

Collins 30L1

I have restored a 30L1 who had lot of problems...

Since this day I know more about it.

IZ8CGQ and his 30L1

"Hi

my 30L1 need full sec capacitor replacement.

the 1850v became 1300 , half f pwr out

300/350W and finally today boom and smoke....Grrrrr.!

Any information for capacitoes 30L1 as spare parts in europe?

73 Gregory »



A smoke ?

Where ? Near the tubes ? near the power supply ??

My experience with 30L1

Some years ago I bought one 30L1 that seemed to be fine...

All was fine during several QSO (except a first problem due to a bad soldering in the relay) and suddenly smoke and plouf !



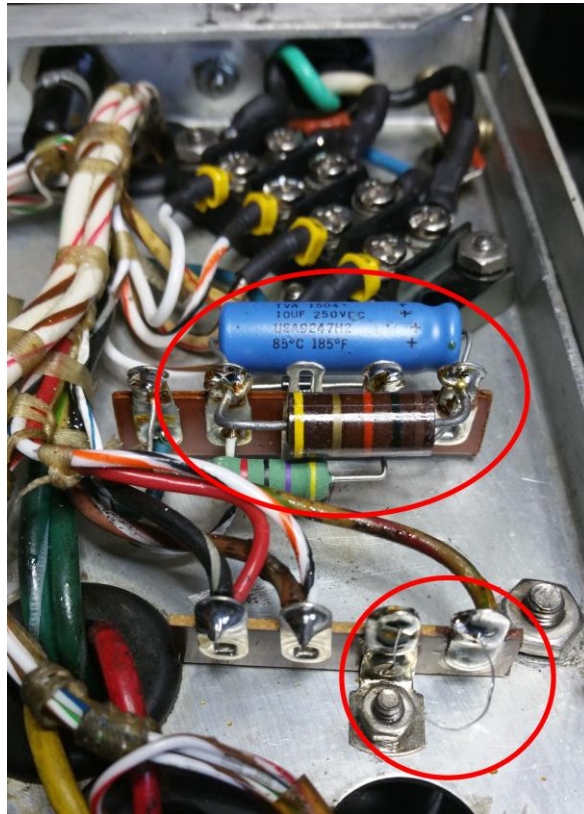
Several problems where the cause of this damage:

- No protections with a very large hairpins
- Bad resistor for the protection (R17-R18)
- Some bad values
- One bad tube that cause the damage in the power supply...

First inspection

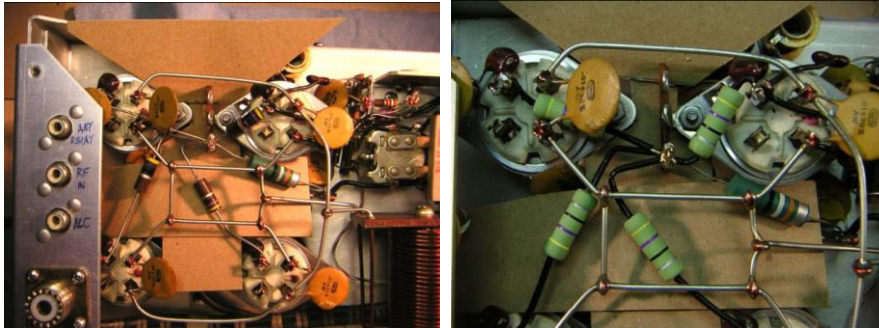
TAKE CARE !!! HIGH VOLTAGE !!!

- 1) Remove all the tubes.
- 2) Make 2 verifications and change it if not good.

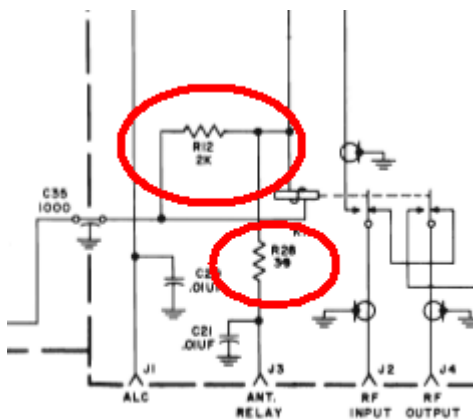


- 3) Verify the large capacitors of the power supply. In your case they seemed to not be original with this green shield. If they are off you will have to change them or to install a modern power supply. But you perhaps have another trouble....
- 4) Vérify CR17-18-19

5) Verify R21-22-23-24 (i had problem with them !)
I change with Ohmite type OY – 2W ceramic composition).
Before and after



- 6) R10 was 1960 ohms (Collins manual 5th edition). Now 1780 ohms (Collins manual 8th edition).
- 7) R12 and R39. The value on mine was wrong..



- 8) R17 and R18
Take care with these two protections resistors !

In my case I change them with 10 Ω 2W 5% metal film VISHAY PR02 series

NEVER MORE THAN 2W !

- 9) Fuses

Must be 8A, never more !

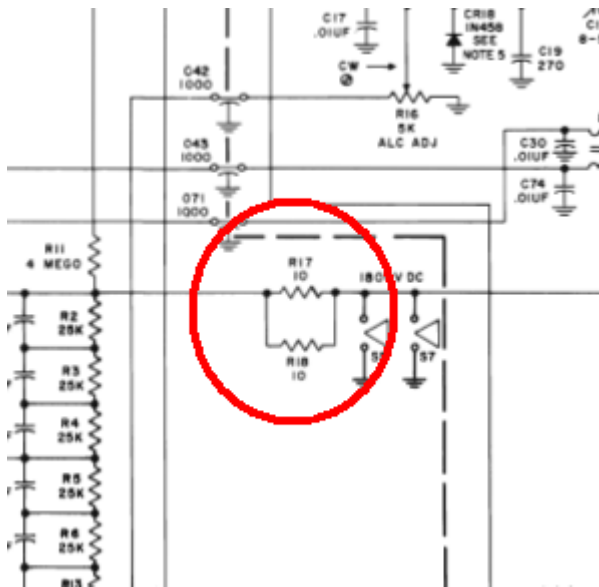
Low voltage

I presume that your transformer is good.

In my case I have voltmeter available for more than 2000V but I prefer to play with low voltage.

So I take a 12V transformer and I do all the tests with it.

For testing I do not plug the two protections resistors and I stay just with the power supply.



Where find components

I buy my components at:

RADIO SPARE <http://it.rs-online.com/web/>

MOUSER <http://www.mouser.it/>

REICHELT <https://www.reichelt.com>

A modern power supply

In my case I decided to change the old power supply by a new one.

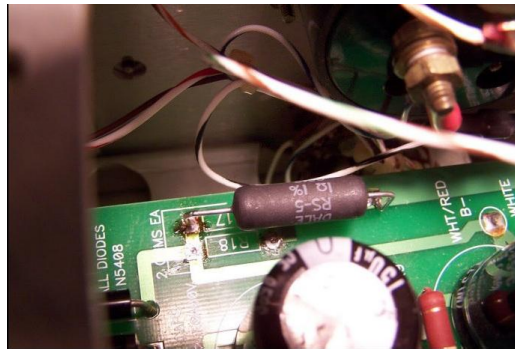
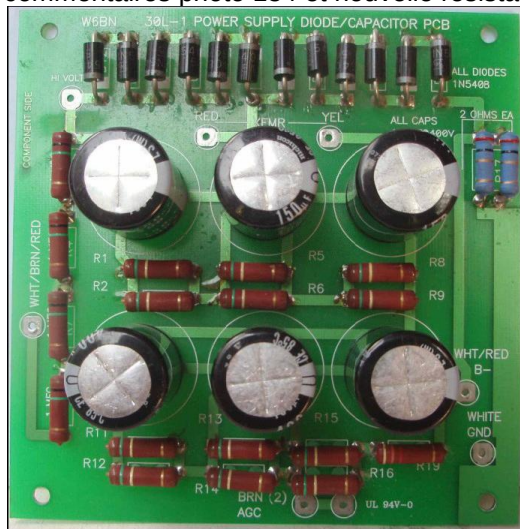
I buy it in US (120€) at W6BN but you can easily build one.

Take care if you buy the W6BN because you have to change some components...

Replace the two 2Ω constituant le shunt du galva (R8) by a 1Ω 5W comme sur le circuit d'origine (dans le kit : Vishay RS0051R000FE70 - 1Ω 1% 5 W Wirewound).

Il est vital pour le galva que cette résistance ne soit pas en circuit ouvert sinon, en position DC amps, tout le courant plaque (600mA) passera dans le galva 500uA.

K4SO ([26]) rapporte que les deux résistances de la carte W6BN ont péri à deux reprises. Voir commentaires photo 134 et nouvelle résistance photo 138-139.



EASY TO DO :

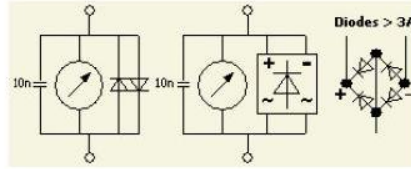
<http://www.ccae.tm6cca.com/Tools.html#30L1-B>

and recently by Mauro:

<http://www.ccaeitaly.com/technical/>

More protections

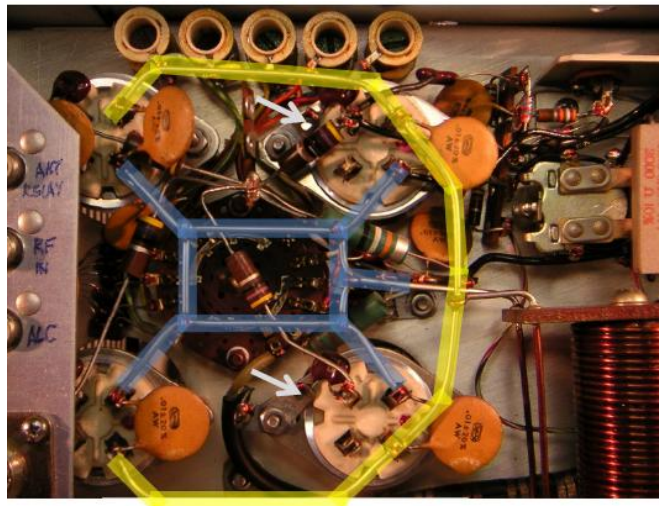
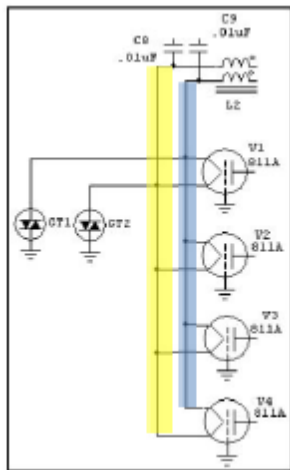
- 1) GALVA with two 1N5408 and a capacitor 10nF **YOU MUST DO IT !**



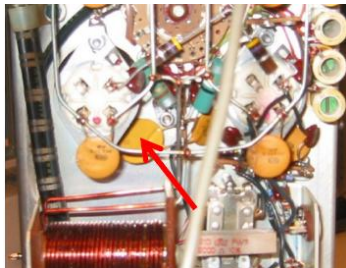
If something in the HT supply goes wrong then meters may be damaged. Often no replacement is available. Suggested is to protect all panel meters with back-to-back connected diodes. Bridge rectifiers are very suitable too. In addition decouple with some 10 – 22nF capacitors because modern high voltage diodes can work well into the HF region.



- 2) Filament protection with GTD
Two GTD (Gas Discharge Tube) (see articles ([39]) ([40])).



- 3) Grid protection with MOV
Panasonic ERZ-V14D221 – 220Vrms / 180V_{DC} – 6kA – clamp 50A





MOV and GTD



At the beginning I got this:

Because a bad value in the power supply capacitor:

After change :



But in any case that would cause smoke and damage...

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