



# HIGHVELD AMATEUR RADIO CLUB

## SHACKNEWS

PO Box 19937 Sunward Park 1470

NOVEMBER 2006

Website <http://www.qsl.net/zs6hvb/>  
<http://www.qsl.net/zs6ssc/>

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Sunday morning BULLETINS - 145.7875 MHz & 7062 KHz @ ±08h45.

### COMMUNICATION IS THE NAME OF THE GAME

**Monthly Meeting** Frank ZS6EIN gave a talk on amateur satellites and Keplerian Elements. This was very interesting. An excellent source for Keps can be found at [www.celestrak.com](http://www.celestrak.com)

If you have any ideas on issues to be discussed and possibly demonstrated then please contact a committee member or the email address above.

The end-of-year function is to be held at the QTH of Rex, ZS6REX, on Sunday 3<sup>rd</sup> December from 12:00 onwards. This will take the form of a bring-and-braai. Ladies please bring a bowl of your favourite salad. The club will supply all soft drinks. Anything stronger is for your account. Also – Please freeze a couple 2L bottles of water for the “bar fridge”

#### **Don't forget to renew you subs**

**SSC** This was held at the QTH of Doug ZS6BXU on Saturday 11<sup>th</sup> November. A reasonable turnout was present and lots of discussions on various radio topics were held. The next meeting coincides with the HARC braai.

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Internet. Found a couple of DATA SHEET sites that are very useful.

- 1- [www.datasheet4u.com](http://www.datasheet4u.com) in the order of 800,000 devices here
- 2- [www.datasheets.org.uk](http://www.datasheets.org.uk)

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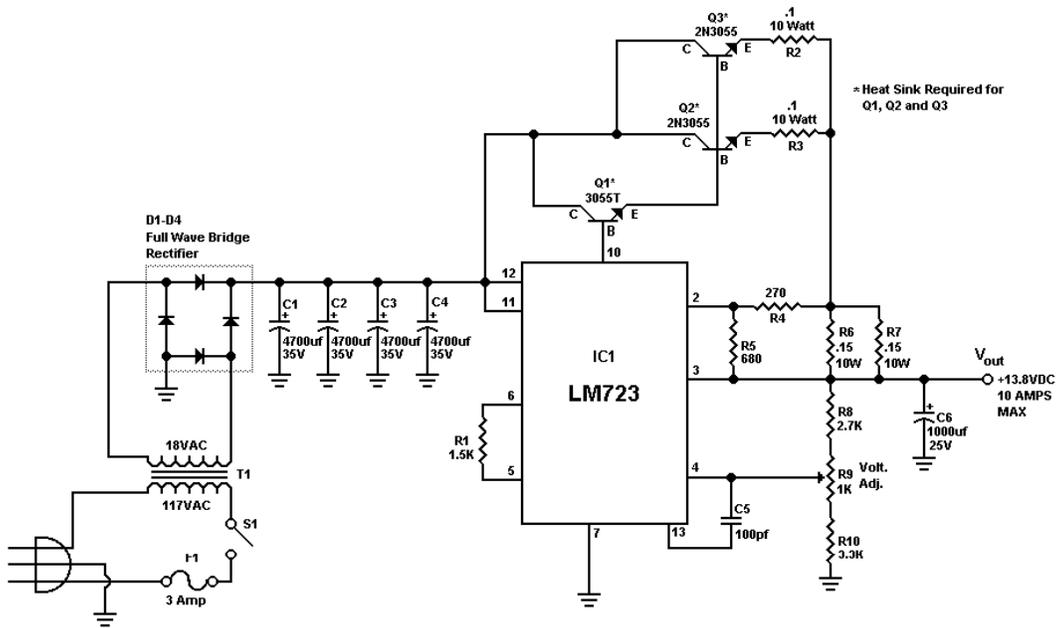


Figure 1

Also found this circuit for a 10 Amp PSU. It also has current limiting. For safety there is a crowbar circuit.

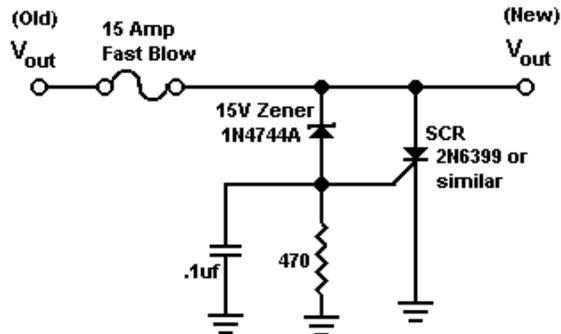


Figure 2

This circuit uses the LM723 IC, which gives us excellent voltage regulation. The circuit uses 3 pass transistors, which must be heat sinked. Resistor R9 allows the fine-tuning of the voltage to exactly 13.8 volts and the resistor network formed by resistors R4 through R7 controls the current limiting. The LM723 limits the current when the voltage drop across R5 approaches .7 volts. To reduce costs, most commercial units rely on the HFE of the pass transistors to determine the current limiting. The fault in that system is that the HFE of the pass transistors actually increases when the transistors heat up and risks a thermal runaway condition causing a possible failure of the pass transistors. Because this circuit samples the collector current of the pass transistors, thermal runaway is not a problem in this circuit making it a much more reliable power supply.

The only adjustment required is setting R9 to the desired output voltage of anywhere between 10 and 14 volts. You may use a front panel mounted 1K potentiometer for this purpose if desired. Resistor R1 only enhances temperature stability and can be eliminated if desired by connecting pins 5 and 6 of IC-1 together. Although it really isn't needed due to the type of current limiting circuit used, over voltage protection can be added to the circuit by connecting the circuit of Figure 2 to Vout. The only way over voltage could occur is if transistors Q2 or Q3 were to fail with a collector to emitter short. Although collector to emitter shorts do happen, it is more much more likely that the transistors will open up when they fail. I actually tested this and purposely destroyed several 2N3055's by shorting the emitters to ground. In all cases the transistors opened up and no collector to emitter short occurred in any transistor. In any event, the optional circuit in Figure 2 will give you that extra peace of mind when a very expensive radio is used with the power supply.

The circuit in Figure 2 senses when the voltage exceeds 15 volts and causes the zener diode to conduct. When the zener diode conducts, the gate of the SCR is turned on and causes the SCR to short, which blows the 15 amp fuse and shuts off the output voltage. A 2N6399 was used for the SCR in the prototype but any suitable SCR can be used. While over voltage protection is a good idea, it should not be considered a substitute for large heat sinks. I personally feel the best protection from over voltage is the use of large heat sinks and a reliable current limiting circuit. Be sure to use large heat sinks along with heat sink grease for the 2N3055 transistors.

---oooOOOooo---

A frog goes into a bank and approaches the teller. He can see from her nameplate that her name is Patricia Whack.

"Miss Whack, I'd like to get a \$30,000 loan to take a holiday."

Patty looks at the frog in disbelief and asks his name. The frog says his name is Kermit Jagger, his dad is Mick Jagger, and that it's okay, he knows the bank manager.

Patty explains that he will need to secure the loan with some collateral.

The frog says, "Sure. I have this," and produces a tiny porcelain elephant, about an inch tall, bright pink and perfectly formed.

Very confused, Patty explains that she'll have to consult with the bank manager and disappears into a back office.

She finds the manager and says, "There's a frog called Kermit Jagger out there who claims to know you and wants to borrow \$30,000, and he wants to use this as collateral." She holds up the tiny pink elephant. "I mean, what in the world is this?"

The bank manager looks back at her and says...

"It's a knickknack, Patty Whack. Give the frog a loan. His old man's a Rolling Stone."

---oooOOOooo---

**For the ladies -**

**HANDBAGS**

Have you ever noticed gals who sit their handbags on public toilet floors - then go directly to their dining tables and set it on the table? Happens a lot!

It's not always the 'restaurant food' that causes stomach distress. Sometimes "what you don't know 'will' hurt you"! Mum got so upset when guests came in the door and plopped their

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handbags down on the counter where she was cooking or setting up food. She always said that handbags are really dirty, because of where they have been.

It's something just about every woman carries with them. While we may know what's inside our handbags, do you have any idea what's on the outside? Shauna Lake put handbags to the test - for bacteria - with surprising results. You may think twice about where you put your handbag.

Women carry handbags everywhere; from the office to public toilets to the floor of the car. Most women won't be caught without their handbags, but did you ever stop to think about where your handbag goes during the day?

"I drive a school bus, so my handbag has been on the floor of the bus a lot," says one woman. "On the floor of my car, and in toilets." "I put my handbag in grocery shopping carts, on the floor of the toilet while changing a nappy," says another woman "and of course in my home which should be clean."

We decided to find out if handbags harbour a lot of bacteria. We learned how to test them at Nelson Laboratories in Salt Lake, and then we set out to test the average woman's handbag.

Most women told us they didn't stop to think about what was on the bottom of their handbag. Most said at home they usually set their handbags on top of kitchen tables and counters where food is prepared. Most of the ladies we talked to told us they wouldn't be surprised if their handbags were at least a little bit dirty. It turns out handbags are so surprisingly dirty, even the microbiologist who tested them was shocked.

Microbiologist Amy Karen of Nelson Labs says nearly all of the handbags tested were not only high in bacteria, but also high in harmful kinds of bacteria. Pseudomonas can cause eye infections, staphylococcus aureus can cause serious skin infections, and salmonella and e-coli found on the handbags could make people very sick. In one sampling, four of five handbags tested positive for salmonella, and that's not the worst of it. "There is faecal contamination on the handbags," says Amy. Leather or vinyl handbags tended to be cleaner than cloth handbags, and lifestyle seemed to play a role. People with kids tended to have dirtier handbags than those without, with one exception. The handbag of one single woman who frequented nightclubs had one of the worst contaminations of all. "Some type of faeces, or possibly vomit" says Amy.

So the moral of this story - your handbag won't kill you, but it does have the potential to make you very sick if you keep it on places where you eat.

Use hooks to hang your handbag at home and in toilets, and don't put it on your desk, a restaurant table, or on your kitchen countertop. Experts say you should think of your handbag the same way you would a pair of shoes. "If you think about putting a pair of shoes onto your countertops, that's the same thing you're doing when you put your handbag on the countertops" - your handbag has gone where individuals before you have sneezed, coughed, spat, urinated, emptied bowels, etc! Do you really want to bring that home with you? The microbiologists at Nelson also said cleaning a handbag will help.

Wash cloth handbags and use leather cleaner to clean the bottom of leather handbags.

[\(From an email received\)](#)

## 73. Berridge

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