Antique Wireless Association of Southern Africa

 # 210 January 2024

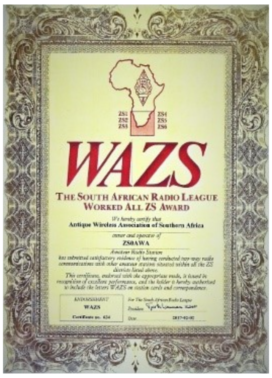
HALLICRAFTERS SX28

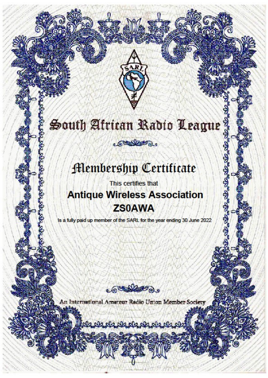
The **Hallicrafters SX-28** "Super Skyrider" is an American shortwave communications receiver that was produced between 1940 and 1946 that saw wide use by amateur radio, government and military services.

In July 1940, the Hallicrafters Company announced the SX-28 "Super Skyrider", the result of a development effort by 12 staff engineers and analysis of more than 600 reports that included input from U.S. government engineers, commercial users, and amateur radio operators. The SX-28's distinctive art deco styling was considered sleek and strikingly modern in 1940. The radio frequency coverage was 550 kHz (0.55 MHz) to 43 MHz in six bands. The SX-28 included an Amplified AVC, a Lamb Noise Silencer, Calibrated bandspread, and Push-Pull audio output. The SX-28 was known for its high fidelity audio together with high sensitivity, stability and selectivity, and good purchase value.

The SX-28 saw use by various branches of U.S. and allied military and intelligence agencies during World War II. SX-28 and Hallicrafters S-27 and S-36 receivers were often rack mounted in British government listening posts and secret listening stations for monitoring German radar and communications during the war such as Beaumanor Hall in the English Midlands where German and Italian encrypted radio messages were sent to Bletchley Park for decoding. A number of the receivers were sent to the Soviet Union as a part of the Lend Lease Act, subsequently modified to accommodate Russian tubes.

Hallicrafters published that 50,000 SX-28 and SX-28A's had been built by the end of its production run in 1946, however the serial numbers appear to indicate a production figure of half, approximately 27,500 receivers. Many of the SX-28/28A's that exist today are in the hands of vintage amateur radio collectors and amateur radio operators.





Inside this issue:

AWA Committee:

* President—Jacques ZS6JPS
* Vice President—Chris ZS6GM
* Technical Advisor—Rad ZS6RAD
* Secretary/PRO—Andy ZS6ADY
* KZN—Don ZS5DR
* WC—John ZS1WJ
* Historian—Oliver ZS6OG
* Member—Renato ZS6REN Wally ZS6WLY

Visit our website: www.awasa.org.za

Reflections:

As we start this New Year, we bid farewell to Renato who has done an outstanding job these past three years of keeping the AWA ship sailing in the right direction and say welcome to Jacques our new president for the next year.

Jacques is no stranger to the AWA as he was president 2016 to 2017 and was involved in the setting up of the SAIEE and the museum with Richard and a few others. So he has been around the block a few times with us.

Jacques graciously agreed to step up for president again after Renato had served three years instead of the normal two as it seems we are running short on people wanting to be involved in the running of the group.

Most of the past presidents are all still involved in some way or another with the running of the AWA. Rad ZS6RAD of course being our net controller and Technical advisor, Don ZS5DR KZN liaison ; John ZS1WJ WC liaison; Andy ZS3ADY Sec/PRO.

If at all you are interested in the beginnings of the AWA of Southern Africa, you can go to the website where you will find all the information. From a very meagre beginning to over 432 members at present.

From starting our nets on AM and SSB, to now having VHF, HF and Echolink relays, going right around the globe.

We are certainly looking forward to another very successful year, and if the next year is anything like this past year has been, to a substantial growth in numbers as our presence gets felt even further afield.

None of us can give any particular reason for the phenomenal growth we have experienced except for the fact that we are all like minded in the preservation of our amateur heritage. There is obviously a niche in the amateur fraternity where this fits in very well.

Richard F4WCD mentioned the fact that we have never asked for a membership fee from any who belong. Our mission statement says it all "Membership is free and by association". But of course any association needs funds to survive, we have license fees and web accounts whose costs need to be covered and this happens through the generous donations of either cash, or equipment which is moved at flea markets/ boot sales, from our members and also from non-members. We have never been short of funds to cover these basic costs and have a small surplus reflected in our books.

The AWA is not an organisation that is run or owned by any particular group of people, except by every member who participates in the AWA in some way or another. You are here because you want to be here.

All the very best for 2024

Best 73

DE Andy ZS3ADY

Coronal Mass Ejection (CME) Wikipedia

Interactions in the heliosphere

As CMEs propagate through the heliosphere, they may interact with the surrounding solar wind, the interplanetary magnetic field, and other CMEs and celestial bodies.

CMEs can experience aerodynamic drag forces that act to bring them to kinematic equilibrium with the solar wind. As a consequence, CMEs faster than the solar wind tend to slow down whereas CMEs slower than the solar wind tend to speed up until their speed matches that of the solar wind.

How CMEs evolve as they propagate through the heliosphere is poorly understood. Models of their evolution have been proposed that are accurate to some CMEs but not others. Aerodynamic drag and snowplow models assume that ICME evolution is governed by its interactions with the solar wind. Aerodynamic drag alone may be able to account for the evolution of some ICMEs, but not all of them.

Follow a CME as it passes Venus then Earth, and explore how the Sun drives Earth's winds and oceans CMEs typically reach Earth one to five days after leaving the Sun. The strongest deceleration or acceleration occurs close to the Sun, but it can continue even beyond Earth orbit (1 AU), which was observed using measurements at Mars and by the *Ulysses* spacecraft.[22] ICMEs faster than about 500 km/s (310 mi/s) eventually drive a shock wave. This happens when the speed of the ICME in the frame of reference moving with the solar wind is faster than the local fast magnetosonic speed. Such shocks have been observed directly by coronagraphs in the corona, and are related to type II radio bursts. They are thought to form sometimes as low as 2 $R_{\odot}$ (solar radii). They are also closely linked with the acceleration of solar energetic particles.

The Franklin oscillator and Multi Q circuits

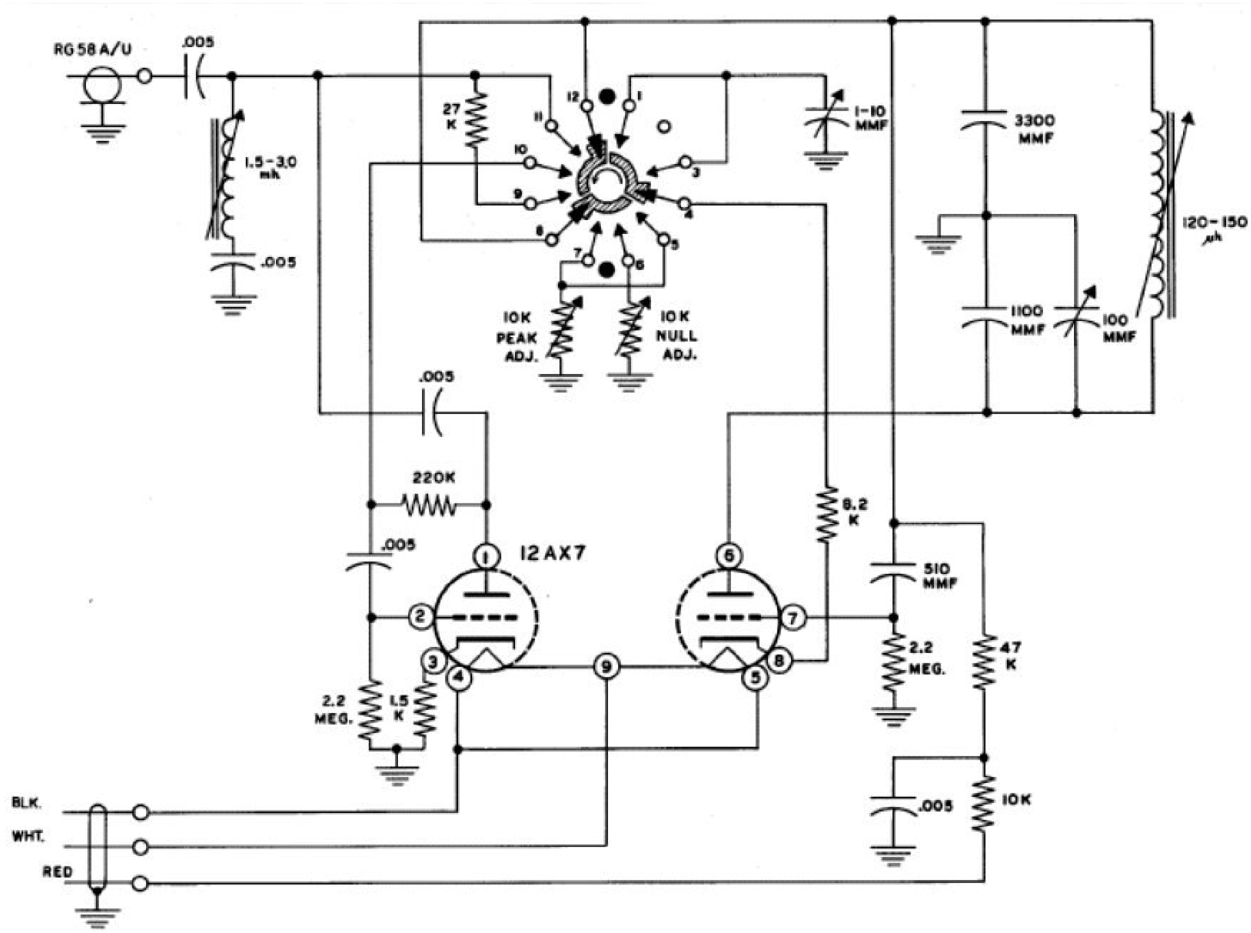
by Daniel Romila VE7LCG

I am aware that in 2023 the analog projects might not be the most modern projects, but they are fun. I invite the reader to follow the information and experiments from this article and to consider it as an invitation to learn/remember about some circuit theory, but also to eventually draw and simulate circuits with just several components, and even to solder or make on the breadboard schematics I propose. It is a fun activity for the brain which keeps us young.

I initially started this article by looking at an old vintage Heatkit QF1 Q multiplier.

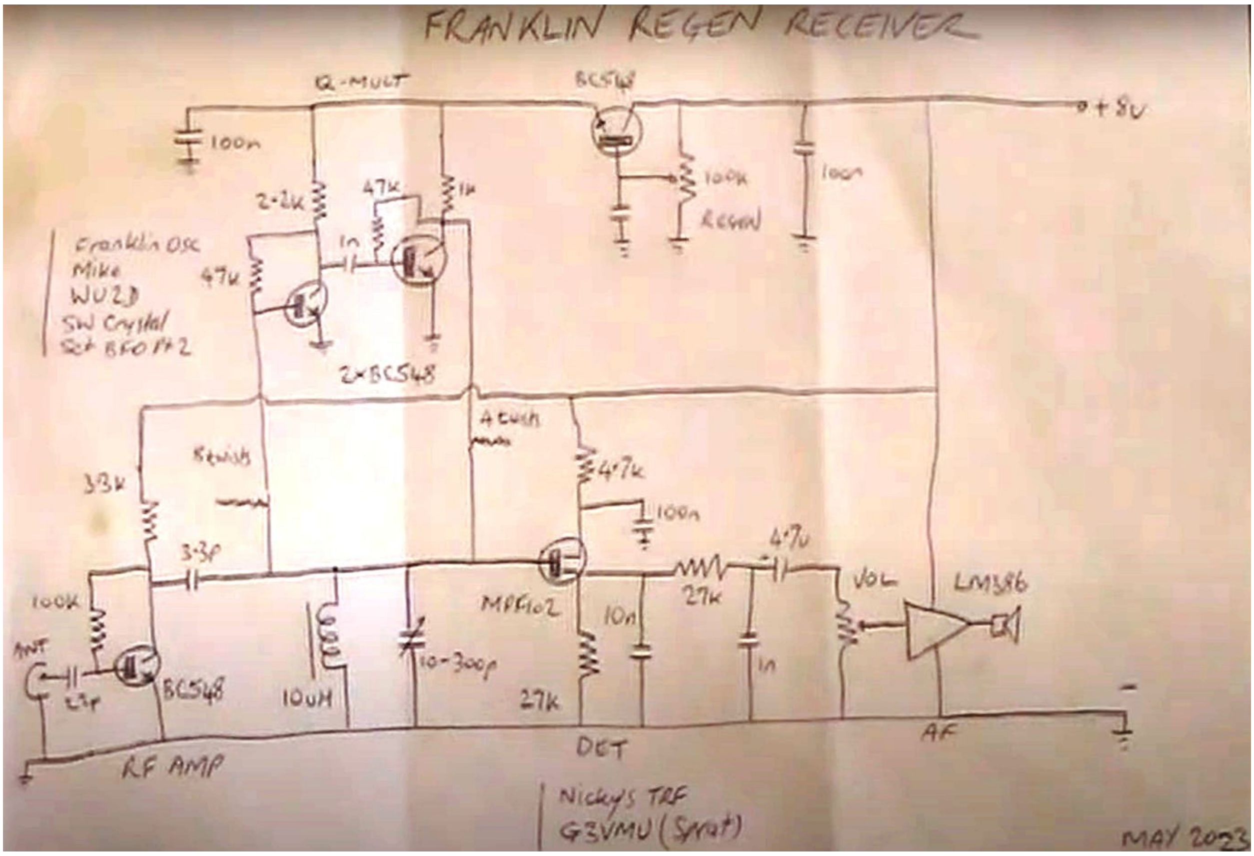
Without going into details, there is a detailed 9 minutes youtube video made by the Canadian Jeff Tranter at: https://www.youtube.com/watch?v=snLgWMX79Kk

I knew already about such circuits and I had my hands-on experience, but this heavy piece of equipment (made in 1950s) is impressive. The schematics of such Heathkit was not exactly something that I wanted to re-make. There are many places on the Internet where one can find the manual and reviews of the Heathkit QF1 Q multiplier. One of the fast easy links, where AF6C (Bob Eckweiler) posted his review: https://www.w6ze.org/Heathkit/Heathkit_024_QF1.pdf



There is another Q Multiplier, made by Heathkit, GD-125, that can be admired in a 12 minutes youtube video at: https://www.youtube.com/watch?v=-CvGoKjJQLM

But, coming back to the title of this article, I wanted to see what interest remained in 2023 about this subject. I am not going so far to recommend actual building and soldering of Q multiplier circuits as an everyday use equipment, but VK3YE did it (May 2023), and based a regenerative receiver on a Q Multiplier simple circuit with a Franklin oscillator. His 32 minutes video is at: https://www.youtube.com/watch?v=8I0xQOIYcas

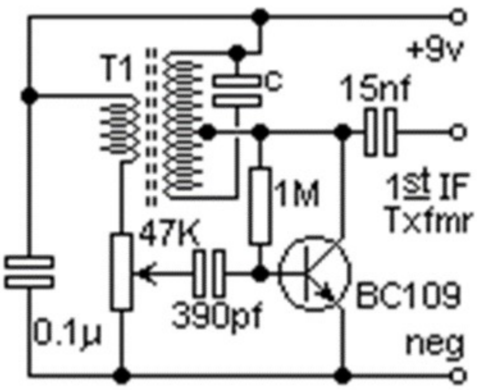


Somebody identifying himself as “Microwave1” also played with the above subject and the results can be seen in a series of 3 X 25 minutes videos at: https://www.youtube.com/watch?v=fRz9i3HFhAU

I underline here an explanation to the above videos: the positive loop is not in the receiver’s path – so one can ask “how is this a regenerative receiver ?” – it is indeed a regenerative Rx because the Multi Q “sucks” everything out except the wanted frequency.

Me, myself, I was happy to just design and simulate on computer various schematics and design a totally different Franklin oscillator than what the above two YouTube content creators did, to remember some definitions and technicalities I knew long time ago and I had hard time to remember in details nowadays. I present shortly in this article the summary of my re-diving into the Multi Q and Franklin oscillator schematics.

In the title, Q refers to the quality factor of a resonant LC circuit. It is possible to increase Q using an external oscillator – and the option for the oscillator is a Franklin type one, for ease of use with an LC circuit already placed inside a receiver and not needing an external LC one. It is also possible to have no electric connection at all with the receiver, but than it is mandatory the Multi Q to contain itself an LC resonator circuit.



Explained in simple words, a Q multiplier circuit sucks everything else than the wanted frequency on which the Multi Q is tuned, and in this way the wanted frequency/signal is improved.

On the left one can see SM0VPO’s proposed implementation, an oscillator (which happens to be Franklin type), which

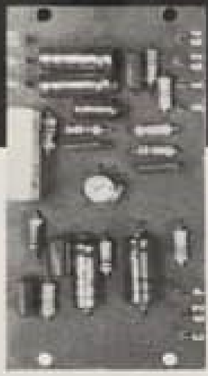
Solid-state Building Blocks

for inexpensive low power transmitting/receiving.

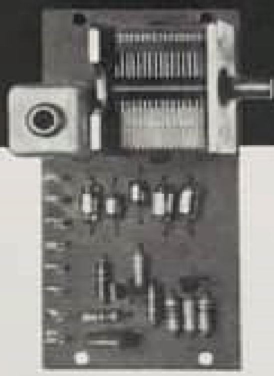
These four modules, MX1, AA1, VO1 and TX1 are completely wired and assembled circuit boards to custom build a 40-80 meter CW transceiver. Use the VO1 for a transmitting and receiving VFO. The MX1 converts signals directly to audio. Crystal provision in the TX1 allows Novice use. AA1 amplifier drives head phones.

MR1, set of four modules, with instructions **$29.95**

MX1—Synchrodyne detector-converter uses dual gate MOSFET for high sensitivity, low noise and effective reduction of overload. Selectivity 2KHz. 2" × 4" circuit board. Power +12 VDC @ 3 ma.



AA1—Integrated circuit audio amplifier has 100 db gain. Response shaped 200-2500 Hz. Output impedance 1000 ohms. Drives high impedance headphones. 2" × 4" circuit board. Power +12 VDC @ 9 ma.



VO1—40-80 meter oscillator-buffer. Drift less than 100 Hz. Output 2 volts R.M.S. Low impedance. Designed for use with MX1 or TX1. 2" × 4" circuit board. Power +12 VDC @ 15 ma.

TX1—Crystal oscillator and power amplifier. Tapped toroidal coils cover 80-40-20 and 15 meters. Final amplifier power input 2 watts. 2" × 4" circuit board. Power +12 VDC @ 250 ma.

$7.95 Each!

POWER-MITE 1 The MX1, AA1, VO1, and TX1 modules are wired into a band-switching 80-40 meter CW transceiver. Front panel controls: On-off, Transmit-Receive, Receiver Resonate, VFO-Crystal, Bandswitches, Oscillator tuning, Final Resonate. A meter is provided to monitor final amplifier current.

PMI $49.95
PM2 (with case) $54.95

AC1—Convenience kit for MR1 modules. Contains amplifier current meter, power switch, antenna switch, knobs and connectors. **$7.95**

AC3—15 meter converter. Converts 21 MHz band to 3.5 MHz. Free running injection oscillator. Dual gate MOSFET. 12 VDC @ 8 ma. **$8.95**

AC4—Low power SWR meter. Usable from ½ watt to 250 watts. **$14.95**

AC5—Low power antenna tuner. Matches random length twin lead or open wire line fed antennas. 10 watts maximum. **$8.95**

AC6—Extend MR1 module group to 20 meter transceive operation with side-tone for all bands. Built-in side-tone volume and frequency adjustable. 12 VDC @ 5 ma. **$7.95**

KR3—Solid state keyer module. Integrated circuit. Complete with speed pot (6-60 wpm) and keying reed relay. 2" × 4" circuit board, use with AC2 monitor. 6 VDC @ 100 ma. **$17.95**

AC2—Keying monitor. Also ideal code practice oscillator drives speaker or phones. 6 VDC @ 50 ma. Use with Model KR3 Keyer. **$5.95**

TEN-TEC, INC.
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See page 110 for New Reader Service

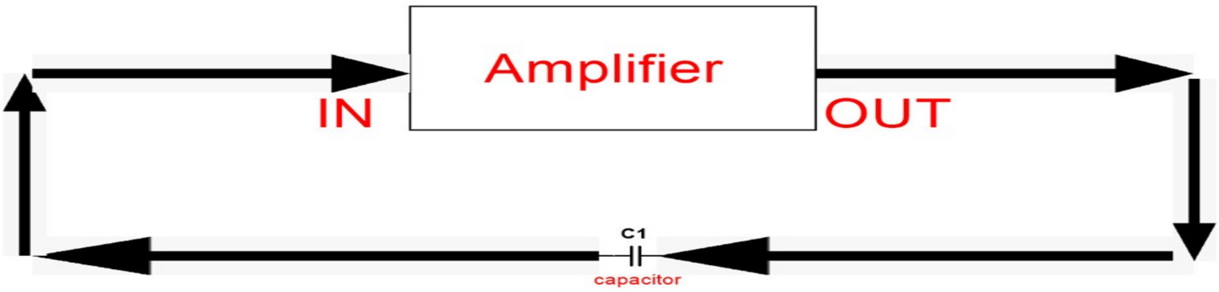
is adjustable to be under, on or above the oscillation point. *"The circuit is basically an oscillator that does not quite oscillate, so when it is connected to the IF HOT end of the first IF transformer it will increase the Q-factor, thereby reducing the IF bandwidth considerably. It does this by cancelling the losses in the 1st IF transformer using gain from an additional transistor circuit* (from http://sm0vpo.altervista.org/use/qmult.htm Harry Lythall, SM0VPO)".

From Wikipedia: *"In electronics, a Q multiplier is a circuit added to a radio receiver to improve its selectivity and sensitivity. It is a regenerative amplifier adjusted to provide positive feedback within the receiver. This has the effect of narrowing the receiver's bandwidth, as if the Q factor of its tuned circuits had been increased. The Q multiplier was a common accessory in shortwave receivers of the vacuum tube era as either a factory installation or an add-on device. In use, the Q multiplier had to be adjusted to a point just short of oscillation to provide maximum sensitivity and rejection of interfering signals.*

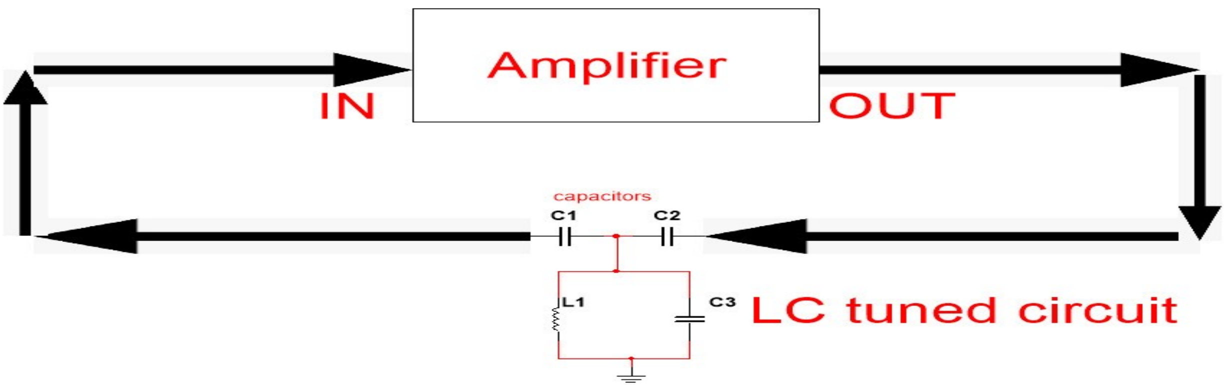
A Q multiplier could also be adjusted to act as a notch filter, useful for reducing the interfering effect of signals on frequencies near to the desired signal. In some receiver designs, the Q multiplier was made to also serve as a beat frequency oscillator by adjusting it to oscillate. This could be used for reception of single sideband or Morse radiotelegraphy, but in that case the circuit no longer provided improved selectivity.

The principle of regeneration applied to radio receivers was developed by Edwin Armstrong, who patented a regenerative receiver in 1914. At least one console-model broadcast superheterodyne receiver used positive feedback to improve selectivity in a 1926 design. Q-multipliers were common on shortwave general-coverage and communications receivers of the 1950s. With the advent of crystal and ceramic intermediate frequency filters, the Q-multiplier was no longer popular."

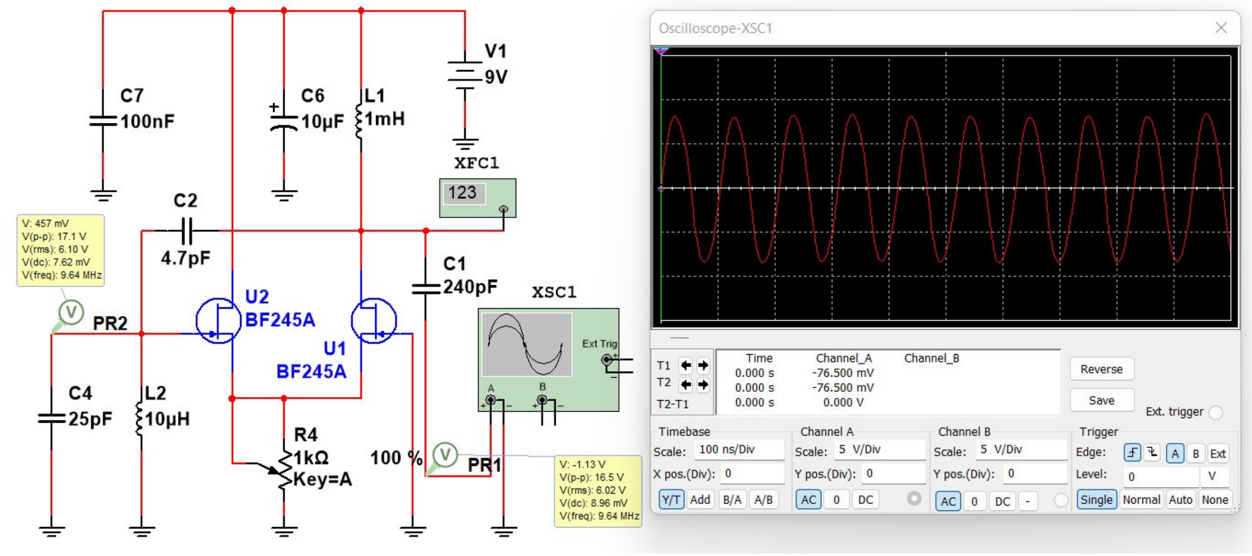
If one has an amplifier and connects with a capacitor the input with the output, he/she obtains an oscillator, if the IN and OUT are in phase and generate a positive reaction.



On which frequency will it oscillate? Most probably it will oscillate all over, so it is not very useful for radio amateur purposes. The best would be to have a method to "drain"/ "suck" all frequencies out of the positive loop IN-OUT except one frequency that we want. The following modified circuit I drew does exactly this:



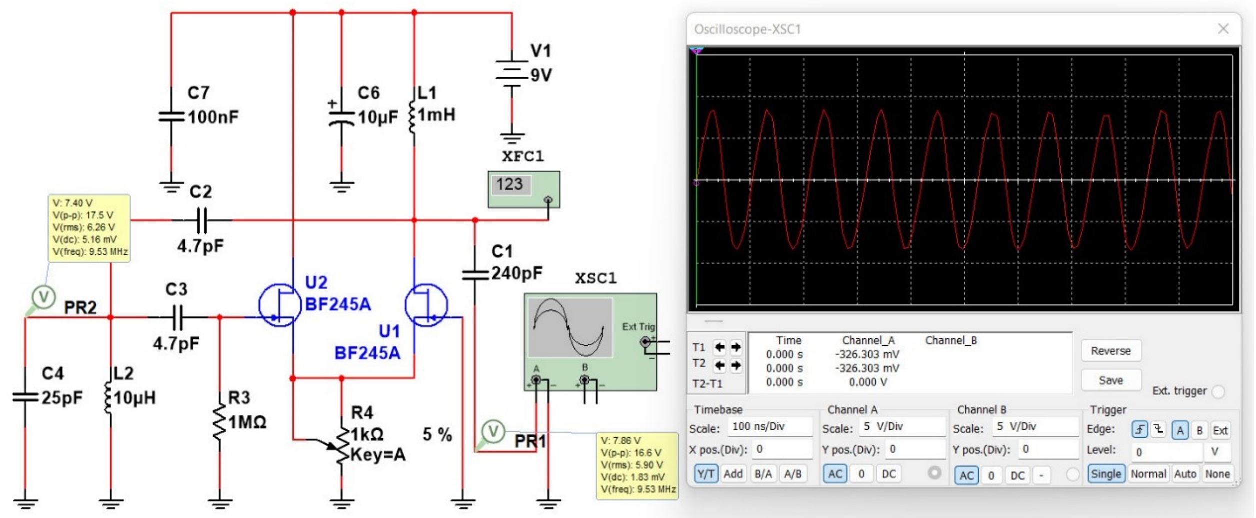
I tried several Franklyn oscillators on computer simulations. All of them worked, all of them are stable and with signal generated in the Volts range. I mostly like and played with my own Franklin oscillator adaptation:



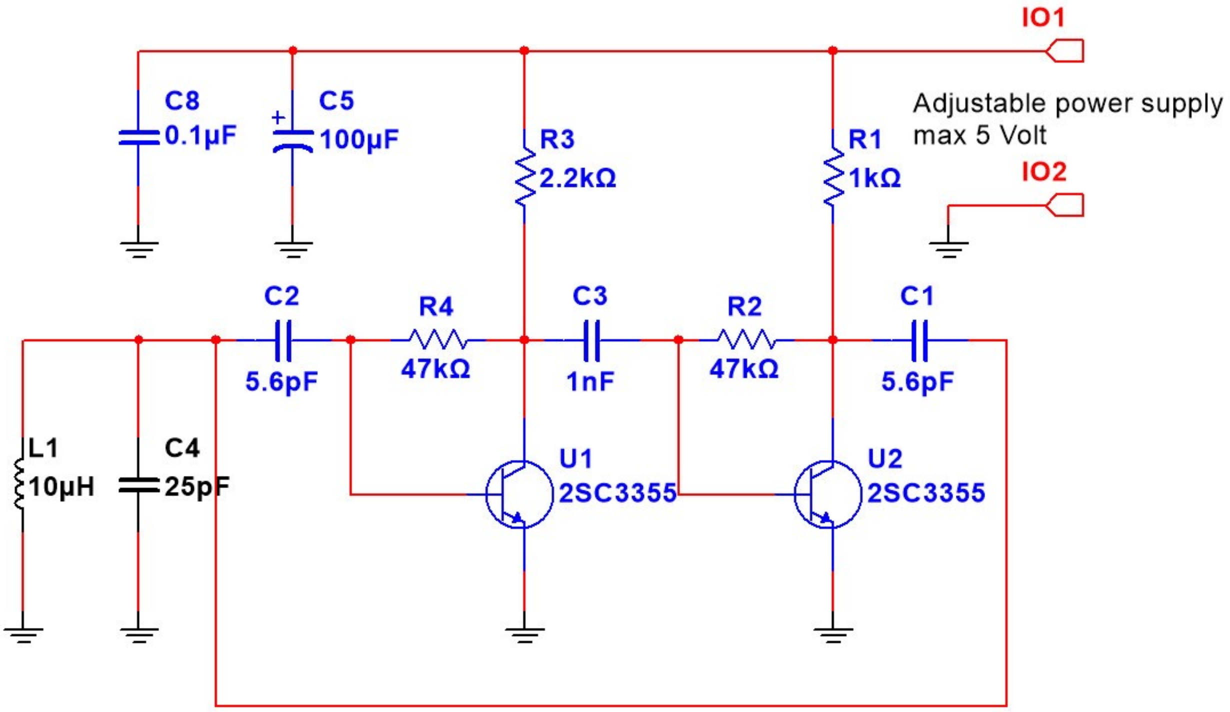
The grid of the left JFET transistor is connected in a positive loop with the drain of the right JFET through C2. I used a small value capacitor, just 4.7 pF. The frequency of the oscillation is dictated by L2 C4. Only the resonant frequency of L2 C4 is not short-circuited to the ground.

<u>Note:</u> If you try the above schematics on the breadboard, it might not work. The parasite capacity of the breadboard might take out of oscillation the circuit, by entering in competition with C2 which is only 4.7 pF. It should work on any breadboard even with the values from the schematic, but one can safely increase C2 to 68 pF, in order to compensate the loses due to the unwanted big capacity of the breadboard. The strongest oscillation is obtained when the sources of the two JFET transistors are connected together, and with a 1 kOhm (the maximum value of the R4 potentiometer) to the ground. Those are just computer simulations, and practical done schematics always require playing with the right amount of positive feedback.

A version of the above schematic has the grid of the left FET transistor connected to the ground through a high value resistor. The resonant circuit C4L2 is isolated in DC from the oscillator itself with two capacitors of 4.7 pF capacity (C2 and C3). In this way it is possible not to have at all a new LC resonant circuit for the Franklin oscillator/Multi Q, but to use the LC already existent in the receiver and just connect to it through the two capacitors (C2 and C3). The multi Q effect is adjusted with R4 (1 KOhm).



As with any positive reaction experiment, if done practically, the schematic should be adjusted for the positive loop feedback (oscillation threshold) with R4 and eventually by increasing C2 and C3 from 4.7 pF to 22-68 pF.
Since the two mentioned (at the beginning of the article) youtube video content creators used the same Franklin oscillator, but none of them drew the schematics in a nice computer program, here is the Franklin oscillator with two BJTs used by them:



The same note for this Franklin oscillator as for the JFET one: in order to put it in function one needs to play with the positive feedback. Your built will have different parasitic capacities, so do not expect to immediately replicate what the two youtube content creators did. You will need to adjust the values of C1 and C2.

An interesting schematic, praised on the Internet as a good Franklin oscillator is made with two JFET transistors. It resembles very much a multivibrator, and when I simulated the schematic, I could see on the virtual oscilloscope the generated signal is more rectangular than sine.
I hope this short article reminded you of past fun experience with Q multiplier circuits, in which the Franklin oscillator was the main part. If you are not old enough, this material might look like something new, but it is not.

I made in the last years several regenerative receivers. I tried several amplifiers with some regeneration (aka Multi Q) and my conclusion is every single time to let the past in the past. It is not something to use today. One can build it, have fun several hours with it, and let it in a drawer, or just as a demo for radio amateur colleagues. I was not capable to replicate in the recent years the joy I had in the past with regenerative receivers and Multi Q. This is why I did not make this article longer and I did not insist on the Multy Q aspect, but on the Franklin oscillator. All my schematics work, and were much improved in comparison with what I did many, many years ago. But all the joy went away when I connected a several dollars SDR dongle and received the same station as with the regenerative receiver. Using Multi Q circuits and – in general – any kind of regenerative receivers require a lot of patience, adjusting, re-adjusting and so on, for every single station.

Vintage equipment is a pleasure in itself, in its own category, and making comparison with new modern equipment is just “an angle”.

Non-Destructive Transistor Tester
March 1971 Popular Electronics

In the days before just about every multimeter had a built-in diode and transistor tester, there was not much - if anything - available for the hobbyist. Some of the vacuum tube test sets, like my 1961 vintage B&K Dyna-Quik Model 650, surprisingly included diode and transistor test sockets. This article for a "non-destructive" type - as opposed to the popular "destructive" type - homebuilt transistor tester appeared in a 1971 issue of Popular Electronics magazine. It can identify PNP vs. NPN, measure DC gain, and measure leakage current. The tester will verify diode integrity as well. There's also a bonus "Parts Talk" comic on the page at no extra cost.

Check or Match Transistors and Diodes

By John L. Keith

Buying surplus or bargain-package transistors is a little like buying a pig in a poke. Especially if you get one of those so-called "computer boards" to which several transistors, usually unmarked, are connected. You may get some real high-quality, expensive units - some others may be completely useless. For the most part, the transistors that are in operating condition can be put to good use by the experimenter, provided he can sort them out as to type and identify their parameters, This can be done of course with a good transistor checker but not everyone has one of those so the simple transistor tester described here comes in very handy and saves time and money.

The transistor tester can be used to check either NPN or PNP transistors and will measure leakage down to 10 μA and collector current to 10 mA. You can measure I_{CO}, I_C (with 20 or 100 μA of base current), I_{CEO}, I_{CES}, and I_{EO} (see sidebar for definitions). Diodes can also be checked by connecting them between the collector and emitter pins of the test socket. The tester is also useful for checking two transistors that must be matched for a specific application.

The tester has been designed so that it will check almost any type of transistor and cannot harm a unit regardless of the switch positions or the way the transistor is connected to the test socket.

Construction. As shown in the photographs, the prototype was built in a conventional plastic utility box with all components except the batteries mounted on the cover and with point-to-point wiring. The circuit is shown in Fig. 1.

The internal resistance of the meter movement is an integral part of the circuit. The combined resistance of the meter, R5, and R4 must be 12,000 ohms. The value of R4 must be chosen to obtain this value as closely as possible. With the meter specified in the Parts List, R4 should be about 11,000 ohms, This insures full compression and, with the circuit of D1 and R6, provides a full-scale reading of 10mA.

Operation. Insert the transistor to be tested in the test socket, place S1 on either I_{C1} or I_{C2}, and depress pushbutton switch S3. The meter should deflect upscale when S2 is in the proper position. The position of the switch for upscale deflection determines whether the transistor is NPN or PNP.

To check the DC gain (H_{FE}) of the transistor, place S1 on either I_{C1} or I_{C2}, depress S3, and note the meter indication. Then determine the gain from the conversion table. Note that position I_{C1} is for a base current of 20 μA while position I_{C2} supplies a base current of 100 μA. The gain is different for the different base currents. The other four positions of S1 are to test for leakage currents. Obviously, the less leakage in any case, the better. In these tests, the meter indicates directly in microamperes.

To check a diode, connect it between the emitter and collector pins of the test socket and place S1 in either the I_{C1} or I_{C2} position. Depress S3 and note the meter readings when S2 is in the NPN and PNP positions. Ideally, in one position, the meter should indicate full scale and it should give no indication in the other position-indicating that the diode conducts in one direction and not the other. The lower the ratio between the two readings, the poorer the diode.

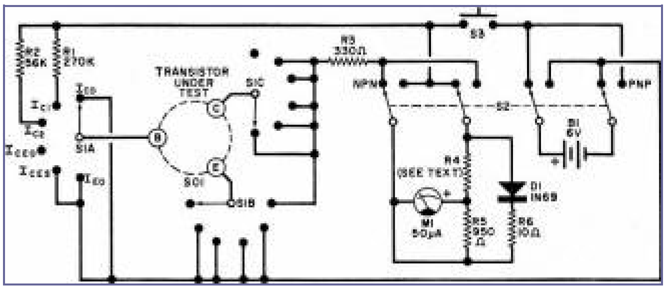
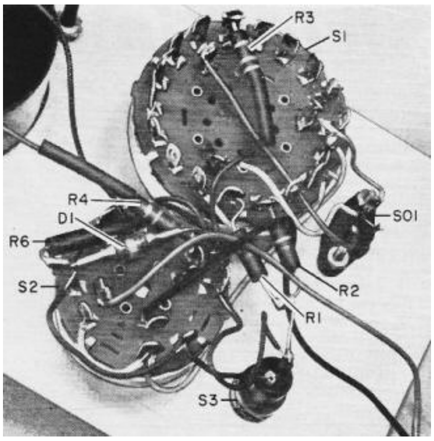


Fig. 1 - All major transistor parameters can be checked using this tester since the novel circuit enables measurements from a low of 10 microamperes to high of 10 milliamperes.

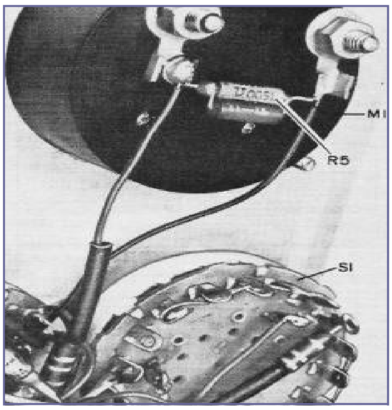
PARTS LIST

B1—6-volt battery (4 flashlight cells)
D1—1N69 diode
M1—50-μA meter (Calector D1-910 or similar)
R1—270,000-ohm, ½-watt resistor
R2—56,000-ohm, ½-watt resistor
R3—330-ohm, ½-watt resistor
R4—See text
R5—950-ohm, ½-watt resistor
R6—10-ohm, ½-watt resistor
S1—Three-pole, six-position rotary switch
S2—Four-pole, two-position rotary switch (Calectro E2-167 or similar)
S3—Spst, normally open pushbutton switch (Calectro E2-140 or similar)
SO1—Transistor socket
Misc.—Suitable cabinet with cover (Calectro J4-726), knobs (2), battery holder, mounting hardware, wire, solder, etc.

Parts List



All the components except the battery are mounted on the front panel. The small parts such as resistors. capacitors and diodes are soldered directly to the two switches.



Two resistors in parallel are used to make up the meter shunt resistor (R5) in order to obtain the required resistance value. Here again the components are mounted directly on the meter terminals.

Parameter Definitions

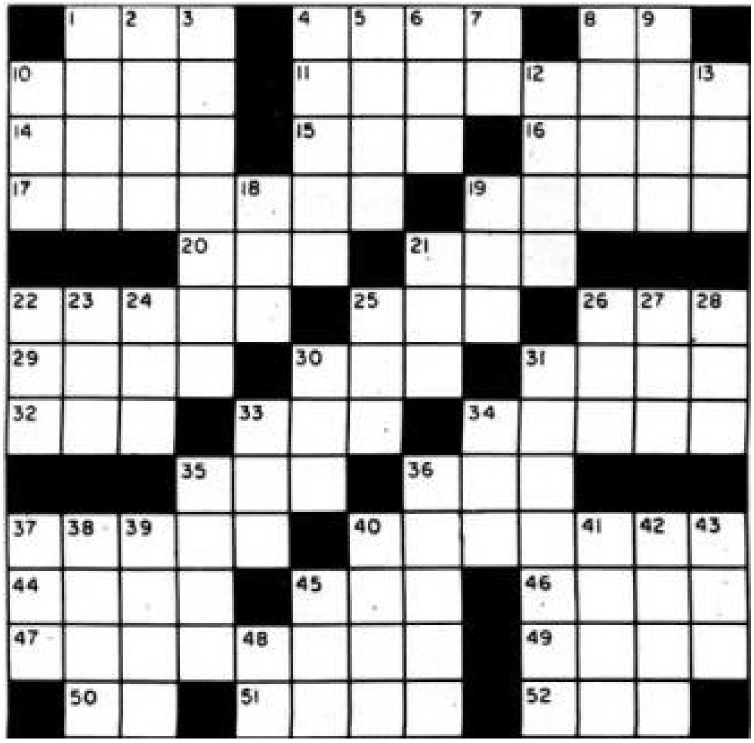
I_{CEO} - Collector current with base open. The polarity of the applied voltage is such that the collector-base junction is biased in a reverse direction.

I_{CES} - Collector leakage current with base shorted to emitter. Equivalent to the leakage current of collector diode if emitter junction were not present. The polarity of the applied voltage is such that the collector-base junction is biased in a reverse direction.

I_{EO} - Sometimes called I_{EBO}. Emitter-base current with collector open. The polarity of the applied voltage is such that the emitter-base junction is biased in the reverse direction.

I_{CO} - Sometimes called I_{CBO}. Collector-base current with emitter open. The polarity of the applied voltage is such that the collector-base junction is biased in the reverse direction.

I_C - Collector current - depends on the amount of base current supplied. A measure of DC gain (H_{FE}).



Across

1. Decay.
4. Jezebel's husband.
8. Type of current (abbr.).
10. Strong wind.
11. Commonly, the stage or circuit in a radio set that demodulates the r.f. signal into its audio or video component.
14. Dill seed.
15. Part of "to be."
16. Ore deposit.
17. " _____ tube," special CRT.
19. Made to occur at or during a set period.
20. Poem.
21." ________ switch," a multi-contact switch, usually rotary.
22. Component having two electrodes; one a cathode and the other a plate or anode.
25. Atom or molecule which has fewer or more electrons than normal.
26. Possessive pronoun.
29. Sea eagle.
30. "Swinging _," a type of mounting and feed used to move cutting head at uniform rate across the recording disc in some sound recorders.
31. "____troposphere"; that portion of the atmosphere located about 40-60 miles above earth's surface.
32. Very small.
33. Noah's boat.
34. Finished.
35. Tube circuit in color-TV receivers which keeps both frequency and phase of 3.58-mc. color oscillator synchronized with burst signal (abbr.).
36. Quantity (abbr.).
37. Fall into disuse.
40. Electron gun in three-gun color CRT which provide beam striking the blue-emitting phosphor dots of screen mosaic (two words).
44. On the sheltered side.
45. Delay in the recording or display of any device with respect to the conditions being measured or reproduced.
46. Not any.
47. Type of curve formed by intersection of cone and plane; the plane being parallel to edge of cone.
49. Any point, line, or surface in stationary-wave system at which amplitude of wave-shaping variable is zero.
50. City map abbreviation.
51. Coil assembly used to produce electromagnetic deflection of electron beam in CRT television tube.
52. Fuss.

Down

1. Rave.
2. Substitute for "the more expensive spread."
3. Four-electrode vacuum tube.
4. Metaphorical saying.
5. In this place.
6. Consumed.
7. Is.
8. Smallest unit of any chemical element.
9. One type of communication.
10. Substance with a boiling point below normal ambient temperatures and pressures.
12. Small, spring-type clamp.
13. "Hot-line" color.
18. Fruit drink.
19. Light brown.
21. Male cat.
22. Night moisture.
23. Former name of the industry's engineering society (abbr.).
24. Single unit.
25. Anger.
26. Antiquated.
27. American Indian.
28. Round metal bar.
30. Intense luminous discharge between electrodes and conductors.
31. Aerial.
33. Mimic.
34. Australian bird.
35. Perplexed.
36. Seaweed.
37."Over _________ ," the amount by which effective height of scanning facsimile spot exceeds nominal width of scanning line.
38. Exclamation of sorrow.
39. Saucily free and forward.
40. Stop short and refuse to go.
41. Righteous.
42. Reverse.
43. Born.
45. Old card game.
48. Near.

Antique Wireless Association of Southern Africa

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Mission Statement

Our aim is to facilitate, generate and maintain an interest in the location, acquisition, repair and use of yester-days radio's and associated equip-ment. To encourage all like minded amateurs to do the same thus ensur-ing the maintenance and preservation of our amateur heritage.

Membership of this group is free and by association. Join by logging in to our website.

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Notices:

Net Times and Frequencies (SAST):

Saturday 07:00 (05:00 UTC) —Western Cape SSB Net —7.140; Every afternoon during the week from 17:00—7.140
Saturday 08:30 (06:30 UTC)— National SSB Net— 7.125;
Sandton repeater 145.700
Echolink—ZS0AWA-L
Kempton Park Repeater—145.6625
Relay on 10.125 and 14.135 (Try all and see what suits you)
Saturday 14:00 (12:00 UTC)— CW Net—7025; 14:20 10.115

AWASA Telegram group:

Should you want to get on the AWA Telegram group where a lot of technical discussion takes place, send a message to Andy ZS3ADY asking to be placed on the group. This is a no-Nonsense group, only for AWA business. You must download the Telegram App first. …..+27824484368