Mount the resistor against the metal case or along a heat-sink with some heat sink compound between the resistor and the mounting surface. You can use a bracket or nylon wire ties to hold it in place.



I drilled a small hole in each of these heat-sinks and secured the load resistor to them with nylon wire ties. Don't forget to use heat-sink compound between the resistor and the mounting surface. It helps to transfer the heat.

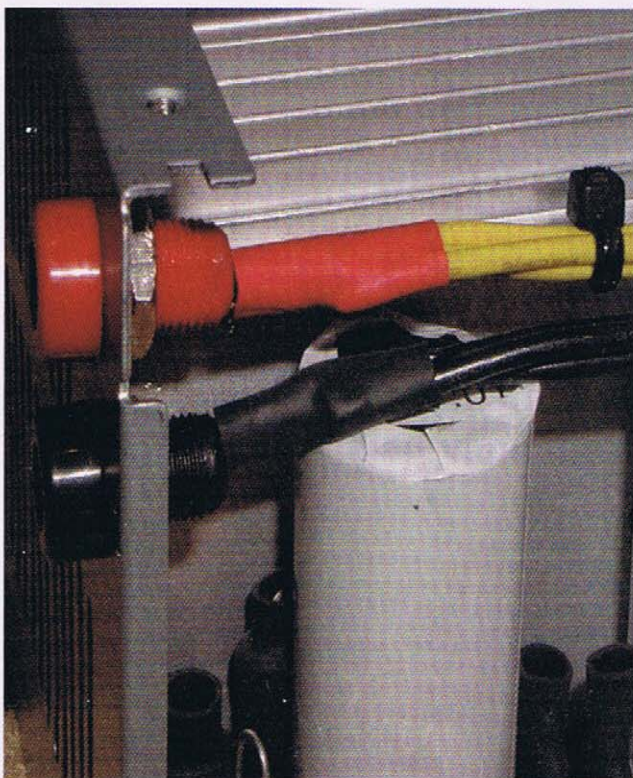
How did that change?

WIRE IT UP

Cut off all the connectors from the wires that exit the power supply. You're going to use some of these wires and the rest will be cut off. When making connections, place a piece of heat shrink tubing over the wires BEFORE you solder them. Slide the tubing as far down the wire as you can so the heat used during soldering doesn't prematurely shrink the tubing. After the wire cools, slide the tubing over the connection and shrink it with heat gun.

12.0 VOLT OUTPUT: The +12v output wires are 'yellow' by convention. Gather up three of them and route them to the output posts. Strip the ends and twist the three wires together. Solder them to the red post.

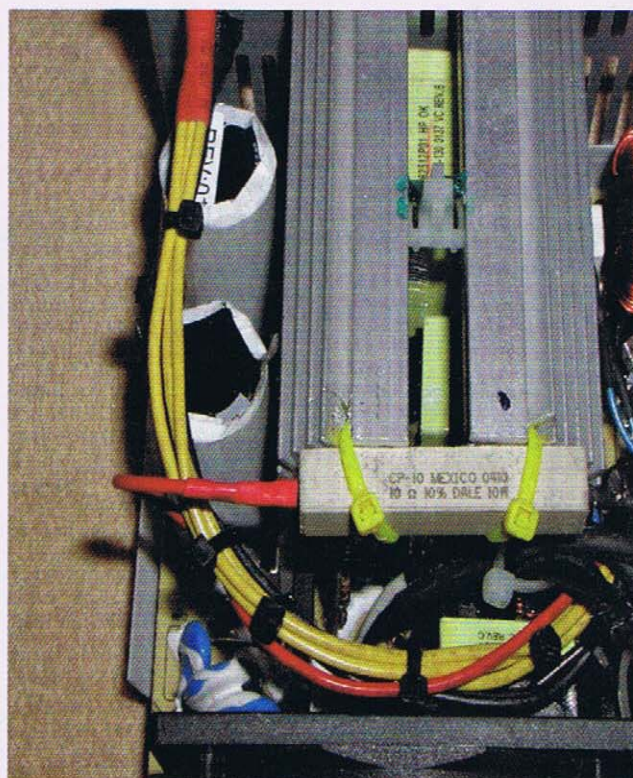
Just as you did with the yellow wires, gather up three 'black' wires and solder them to the black output post. These are the ground wires.



Here you can see three wires going to each output post. This assures sufficient current carrying capability.

5.0 VOLT LOAD: The +5v output wires are 'red'. Solder one of them to one lead of the load resistor you previously installed. Resistors don't have polarity, so it doesn't matter which lead you solder. Solder a 'black' ground wire to the other resistor lead.

A side benefit of this internal load is that it will discharge the capacitors when the power supply is turned off. This will eliminate the electrical shock hazard that existed before it was installed.



POWER-ON SIGNAL: The 'green' wire is this signal. In order to turn on the supply, this signal must be activated by connecting it to ground ('black' wire). You have two choices here; you can permanently solder this wire to a ground wire so the supply turns on as soon as it's plugged in, or you can wire it through a 'single pole / single throw' (SPST) switch.

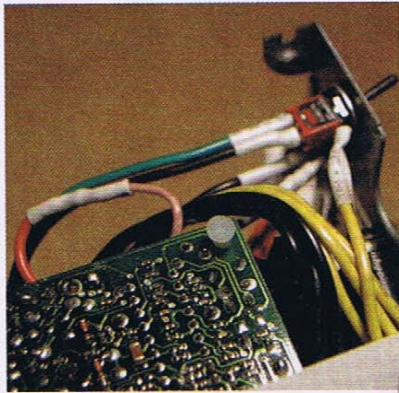
Continued on pg 112

LEARN HOW-TO

MOD A PC POWER SUPPLY

Continued from pg 77

REMOTE SENSE SIGNAL: This wire may be either 'brown or pink'. This line needs to sense voltage in order for the power supply to operate. If your supply has a 'brown' wire, solder it to an 'orange' +3.3v wire. If it has a 'pink' wire, solder it to a 'red' +5v wire.



Using a switch mounted on the front panel to turn the supply on/off is a nice touch. Here you can also see the Remote Sense Signal (in this case the 'Pink' wire) connected to the 5v output.

THE REMAINING WIRES: When you're finished, you'll have a bunch of unused wires left over. Trim these wires to about 1 inch in length and group same color wires together. Shrink a piece of heat shrink tubing over each group to cap them off. If you're going to install some of the optional components, don't do this till you're done. You will still need some of these wires.

When you get to this point, you've completed the basic mod. You now have a functional 12.0v power supply. You can put the cover back on if this is all you're looking for.



This finished mod ready to be put in service.

» OPTIONAL STUFF

As I previously stated, you can add some 'bells and whistles' to add some extra bling to your power supply. Here are some possibilities:

Orange Led
AC POWER INDICATOR: There is an output called '+5v Standby'. This outputs voltage as long as the power cord is plugged in and the AC Switch (if your supply has one) is on. If you'd like to visually indicate that AC power is present inside the supply, wire the 'purple' +5v VSB output to one lead of a 150 ohm 1/4 watt resistor. Connect the other end of the resistor to the anode of an LED. Attach a 'black' ground wire to the LED's cathode.

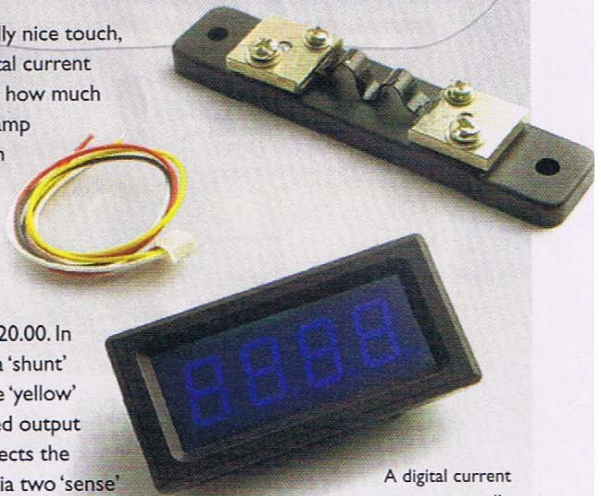
To mount the LED to the power supply case, I use plastic purpose built LED holders. They are available from Radio Shack in packages of 5 for about \$1.50.

NOTE: LEDs have two leads; one is the anode and the other is the cathode. The anode is the longer of the two leads.

Green Led
POWER-ON INDICATOR: There is an output called 'Power OK'. This output is energized when the +3.3v, +5v, and +12v outputs are all above their respective under voltage thresholds. We can use this line to visually indicate that the power supply is on and working. Wire the 'gray' Power-OK line through a 150 ohm 1/4 watt resistor and LED to ground ('black') just as the AC Power Indicator was.

CURRENT METER: For a really nice touch, you can add an analog or digital current meter to your supply and see how much current is being drawn. A 20 amp analog meter is easily wired in series between the 'yellow' +12v output wires and the red output post.

A 20 amp digital meter is a little sexier and can be bought on eBay for around \$20.00. In this case, you need to insert a 'shunt' resistor in series between the 'yellow' +12v output wires and the red output post. A small cable then connects the meter to the shunt resistor via two 'sense' leads as well as to the +5v ('red') or +12v ('yellow') outputs and ground ('black') for power (see the instructions that come with the meter for proper supply voltage).



A digital current meter can really give your power supply that professional look.

SKINS: Putting a decorative skin on the plain gray box is as simple as applying some adhesive backed vinyl. If you chose to do this, make sure you do so after drilling all your holes but before mounting the output posts, indicator lamps, and switch. Make sure you cut away the skin from all the vent holes—and don't forget to add the RC Heli decal!

CONCLUSION

With today's trend of going 'green', salvaging a power supply from the scrap heap and putting it to good use is not only great for the environment—it's also great for your pocket! That's a win-win situation if I've ever seen one.

Happy Charging ...

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Meeting Notice:

The December club meeting will be replaced by the Christmas Dinner on December 20th at the San Marcos Joslyn Senior Center, 101 Richmar Avenue, San Marcos, CA. The next club meeting will be held on January 15th.

January

February

March

Start Monday night instruction to continue until Sept 29th

April

- 20th Fallbrook Air Show (tentative)
- 27th COMBAT - Hunt for Yamamoto (Open B and SSC)

May

- 3rd - Carlsbad Mall show
- 4th - Swap Meet and Open House - Johns on Field
- 9th - 10th - 11th - San Diego Helicopter Fun Fly sanction C

June

21st Flights of Fancy

July

- 4th Club Picnic
- 20th COMBAT Open B and SSC

August

- 2nd ELECTRIC SCALE contest
- 9th FUN FLY
- 24th COMBAT (Battle of Britain) Open B and SSC

September

- 13th Dawn Patrol WWI fly in
- 20th Mall Show North County Fair
- 21st Air show and Swap Meet

October

- Date TBA Miramar Air Show
- 25th Pylon Race - Quicke 500, sportsman and Open B

November

22nd - FUN FLY Palomar Turkey Shoot

December

- 6th and 7th COMBAT (Pearl Harbor Classic) 25/48 Open B and SSC
- 20th Club Dinner and raffle

