Merry Christmas to all our HRSASA members and families

"HIS MASTER'S VOICE"

The Hallmark of Quality

Historical Radio Society of Australia Inc. – S.A. Group

Web Site: www.hrsasa.asn.au
All correspondence should be addressed to the Secretary, HRSA-SA Group, 2-13 Chester Street, Glenelg South, S.A. 5045.

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Planned Meetings for the Remainder of the Year:

Sunday 29th January 2023
1:00pm to 3:30pm
SALE DAY
This is NOT an Auction but an opportunity to bring items and sell them yourself at prices that YOU decide.
Book a table ASAP with the Secretary.

(**NOTE:** A fee of $10.00 per table for sellers will apply.)
To be held at
St. Cyprian's Church Hall
70 Melbourne Street, North Adelaide, SA, 5007

Wanted to Buy, Sell or Exchange

Are you looking for a hard-to-get part? A strange knob, or a replacement coil? Have an item that you'd like to sell? Why not place a free, classified advertisement on our website? Go to the TRADING POST page of our website at: https://hrsasa.asn.au/page-16/ and have a look at what's on offer right now and help a fellow member. It changes frequently. *Why not make use of this resource yourself?*

You could also place a free classified advertisement in the "yellow pages" section of our National HRSA Magazine "Radio Waves" and reach an Australia-wide audience. Just contact the Editor, Ian Batty on 0402 736 527 or send it in by email to: ianbatty311@gmail.com

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President's "Banter"!

From our President, Graham Dicker.

Graham Dicker – President's monthly stories from the past (and other ramblings)

Firstly, happy Xmas from the entire HRSASA committee and what an interesting year full of events we have had and really looking forward to a new year and what it brings.

This month, a light-hearted story (or three) from my past days as a Microsoft Engineer working for clients. These stories all happened in a medium size real estate office run by a well accomplished manager of many years, well known in the international circles.

So - this month, a little extra holiday reading.

But before we start…. - Once upon a time back in the 80's I used to run a small Adelaide company called kits-R-us (I still own the name). Every month I would produce a new kit for sale many were model train related, having just uncovered a pile of manuals from 40 years ago during a clean out, I thought they may bring some interest to HRSASA members in our monthly newsletter as projects. As we are looking at an amplifier building competition next year, many are audio related, and may spur on some interest. Look at one such project following these 3 short-stories!

Story number 1, "A mouse with a ghost !!!!!"

Back in the 80's Microsoft released a new product. A pack with a keyboard and a wireless mouse. The USB dongle was plugged into a spare USB port and a driver loaded and hey presto, it all worked wirelessly using Bluetooth.

Now as it turned out the office manager hated wires and cables everywhere, so this was an easy sell to re-equip the entire office with these wireless marvels. About 6 of these were installed and all running OK much to the approval of these marvels of technology. However, about 4 weeks later, I received a support call from Francis, the Conveyancer in the building who reported that his mouse was randomly clicking on programs without any intervention from him whatsoever! The thought was that there may be a virus, or a hacker, or worse a GHOST in his machine!! Despite the usual troubleshooting and finding no fault, I was about to leave the building when sure enough the mouse started doing its own thing. After many hours trying to find out

what was going on I discovered when one of the staff left for lunch the problem disappeared. Eventually I joined the dots and realised when the other staff member moved her mouse it did also on Francis' machine. Back then not published was the fact that the wireless mice and keyboards only supported 4 pairs of channels so the max number of mice/keyboards in a building was therefore 4. By moving around similar paired sets I was able to place those on the same channels far enough apart to resolve the problem.

Story number 2,   "But it's wireless"

Same client, but this time the office managers computer: An intelligent, well-educated person lodged a call about her mouse randomly not working, it was an IR type, not-visible red led type, and if she bashed it on her desk taking out much frustration it would then continue working for an hour or two. Initial thoughts were that it had a dry joint in it, but on checking, I discovered that the batteries were flat and that the desk banging must have improved the battery contact long enough for a few more clicks. Changing the batteries solved the problem. On showing this to the manager, her reply was that she didn't know it had batteries - she thought it was wireless!!!!!

Story number 3: "It won't stop beeping"

Same customer, different employee who called me on a stinking hot summer afternoon saying her computer was not working and "that it keeps beeping all the time." On further investigation on the phone, I asked if anything had happened earlier that day, with a reply that Yes! There was a big bang, and a heap of smoke came out of the back of her computer. I immediately suggested she unplug the power cable, but the beeping continued. "Beep beep beep beep". It was driving her absolutely nuts. I turned up on site to find not only was the computer unplugged as requested, but nothing had power on it around her desk. On further asking the usual questions, it turned out that they were making coffee earlier that day and the kettle tripped the breakers. Looking at the kettle, it was still plugged in, but as soon as I tried to turn it on, the breakers tripped. Unplugging the kettle and binning it, the breakers now stayed in, but the infernal "beep beep beep beep" continued even with everything unplugged! Then, I sat in her seat, whereby I discovered the smoke alarm above her desk was going troppo. Unplugging it from its internal battery restored everyone's sanity. Remarkably, the thing continued to beep for hours until the battery was almost dead now just a "chirp chirp chirp".

The project of the month – The Electronic Stethoscope

This is from my vault of "kits are us" projects. It's called the "Electronic Stethoscope" which used an LM380 map and a discrete transistor AGC mic preamp from an old Elector magazine. About 10 of these kits were sold in the day, but a great little project worth sharing. The AGC amp works well, and a stereo version could be a great addition to a stereo system with a modern TV to level out all of the audio now all over the place.
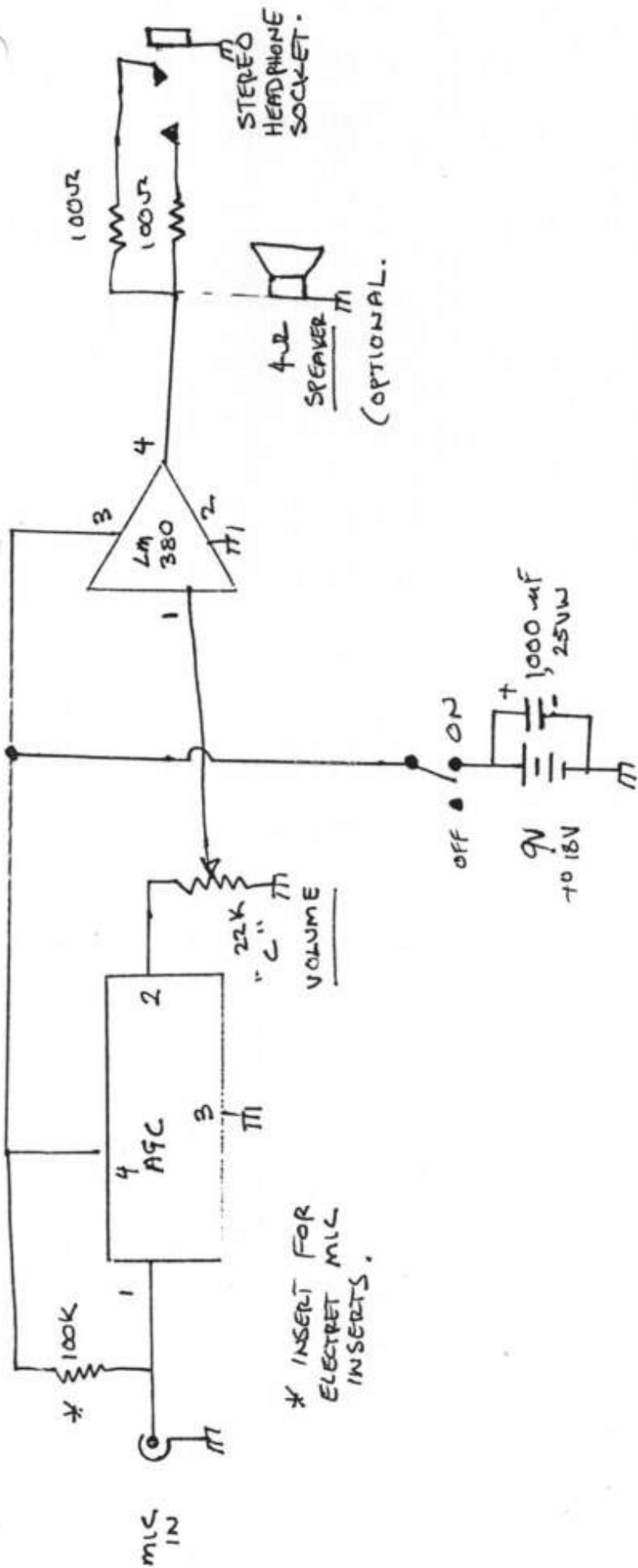

Electronic Stethoscope Plans

The electronic stethoscope consists of a high-gain transistor preamp with inbuilt AGC (automatic gain control) to even out the differences in microphone levels. This also prevents one going deaf when the dynamic range of input signals exceeds the available headroom of the amplifier. The preamp is followed by a gain-control to set a comfortable volume level in the speaker or headphones. The power amplifier stage for this unit is based on the National Semiconductor LM380 IC which will operate from a single 216 type 9 Volt battery and will operate up to 18 volts (with 2 x 216 batteries) to provide greater power output. For stable operation the power supply leads to the AGC and the LM380 boards should not be greater than six inches in length, and it is suggested that the boards be mounted in a metal box for shielding. Dick Smith catalogue #H2201 is recommended.

The PCB layouts are to two scales: The AGC amplifier is a full-size layout whereas the LM380 board is twice full size and needs to be scaled down for production. A full set of negatives is available for $12 (produced as negative on clear film) the correct size ready for board manufacture.

Two 2 input circuits are shown, one for a conventional dynamic microphone, and the second for an electret type in insert.

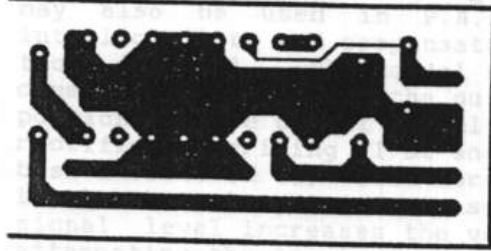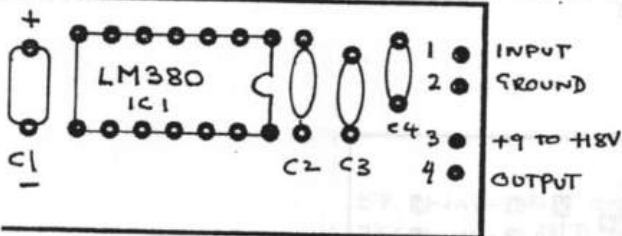*See Inter-board Schematic on the next page:*

INTER- BOARD SCHEMATIC.

STEREO HEADPHONE SOCKET.

100Ω
100Ω

LM 380

4Ω SPEAKER (OPTIONAL.

AGC

22k "C" VOLUME

1000 µF 25VW

OFF • • ON

9V - 18V

100k

MIC

✱ INSERT FOR ELECTRET MIC INSERTS.

```
2X artwork          1 Jan 1980    00:06:42
.m380.pcb
/1.2 r3 holes:      22          solder side
ipproximate size:    0.55 by  1.35 inches
```



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:X artwork           1 Jan 1980    00:06:42
m380.pcb
1.2 r3 holes:       22          pad master
pproximate size:    0.55 by  1.35 inches
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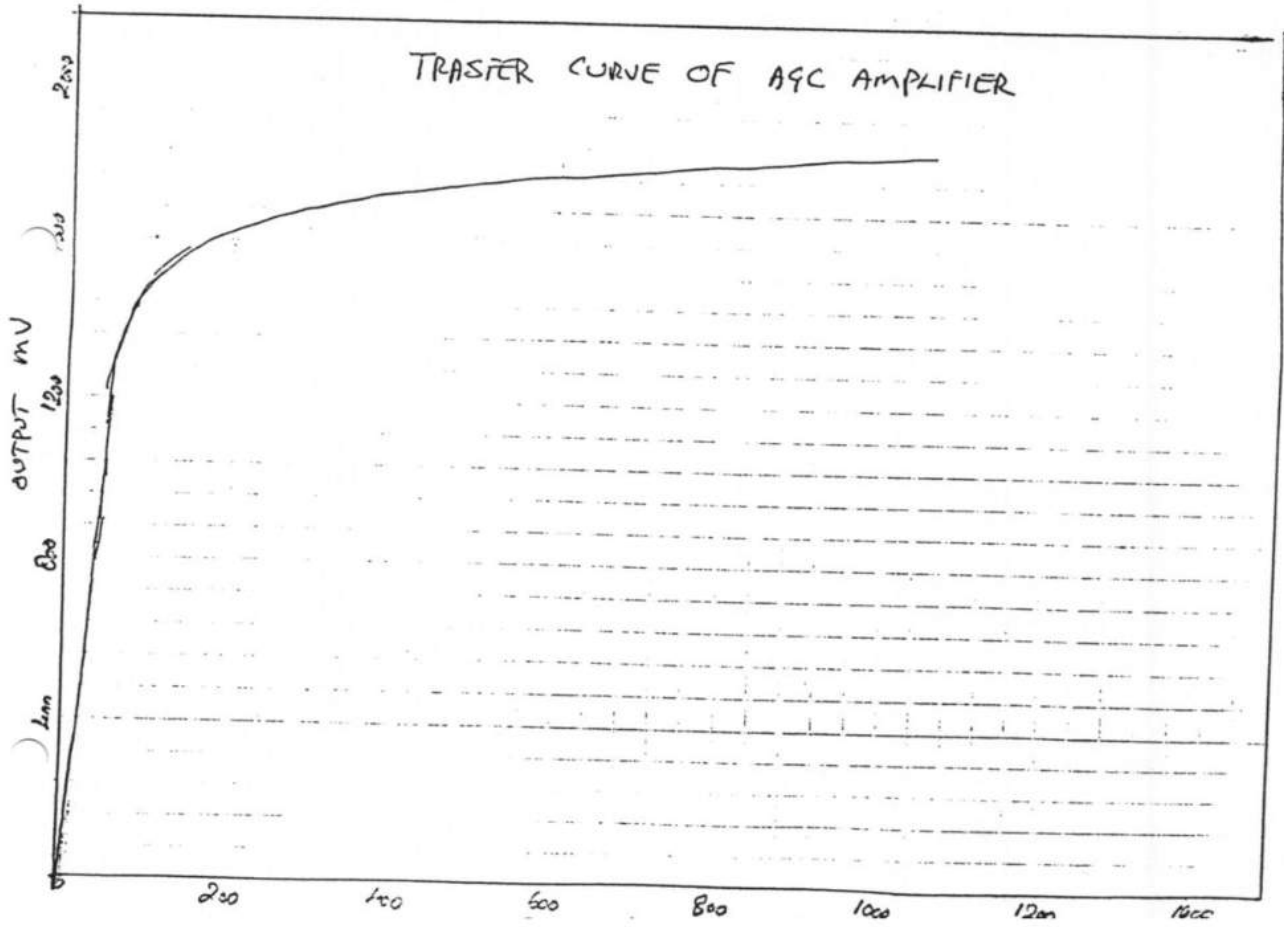

LM380
ICI

C1
-

C2 C3

C4

1 ● INPUT
2 ● GROUND
3 ● +9 TO +18V
4 ● OUTPUT

PARTS LIST

C1 — 470uF ELECTROLYTIC 16VW
C2, C3 — .1uF 50VW CHIP CAPACI?
C4, — .001uF 50VW GREENCAP.
IC1 — LM380 IC

INPUT

C3 .1

+VCC

2

Lm
380
ICI

8

C1
+|(–

470
uF
10VW.

OUTPUT
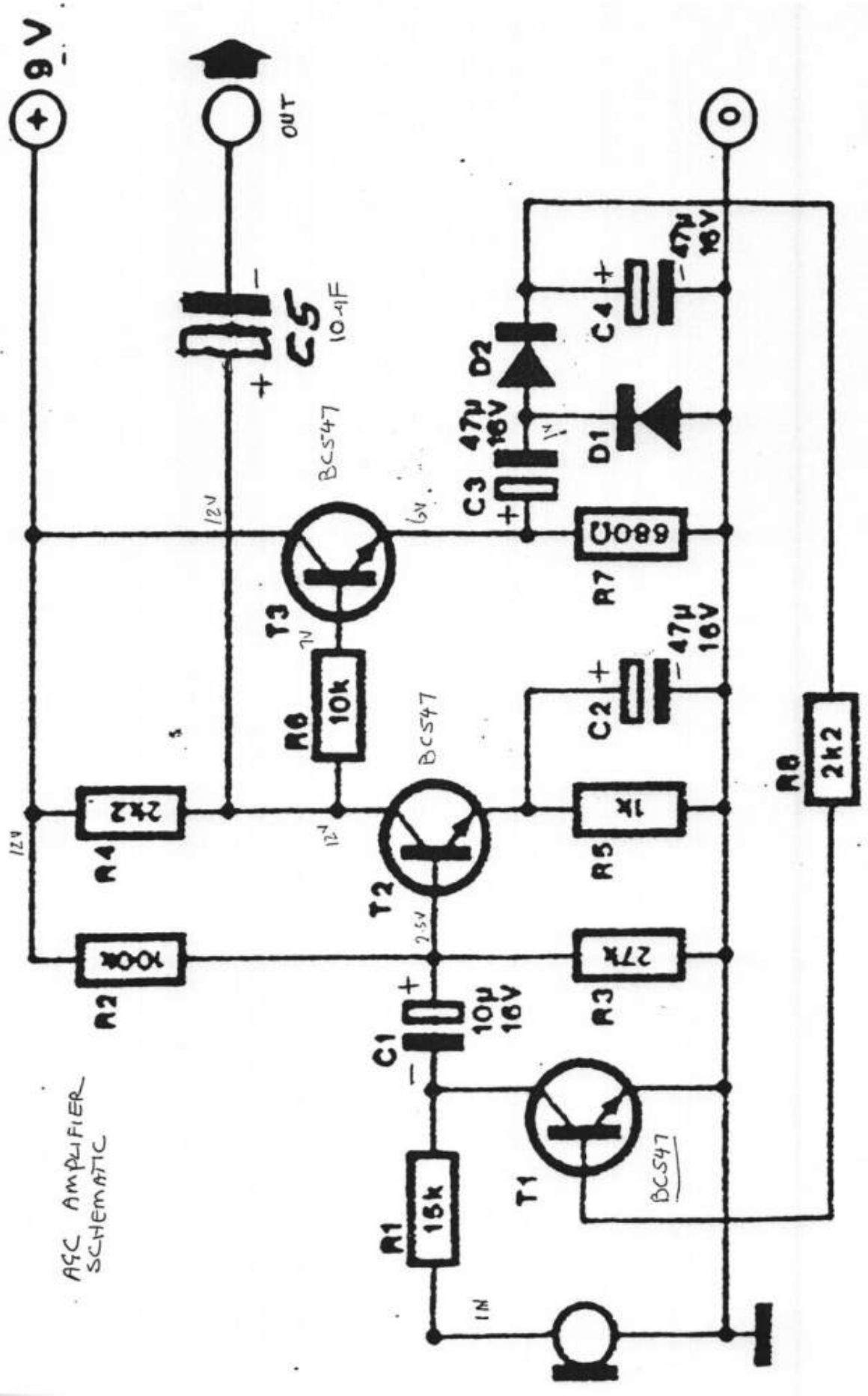RL 4Ω

.001
C4

.1

C2

3,4,5,7
10,11,12
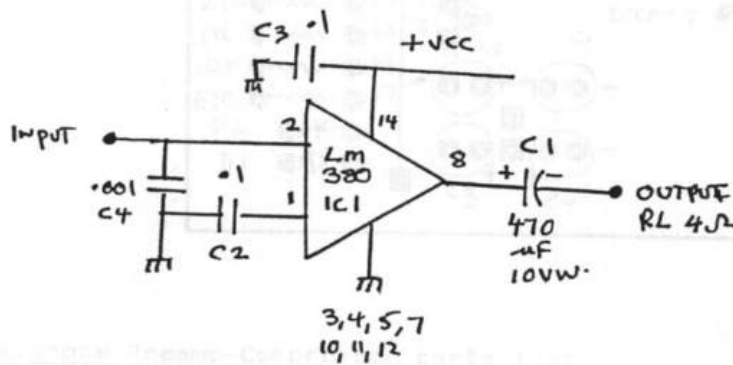
AGC and Microphone Pre-Amp

This microphone preamplifier incorporates automatic gain control which keeps the output level fairly constant over a wide range of input levels. The circuit is especially suitable for driving the modulator of a radio transmitter and allows a high average modulation index to be achieved. It may also be used in PA systems and intercoms to provide greater intelligibility and compensate for variations between speakers (the users of those devices). The actual signal amplifier stage is T2, which operates in common emitter mode, the output signal being taken from its collector. A portion of the output signal is fed through emitter follower T3 to a peak rectifier composing of D1/D2 and C4. The voltage on C4 is used to control the base current of T1, which forms part of the input attenuator. At low signal levels the voltage on C4 is small and T1 draws little current. As the signal level increases the voltage on C4 rises and T1 turns on more, thus attenuating the input signal. The net result is that as the input signal increases it is subject to greater and greater degree of attenuation and the output signal therefore remains fairly constant for a wide range of

input levels. The circuit is suitable for signals with a peak input level of up to 1 volt. The microphone may be replaced by a small loudspeaker for intercom use.

Microphone Pre-Amp Compressor Parts List

T1, T2, T3	BC547 Transistors		
R1	15K	R6	10K
R2	100K	R7	680 ohm
R3	27K	D1, D2	1N914 Diodes
R4, R8	2.2K	C1, C5	10uF x 25vw Electrolytic
R5	1K	C2, C3, C4	47uF x 25vw Electrolytic

TRASFER CURVE OF AGC AMPLIFIER

See next page for full Schematic diagram for the AGC Amplifier

AGC AMPLIFIER SCHEMATIC

Secretary's Report:

Ian Smyth

IN MEMORIUM:

A couple of weeks ago, we were informed of the passing away of Ray McCabe. Ray has been a regular buyer and seller at our HRSASA Auctions over the years. He lived out near Gawler and was a regular face at the Gawler Markets too. He was an amazing collector of all sorts of things.

Ray was born in Montrose, Scotland and came to Australia in the 1970's. He was a quiet, shy man but a recent highlight was a Glider ride – a 74th birthday present from his granddaughter! Ray had a terrible fear of heights, but he loved it!

Ray's extensive radio collection is being gathered and some items will be sold privately to raise money for the family. A special Auction will be held to dispose of the remainder and HRSASA members will be invited.

Component Corner

Many new members are probably wondering where to obtain components and valves. The following is a list in order of preference:

HRSA-SA Group Shop: We are working towards a publishable catalogue. Contact our Shopkeeper, Rob Olding on 0422-096-341 to enquire, or place an order. Rob's email address is: shop@hrsasa.asn.au

AZTRONICS, 170 Sturt Street, Adelaide. Houses the HRSA-SA Group valve bank and modern components. They will source components for members. Great supporters of the HRSASA.

HRSA Melbourne (see *Radio Waves*) Houses the Victorian HRSA valve bank and odd passive components and kits, plus resource books written especially for members.

WES Components, Sydney. The catalogue is viewable on-line, and orders can be placed through the Shop Keeper or Secretary, as the SA Group has an account, through which we get "trade discount". Go to: https://www.wes.com.au

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Our NEXT Meeting:

Sunday 29th January 2023
1:00pm to 3:30pm
SALE DAY

This is NOT an Auction but an opportunity to bring items and sell them yourself at prices that YOU decide.
Please ring our secretary to Book a table ASAP.

(A fee of $10.00 per table for sellers will apply.)
To be held at:
St. Cyprian's Church Hall
70 Melbourne Street, North Adelaide, SA, 5007

Photo Gallery:

Christmas Lunch at the Maid of Auckland – Saturday 10th December

Photo Gallery: **From our November ASTOR Meeting**

Left:

The wooden-cased ASTOR Mickey grand MZ Radio (circa 1935)

Note the circular dial with two wooden knobs

36.5 cm high, 28 cm wide, 19 cm deep

Left:

The fully restored bakelite ASTOR 5 tube, dual-wave Model FP radio from 1947.

Left:

Les Janes talking about his Astor Mickey Grand MZ radio.

Left:

We had two of these ASTOR original B&W TV's on display. One restored by Christopher Ratcliff and the other by Peter Holland.

Left:

Front view of an Ivory battery-powered ASTOR radio.

Left:

A rear view of the same radio showing the restoration, including the battery packs.

Left:

A very compact early 1960's "pocket" transistor radio.

Left:

Graham Dicker tells the story of the ASTOR mixing desks made for the ABC Studios at Collinswood in Adelaide.

Photos courtesy of Stephen Parker