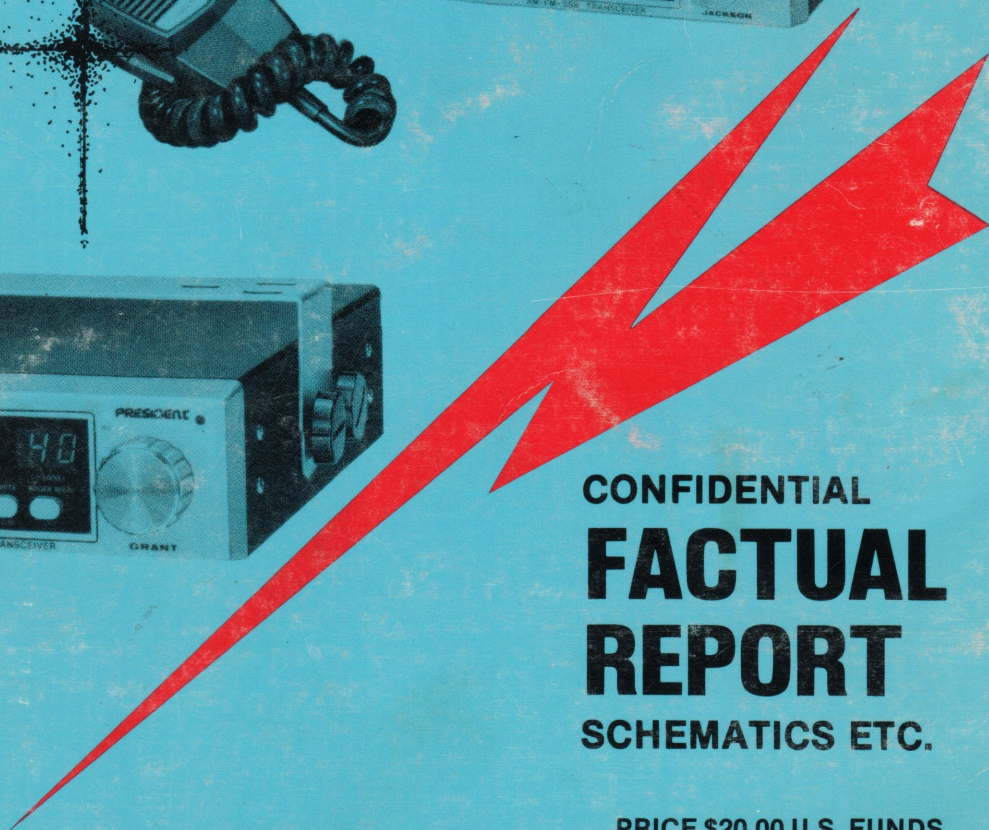
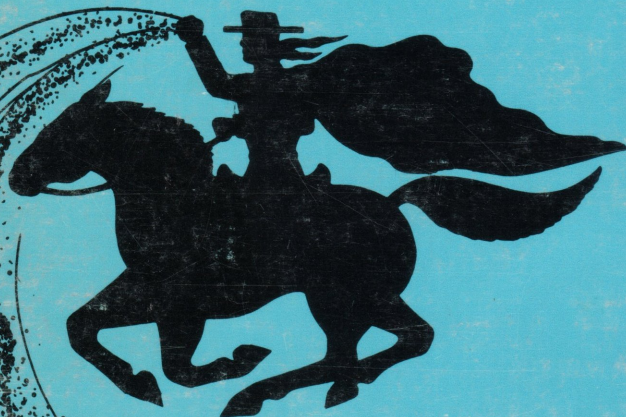


SECRET CB[®]



CONFIDENTIAL
**FACTUAL
REPORT**
SCHEMATICS ETC.

ACKNOWLEDGEMENTS

SECRET CB WISHES TO GRATEFULLY ACKNOWLEDGE THE FOLLOWING PEOPLE
FOR THEIR HELP AND CONTRIBUTIONS TOWARD GETTING VOLUME 19 IN PRINT.
THEIR ENCOURAGEMENT AND CONTRIBUTION OF MATERIAL HAS BEEN INVALUABLE.

GEORGE BAINES

JIM BRENNER

ROBERT CASE

CARL CLARK

DAVE CROWDER

TOM DURDEN

DON GARRISON

GROUCH

LES JERNIGAN

EMIL LANGO

JOHN LEVINS

DAVID LITTERER

GREG LOWRY

ROBERT TODARIO

JAMES VAUGHAN

BILL WENTZ

WANTED

NEW MODIFICATIONS

NEW CONVERSIONS

TECHNICAL TIPS

PROJECT PLANS

ETC. ETC. ETC.



DORIS SAYS "THANKS" AND A FREE
BOOK TO THE ABOVE PEOPLE.

INTRODUCTION

We are in our 7th year of publishing SECRET CB. Many people have been involved with the gathering of information that has gone into the 19 volumes. Hope all of you have enjoyed this joint effort as much as we have.

We have covered a lot of the FM-DX units and there will definitely be more to come in SECRET CB Volume 20. Such as, complete factory line up info for the Jackson & Grant; whole pot full of modifications for the Jackson complete with hi-low power switch; more modification for Grant.

JOKE - EXPOSED! See page 69 for flyer that was sent to distributors with no return address/explanation! Got them all stirred up trying to find 'WILSON & TAFT'. "NO SUCH RADIOS EXIST, FAKE ARTWORK AND SPECS." I know for a fact; as he sent me a little 'DORIS'. (See below, think I will keep her). Reason for doing this was: Quote: "Stir up the distributors, who would stir up the manufacture/importer, who in turn would start building some top notch equipment!"

Hope to have a NEW PRODUCT RELEASE for volume 20.

Bill's phone number has gotten out and he doesn't appreciate calls at supper time, nor partial information over the phone. PLEASE WRITE!

Seems rumors have started that NEC has discontinued the 2SC1306 and 2SC1307. This is not so. They are still in production and we here at SECRET CB have plenty in stock.

Still no winner to our puzzle contest. Here is another hint: two words that fit in the down section - agent & cord. Now you have to find where they go.

Hope all of you are as pleased as we are with the fine job William G. Wentz, Jr. is doing as Editor of SECRET CB. THANKS BILL!!!!!!

Always sincerely yours,

Doris

Doris Selman

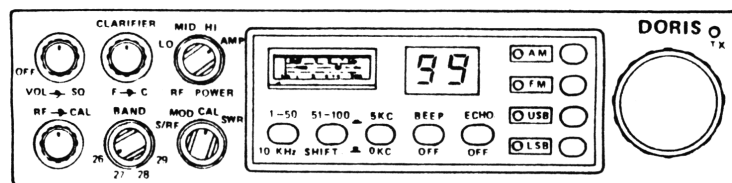


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SBE OWNERS

This is a retraction of information in SECRET CB Volume 18, page 34 in regards to source of SBE parts. Please do not contact SBE, Inc. of Emeryville, California as they do not have parts and/or manuals. Per our conversation with them and a letter from them, they no longer have any parts and do not know of any source for original parts, in fact, they say there are none available.

Quote from their letter:

RE: Inquiries about CB radios and scanners

Due to overseas competition, SBE was reorganized under Chapter II proceedings in 1980. At that time the federal court excused SBE from further responsibility for CB radio and scanner products.

Consequently, SBE no longer maintains a parts or manual inventory for the following products: CB's, Scanners, Amature (HAM) Equipment, Model Del Mar 225 Marine Radio, Tempus 10, 25 Land Mobile Tranceivers.

End of quote.

SORRY!

- - - - EARS - - - -

There are many tricks and ways to improve or boost a receiver's gain or sensitivity. I'm not saying I know them all. No one person could, but we (all of us CB'ers and technicians) collectively could come up with most of them, I'm sure.

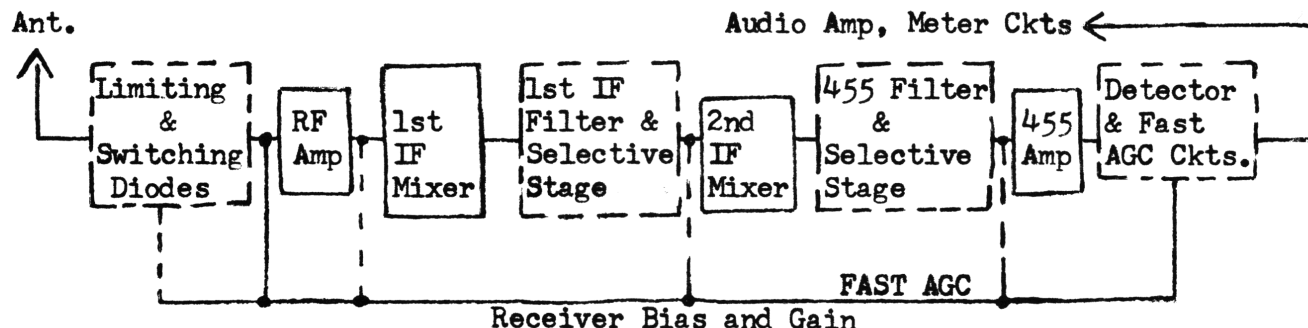
I have been doing some research and I've found volumes of print on how to improve the "mouth" on CB's but surprisingly I can not find one article on how to improve the "ears" of CB's. That is, excluding the normal tuning procedures.

I have talked with Doris at SECRET CB about this. She is willing, if enough interest is shown, to devote a volume of SECRET CB to this subject. It would be nice, from the standpoint of reference, to have all of this information in one volume.

So how about it fellow CB'ers and technicians? How about sharing your tricks with the rest of us? We can all benefit.

This thought from the Air Force Instructors' hand book: PERSON'S WHO SHARE THEIR KNOWLEDGE WITH OTHERS, EXTENDS THEMSELVES, EVEN BEYOND THEIR MORTAL EXISTANCE.

In order to improve the ears on any CB, we must first consider how the amplifier as a whole is designed. Also, so we might all use the same terminology when describing how to improve certain makes and models' ears, let us run through a basic modern C.B. receiver block diagram...



The open circuit gain of an amplifier is far above the gain used. You can prove this to yourself by adding all hfe for all of the transistors in an amplifier. An open circuit gain amplifier would be very noisy.

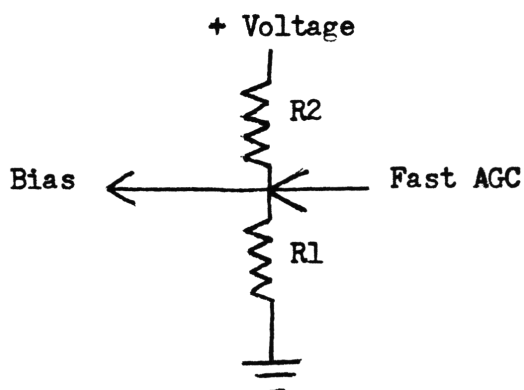
Each stage is set to a given operation gain both in DC and RF by the associated circuit components. D.C. bias is set by voltage level on the base. Self bias is established by resistance in the emitter circuit and/or current limiting resistors in the base. RF gain is established by by-pass capacitors in the emitter, other coupling capacitors and the load in the collector. These gains collectively are still well above the over all amplifiers required gain.

The most controlling and over all gain establishing signal is the close loop gain control. This consist of both a D.C.set or controllable bias, and fast AGC (Automatic Gain Control). They are generally mixed together. (Fast AGC decreasing the D.C. Bias level).

Through closed circuit gain an amplifier can be changed in linearity of gain, limited, clamped, clipped or manually controlled.

The later is the most common way of changing receiver sensitivity. If a unit does not have a pot for the purpose, there are two common easy ways to change the sensitivity.

1. Series R1 with another resistor of approximately the same R1 value.
2. Parallel R2 with another resistor of approximately 10 times R2 value.



When possible it is better to use the close circuit biasing of feedback to change the gain of a receiver. Sometimes, however, it is desirable to increase the gain on one particular stage of a receiver.

EARS (Cont.)

There are two common methods of doing this.

1. If it is using set biasing on the base simply increase it slightly.
2. If it is using controlled biasing but it has a resistor in the emitter for self biasing parallel that resistor with another of approximately the same value.

Other ways are changing the transistor to one with high (hfe) gain, adding capacitors, or changing collector loads.

Now a couple of CAUTIONS.

1. Generally it is not desirable to change biasing on a FET. They are low gain stages to start with and they are basically used for mixing or load isolation. There's not much to be gained in such a stage.
2. Generally it is not desirable to increase the gain of a tandem amplifier. (These are often found in the receiver as 455 amplifiers.) Most times they are designed to operate just below run-away state. If you should have a receiver that each time it receives a strong signal the needle goes to the upper limit and stays there, the tandem amp will be the culprit. The most common problem: Break down of the tantalum capacitor.

* * * * *

Now how about it technicians and CB enthusiasts? Don't you think we can use at least one volume devoted to the receiver? To make it a success we need your input...

* * * * *

Give the brand and models that you use special tricks on. Give the number on the components and detail the change. Most times all units listed in the same block on the CARD-KIT A & B kit can be included as a group. I will start it off as a sample: (Being first I get to pick an easy most used trick.)

Cobra 21, 25LTD/GTL; President AR/AX-44, 711, Andrew J.; Craig L-104.

To increase the receiver gain after installing a 'B' Kit by CARD-KIT modification:

1. Use the 4.7K resistor that was removed from R-58.
2. Lift the leg end of R-1.
3. Insert one end of the 4.7K in the place where R1's leg was soldered.
4. Solder the two ends together.

This will bring the receiver sensitivity back to approximately the same level as original. If more gain is desired.

5. Parallel C7, C8, and C11; on the printed circuit side, with another 0.01mf capacitor. This will give you another db or two.

If your customer likes the quietness but wants a strong signal on units that are close, here is another easy, quick trick.

6. Instead of using the 4.7K resistor removed from R-58, use a 2.2K and do steps 1-4, omit 5.
7. Raise the cathode of D4 in the detector and fast AGC circuit off ground.
8. Use a 1N914 or 1N4148 (any similar fast switching diode).
9. Solder the 1N914's cathode where D4 was.
10. Solder the anode of the 1N914 and the cathode of D4 together. This changes the AGC voltage's linearity.

WELL, HOW ABOUT IT ?? - WANT SOME INPUT ON THIS BEFORE VOLUME 20....

JACKSON Fo CHART

Some Owner's Manual didn't have this, - Permission to copy.....

ANT FREQUENCY (MHz)										
	A BAND		B BAND		C BAND		D BAND		E BAND	
	Nor- mal	+10 kHz	Nor- mal	+10 kHz	Nor- mal	+10 kHz	Nor- mal	+10 kHz	Nor- mal	+10 kHz
1	26.065	26.075	26.515	26.525	26.965	26.975	27.415	27.425	27.865	27.875
2	26.075	26.085	26.525	26.535	26.975	26.985	27.425	27.435	27.875	27.885
3	26.085	26.095	26.535	26.545	26.985	26.995	27.435	27.445	27.885	27.895
		(3A)		(3A)		(3A)		(3A)		(3A)
4	26.105	26.115	26.555	26.565	27.005	27.015	27.455	27.465	27.905	27.915
5	26.115	26.125	26.565	26.575	27.015	27.025	27.465	27.475	27.915	27.925
6	26.125	26.135	26.575	26.585	27.025	27.035	27.475	27.485	27.925	27.935
7	26.135	26.145	26.585	26.595	27.035	27.045	27.485	27.495	27.935	27.945
		(7A)		(7A)		(7A)		(7A)		(7A)
8	26.155	26.165	26.605	26.615	27.055	27.065	27.505	27.515	27.955	27.965
9	26.165	26.175	26.615	26.625	27.065	27.075	27.515	27.525	27.965	27.975
10	26.175	26.185	26.625	26.635	27.075	27.085	27.525	27.535	27.975	27.985
11	26.185	26.195	26.635	26.645	27.085	27.095	27.535	27.545	27.985	27.995
		(11A)		(11A)		(11A)		(11A)		(11A)
12	26.205	26.215	26.655	26.665	27.105	27.115	27.555	27.565	28.005	28.015
13	26.215	26.225	26.665	26.675	27.115	27.125	27.565	27.575	28.015	28.025
14	26.225	26.235	26.675	26.685	27.125	27.135	27.575	27.585	28.025	28.035
15	26.235	26.245	26.685	26.695	27.135	27.145	27.585	27.595	28.035	28.045
		(15A)		(15A)		(15A)		(15A)		(15A)
16	26.255	26.265	26.705	26.715	27.155	27.165	27.605	27.615	28.055	28.065
17	26.265	26.275	26.715	26.725	27.165	27.175	27.615	27.625	28.065	28.075
18	26.275	26.285	26.725	26.735	27.175	27.185	27.625	27.635	28.075	28.085
19	26.285	26.295	26.735	26.745	27.185	27.195	27.635	27.645	28.085	28.095
		(19A)		(19A)		(19A)		(19A)		(19A)
20	26.305	26.315	26.755	26.755	27.205	27.215	27.655	26.665	28.105	28.115
21	26.315	26.325	26.765	26.775	27.215	27.225	27.665	27.675	28.115	28.125
22	26.325	26.335	26.775	26.785	27.225	27.235	27.675	27.685	28.125	28.135
23	26.355	26.365	26.805	26.815	27.255	27.265	27.705	27.715	28.155	28.165
24	26.335	26.345	26.785	26.795	27.235	27.245	27.685	27.695	28.135	28.145
25	26.345	26.355	26.795	26.805	27.245	27.255	27.695	27.705	28.145	28.155
26	26.365	26.375	26.815	26.825	27.265	27.275	27.715	27.725	28.165	18.175
27	26.375	26.385	26.825	26.835	27.275	27.285	27.725	27.735	28.175	28.185
28	26.385	26.395	26.835	26.845	27.285	27.295	27.735	27.745	28.185	28.195
29	26.395	26.405	26.845	26.855	27.295	27.305	27.745	27.755	28.195	28.205
30	26.405	26.415	26.855	26.865	27.305	27.315	27.755	27.765	28.205	28.215
31	26.415	26.425	26.865	26.875	27.315	27.325	27.765	27.775	28.215	28.225
32	26.425	26.435	26.875	26.885	27.325	27.335	27.775	27.785	28.225	28.235
33	26.435	26.445	26.885	26.895	27.335	27.345	27.785	27.795	28.235	28.245
34	26.445	26.455	26.895	26.905	27.345	27.355	27.795	27.805	28.245	28.255
35	26.455	26.465	26.905	26.915	27.355	27.365	27.805	27.815	28.255	28.265
36	26.465	26.475	26.915	26.925	27.365	27.375	27.815	27.825	28.265	28.275
37	26.475	26.485	26.925	26.935	27.375	27.385	27.825	27.835	28.275	28.285
38	26.485	26.495	26.935	26.945	27.385	27.395	27.835	27.845	28.285	28.295
39	26.495	26.505	26.945	26.955	27.395	27.405	27.845	27.855	28.295	28.305
40	26.505	26.515	26.955	26.965	27.405	27.415	27.855	27.865	28.305	28.315

EXPORT ROUNDUP

THESE PAGES WILL BE UPDATED EVERY ISSUE - TO LET YOU KNOW WHAT IS REALLY OUT..

If you have ANY information (OWNER'S MANUALS, SCHEMATICS, FACTORY SERVICE MANUALS, FACTORY ALIGNMENTS) please send to Doris...ORIGINALS! Copies are no good, 80% of the time. Originals will be returned as soon as copied; have excellent facilities for doing this; and can then utilize the material. (I sent Doris the 148GTL-DX Early/Late versions; Factory Service Manual-corrected; in April '83 and they were returned within a week). This is the only way to compile information on these Export units, as most U.S. companies will not co-operate.

UNIT	LINE-UP PRINTED	SCHEMATIC PRINTED	OWNER'S MAN. ON FILE.....	VOLUME INDEXED
Cobra 148GTL-DX (Early) 120 Ch. AM/FM/SSB/CW 26.515-27.855MHz, 8719-PLL	V-16	V-19		X
Cobra 148GTL-DX (Late) 120 Ch. AM/FM/SSB/CW 26.515-27.855MHz, MC145106P-PLL	V-17	V-19		X
Palomar 2400, 240 Ch. AM/FM/SSB/CW 26.065-28.755MHz, 02A-PLL	V-18	V-17	X	X
Commtron XII, 120 Ch. AM/FM 26.515-27.855MHz, LC7120-PLL	V-18	V-17	X	X
Colt 510, 120 Ch. AM/FM 26.515-27.855MHz, LC7120-PLL	V-18	V-17	X	X
Lafayette 1800, 200 Ch. AM/FM/SSB/CW 25.965-28.005MHz, 02A-PLL			X	X
Super Star 2000, 200 Ch. AM/FM/SSB/CW 26.065-28.305MHz, 02A-PLL (See note #1)			X	X
Super Star 2000, 200 Ch. AM/FM/SSB/CW 25.965-28.005MHz, 02A-PLL (See note #1)			X	X
Cobra 148GTL-B, 60 Ch. AM/SSB (120 ch. ?) 26.315-27.605MHz, 02A-PLL (See note #2)		V-17	X	X
Tristar 747	V-19	V-15		X
Cobra 150GTL				X
Teaberry Stalker IX (FM)				X
Starfire DX				
Colt 2400, 240 Ch. AM/FM/SSB/CW 26.065-28.755MHz, 02A-PLL	- - - Identical to Palomar 2400 - - -			X
Colt 1600DX				
Colt 2000DX				
Colt 320FM	See 747 Tristar			

NOTE #1: 2 different versions exist!

#2: Called 60 ch., Fo sheet shows 120 chnls. (have been noted coming in either configuration-120 Ch. unit has mod on Tone Sw.)

EXPORT ROUNDUP (Cont.)

UNIT	LINE-UP PRINTED	SCHEMATIC PRINTED	OWNER'S MAN. ON FILE.....	VOLUME INDEXED
Ham International Concorde II	See 747 Tristar			
Rygain V (Export)	See 747 Tristar			
NATO 2000, 200 Ch. AM/FM/SSB/CW; and U.K.-FM 26.065-27.855MHz (FM-27.60125-27.99125MHz)			X	X
Thunder 2000, 240 Ch. AM/FM/SSB/CW 26.065-28.755MHz, 02A-PLL	- - - Identical to Palomar 2400 - - -			
Intec 1200FM				
Pacific SSB 800, 80 Ch. AM/SSB 26.965-27.855MHz, MC145106-PLL		V-19	X	X
Rygain 8795				
Ham International Concorde				
Jumbo				
Lafayette 1200FM				
Multimode II				
Major 360				
Major M588				
Teaberry Stalker XX (FM), 80 Ch. AM/SSB/FM 26.965-27.855MHz, (MB8719-PLL)				X
Lafayette 2400, 240 Ch. AM/FM/SSB/CW 26.065-28.755MHz, 02A-PLL	- - - Identical to Palomar 2400 - - -			X
Super Star 360, 120 Ch. AM/SSB/CW 26.965-27.405MHz; 28.000-28.940MHz (MB8719-PLL)		V-18	X	X
Super Star 360FM, 120 Ch. AM/FM/SSB/CW 26.965-27.885MHz; 28.500-28.940MHz (MB8719-PLL)				X
Academy 501				
Academy 502				
Amstrad CB900				
Amstrad CB901				
Audioline 340				
Audioline 341				

EXPORT ROUNDUP (Cont.)

UNIT	LINE-UP PRINTED	SCHEMATIC PRINTED	OWNER'S MAN. ON FILE	VOLUME INDEXED
Audioline 345				
Barracuda GT868				
Barracuda HP940				
Binatone 5-Star				
Colt 295				
Cobra 21XFM				
Colt 320DX				
Colt Excalibur (EXPORT)				
Commtron CB40F				
Cybernet Beta 1000				
Cybernet Beta 2000				
Cybernet Beta 3000				
Elftone ELCB6000				
Falcon 2000				
Fidelity CB1000M				
Fidelity CB300M				
Fidelity CB2000M				
Fidelity 2001FM				
Great GT858B				
Great GT868B				
Harvard 400M				
Harvard 402MPA				

EXPORT ROUNDUP (Cont.)

UNIT	LINE-UP PRINTED	SCHEMATIC PRINTED	OWNER'S MAN. ON FILE	VOLUME INDEXED
Harvard 420M				
Harvard H401				
Harrier CBX				
Harrier CBHQ				
Halycom Cheetah				
Halycom Condor				
Ham International 8040				
Hygain 80				
Hygain 2795				
Hygain 2795DX				
Johnson XK2000				
Lake 850				
Lake 950				
Lafayette HB870AFS				
Maxcom 4E				
Maxcom 6E				
Maxcom 16E				
Maxcom 20E				
Maxcom 21E				
Midland 2001T				
Midland 2001 (Export), 120 Ch. AM-Only (Line-up identical to Colt 510, less FM cks.) 26.515-27.855MHz, IC7120-PLL	V-18	V-19	X	X
Midland 7001(Export)				
Midland 76-200				

EXPORT ROUNDUP (Cont.)

UNIT	LINE-UP PRINTED	SCHEMATIC PRINTED	OWNER'S MAN. ON FILE	VOLUME INDEXED
Midland 3001				
Midland 4001				
Mustang CB1000				
Mustang CB2000				
Mustang CB3001				
Nato 40FM				
Oscar 1				
Petrusse Pacific 160				
Radiomobile 201				
Radiomobile 202				
Rotel RVC220				
Rotel RVC230				
Rotel RVC240				
Sapphire 2000X				
Sirtel Searcher				
Speedway				
Stalker ST-9FDX				
			V-19	
Steepletone SCB1FM				
Tandy TRC-2000				
Tandy TRC-2001				
Tandy TRC-2002				
Tristar 777				
Tristar 797, 200 Ch.				

EXPORT ROUNDUP (Cont.)

UNIT	LINE-UP PRINTED	SCHEMATIC PRINTED	OWNER'S MAN. ON FILE	VOLUME INDEXED
Transcom CBX2000				
Transcom CBX4000				
Transcom GBX4000				
Uniace 100				
Uniace 200				
York JCP861				
York JCP863				
Major M-120, 120 Ch. AM/FM 26.965-28.305MHz, 02AG-PLL		V-19	X	X
Grant-DX, 120 Ch. AM/FM/SSB 26.515-27.855MHz, MB8719-PLL		V-19	X	X
Commtron VIII				
Colt 870				
DNT M40FM				
DNT 2740FM				
Fidelity CB1000FM				
Formac 120				
Ham International Hercules FM				
Ham International Puma				
Ham International Viking				
Hycom CB2000				
Hycom CB3000				
Hycom CB4000				

EXPORT ROUNDUP (Cont.)

UNIT	LINE-UP PRINTED	SCHEMATIC PRINTED	OWNER'S MAN. ON FILE	VOLUME INDEXED
Jaws II				
Major M540				
Major 3000				
Midland 150M (Export)				
Midland 77-FM-005				
Mongoose 2000				
Multitech MS211				
Pearce-Simpson Super Lynx 18				
SAM 2000				
Shogun CB				
Sommerkamp TS310DX				
Stag 357				
Vice-President FRANK				
Vice-President ROY				
WKS 1001				
Marko CB-444, 120 Ch. AM/FM 26.965-28.305MHz, 02A-PLL		V-19	X	X
Tristar 727, 120 Ch. AM/FM 26.965-28.305MHz, uPD2810-PLL		V-19	X	X
Jackson, 226 Ch. AM/FM/SSB 26.065-28.315MHz, MC145106-PLL		V-19	X	X
Super Star 360FM, 120 Ch. AM/FM/SSB/CW 26.515-27.855MHz, MC145106-PLL (See note #1) - - - Identical to 148GTL-DX (Late)				
Tristar 848, 240 Ch.				
Super Star 95, 120 Ch. AM 26.515-27.855MHz, uPD2810C-PLL		V-19	X	X

EXPORTS

MIDLAND 2001 (EXPORT), 120 channel-AM Only! Freq Range: 26.515-27.855MHz.
Power Specs - 5W, Schematic shows 3 different finals;
(2SC1306, 2SC2078, 2SC495) Change if 2SC495 in unit!
*See write-up this volume.

PACIFIC SSB 800, 80 Channel-AM/SSB; Freq Range: 26.965-27.855MHz.
Power Specs: 4W-AM, 12W-SSB.. El Cheapo Final AGAIN!
Shows some class with built-in SWR meter, then blows it
with RF Gain switch? PLL chip is one good thing - as
is MC145106, and modifiable without playing with Xtals.
2-bands are achieved by Xtal switching. Slide Mod in
Vol. 18... *See write-up this volume..

MAJOR M-120, 120 Channel-AM/FM; Freq Range: 26.965-28.305MHz.
'Dream Boat' - Basic old HyGain 02A 2-crystal AM Chassis!
Crystal switching for extra channels, 2SC1306 Final, and
is now relay switching. *See write-up this volume.

GRANT-DX, 120 Ch. AM/FM/SSB; Freq Range: 26.515-27.855MHz.
POWER is the word on this unit - 10W in both AM and FM; 20W +
in SSB. Roger Beep switch, NO SWR METER???, Finned Heat Sink
for RF Power Xstrs, and 'Slider' Kit furnished with instructions.
*See write-up this volume..

TRISTAR 727, 120 Channel-AM/FM; Freq Range: 26.965-28.305MHz.
Major feature on this particular unit is the 3-way RF Power
Switch. 'No Frills Unit' - just necessary controls.

MARKO CB-444, 120 Channel-AM/FM; Freq Range: 26.965-28.305MHz.
'Deluxe unit'; RF Gain, NB/ANL, CB/PA, and SWR Meter.
*See write-up this volume..

JACKSON, 226 Channel-AM/FM/SSB; Freq Range: 26.065-28.315MHz.
POWER SPECS: AM/FM-10W, SSB-21W. Roger Beep switch, NO SWR METER??
10KHz jump switch, Coarse/Fine 'Slide'. MRF477-Final, 2SC2166-Driver,
MC145106-PLL (2 useless switches on unit-3 if you count the PA.)
This is the unit that everyone has been waiting for, wouldn't be
surprised to see GONE by the time this volume comes out.

SUPERSTAR 360FM, 120 Channel-AM/FM/SSB/CW; Freq Range: 26.515-27.855MHz.
This particular unit is identical to the Cobra 148GTL-DX,
Late Version! Use all of that data for service/modification.
CAUTION: 2 versions of this unit exist; see Vol. 18, page
12; for specs on the other.

SUPERSTAR 95, 120 Channel-AM Only.; Freq Range: 26.515-27.855MHz.
Almost Identical to the Tristar 727 (No FM, and different Fo Rng.)
"read the manual carefully" - doesn't put out 15W as the front
indication says! *See write-up this volume..

"Export Roundup", was up to date (for all received information) as of
May 20, '84. If any left out, send the Owner's Manual.....

Ed. Notes:

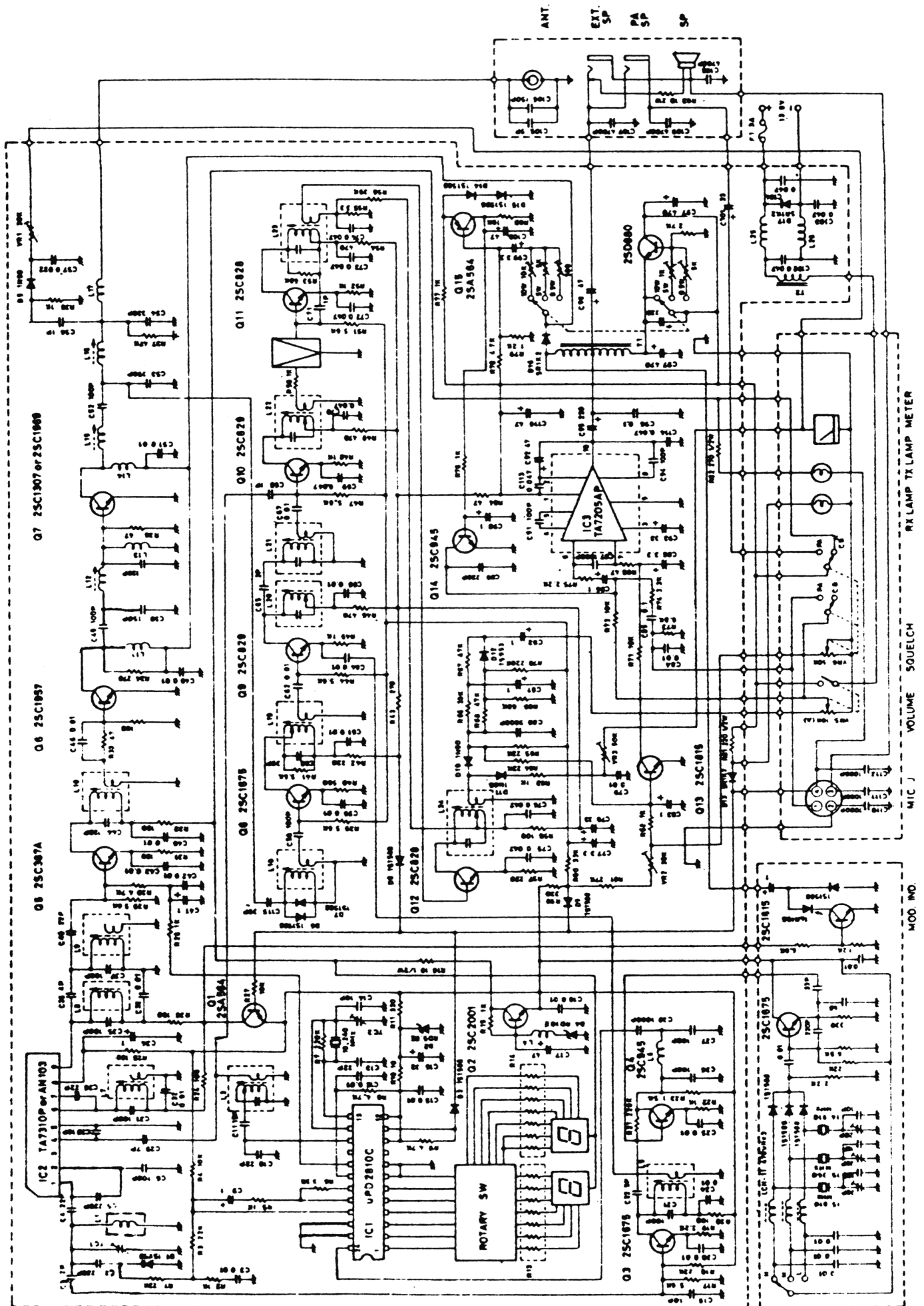
The EXPORT ROUNDUP will be cut back in Vol. 20, and only the NEW units not previously listed will be mentioned. - Unless a vast amount of information "materializes". (Remember that the Roundup is not indexed!) I am trying to work out an arrangement with some distributors for obtaining information. But they are slow about sending manuals, even though sent back the same day received.

Contributors - I utilize the information received on a first in, first used basis, most of the time. If more complete information is received from another person use it instead. By complete I mean: Manufacturer; Model-Name; PLL type; Frequency Range of operation; Mode of operation (AM - FM - SSB - CW - ?); Specification Sheet; and Schematic. Ideal information is 'Original Owner's Manual and Schematic. (I am sitting on an 'Export' line-up procedure now, because the Transmit portion wasn't sent in?). Also have gotten away from repeating ('new') modifications on previously published information, when all they amount to is: re-write or using a different type of switch arrangement, but is still basically the same! It must be new - the only type of repeat type of information will be on a breakthrough to accompany the original.

ALL - Problems, service information is published. As is any buys on discontinued items by R/S.--(The problem here is that by the time we get into print, stuff is hard to find - still say we needed that combination "Wanted-Sell-Trade" Newsletter...but? (Note: I tried it myself separately from Secret CB; and only went \$85 in the hole; with printing/mailing costs!) Well, maybe someday it will come about...as parts for older units are getting hard to find. RE: Plastic front for 858 Grant is an example; Factory doesn't have!

Later, goin' Fishin' --- back in August.

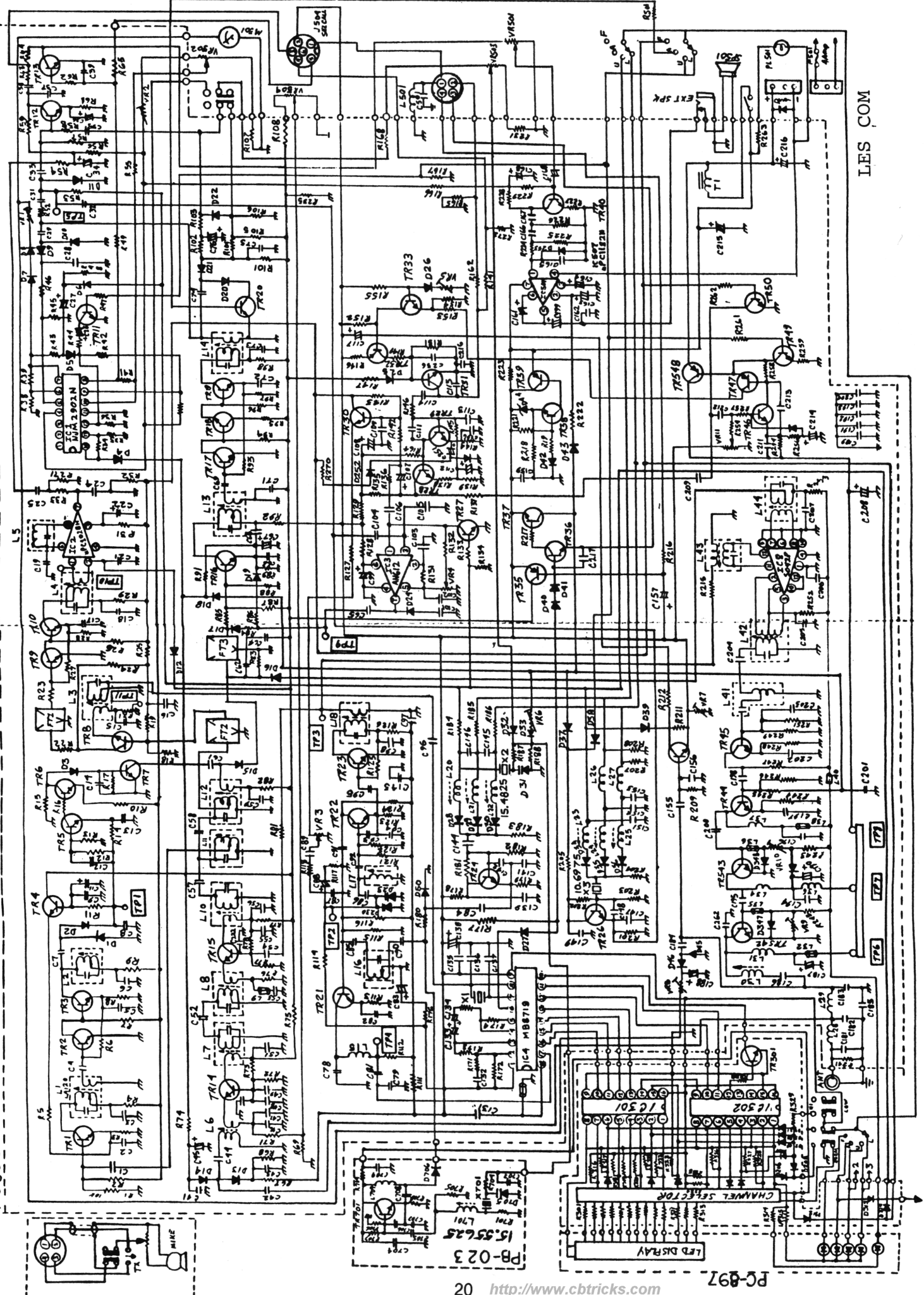
SUPERSTAR 95



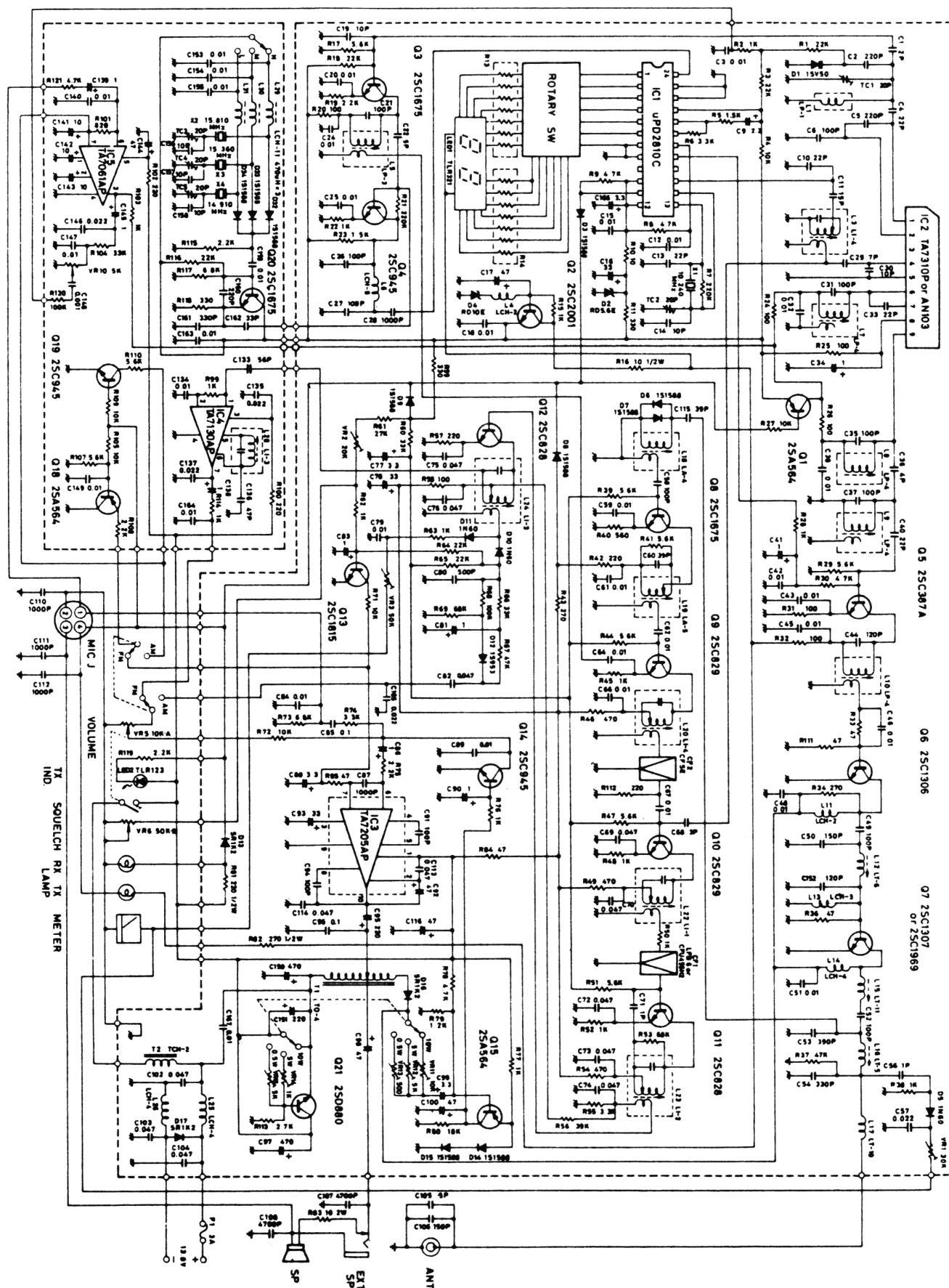
STALKER IX ST9-FDX (DATE VERSION)

PC893AC

LES COM







SCHEMATIC DIAGRAM

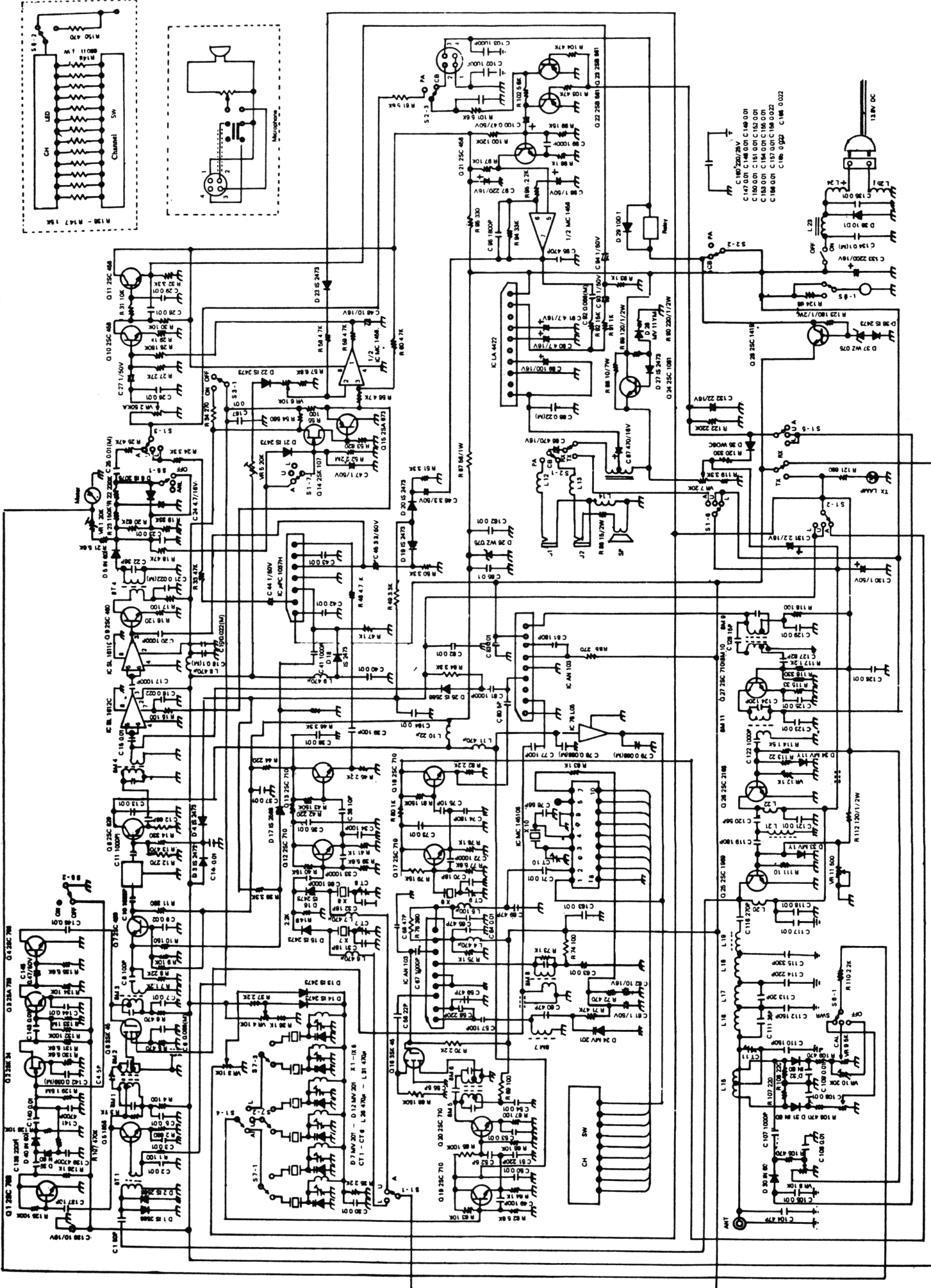


[illegible]

25C1973 25C1730L

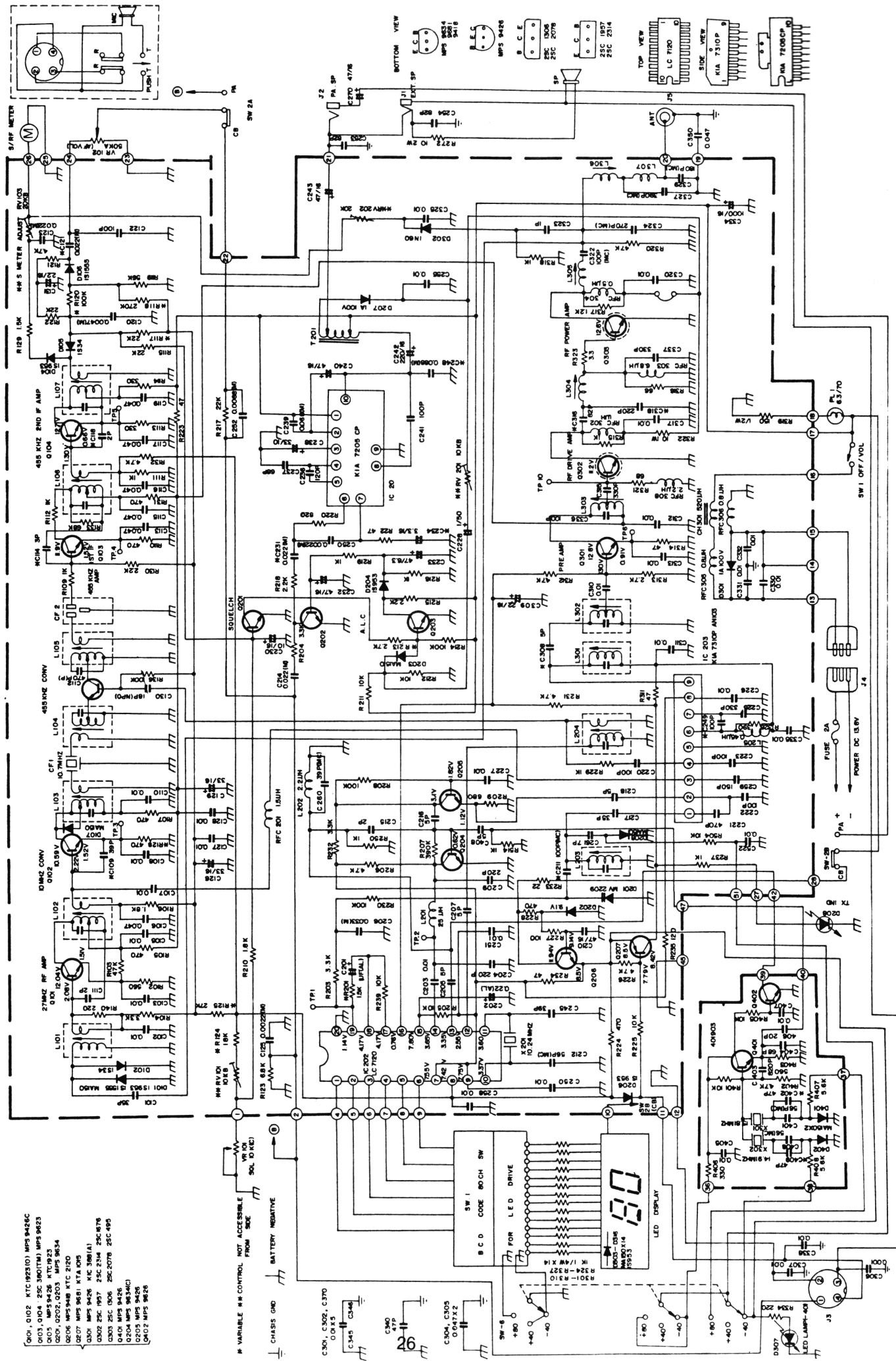
TP7 2SC2312C

PACIFIC 800 55B



MIDLAND 2001 (EXPORT)

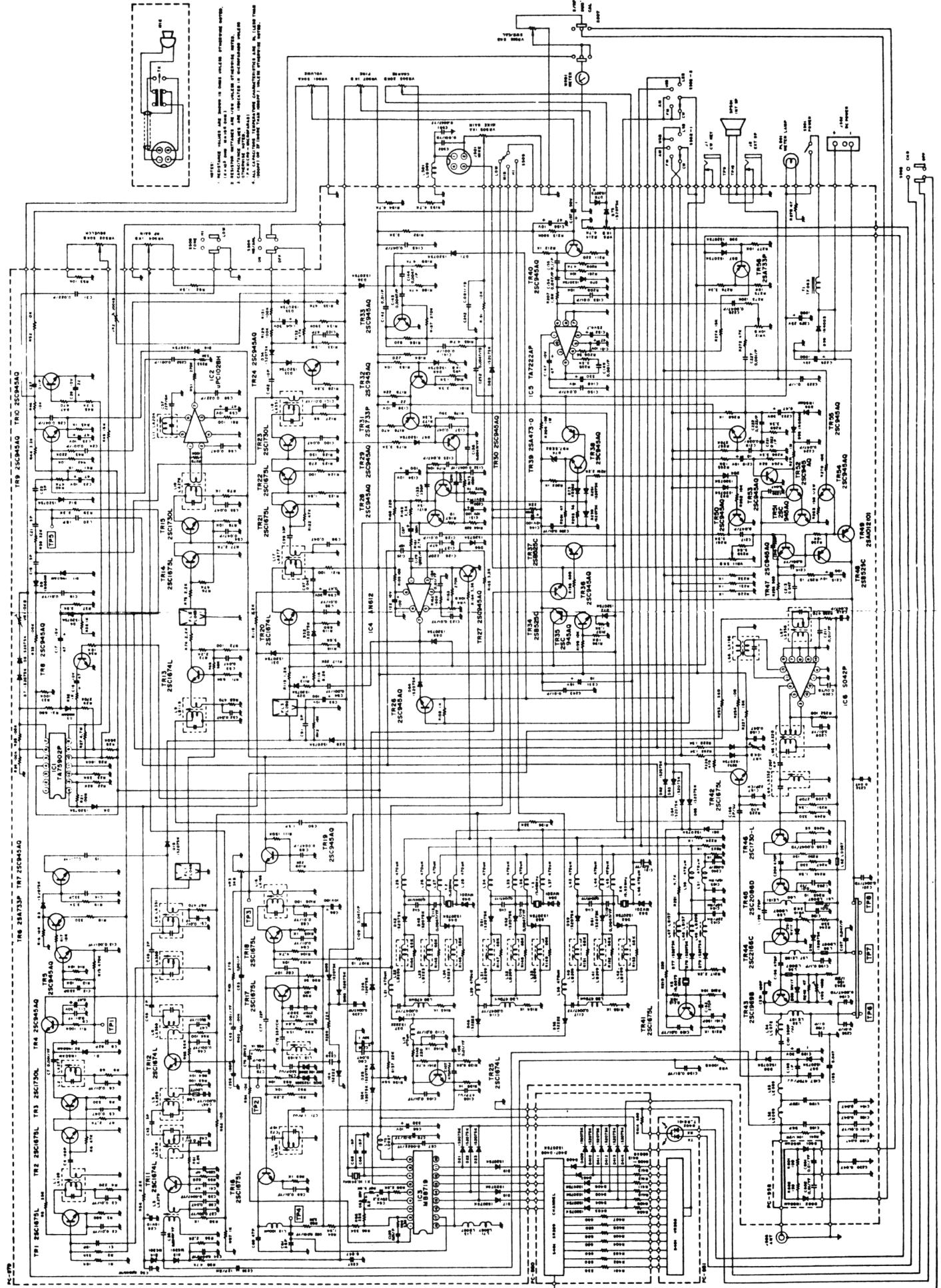
SAME AS 77-120 (EXPORT)



SCHEMATIC DIAGRAM

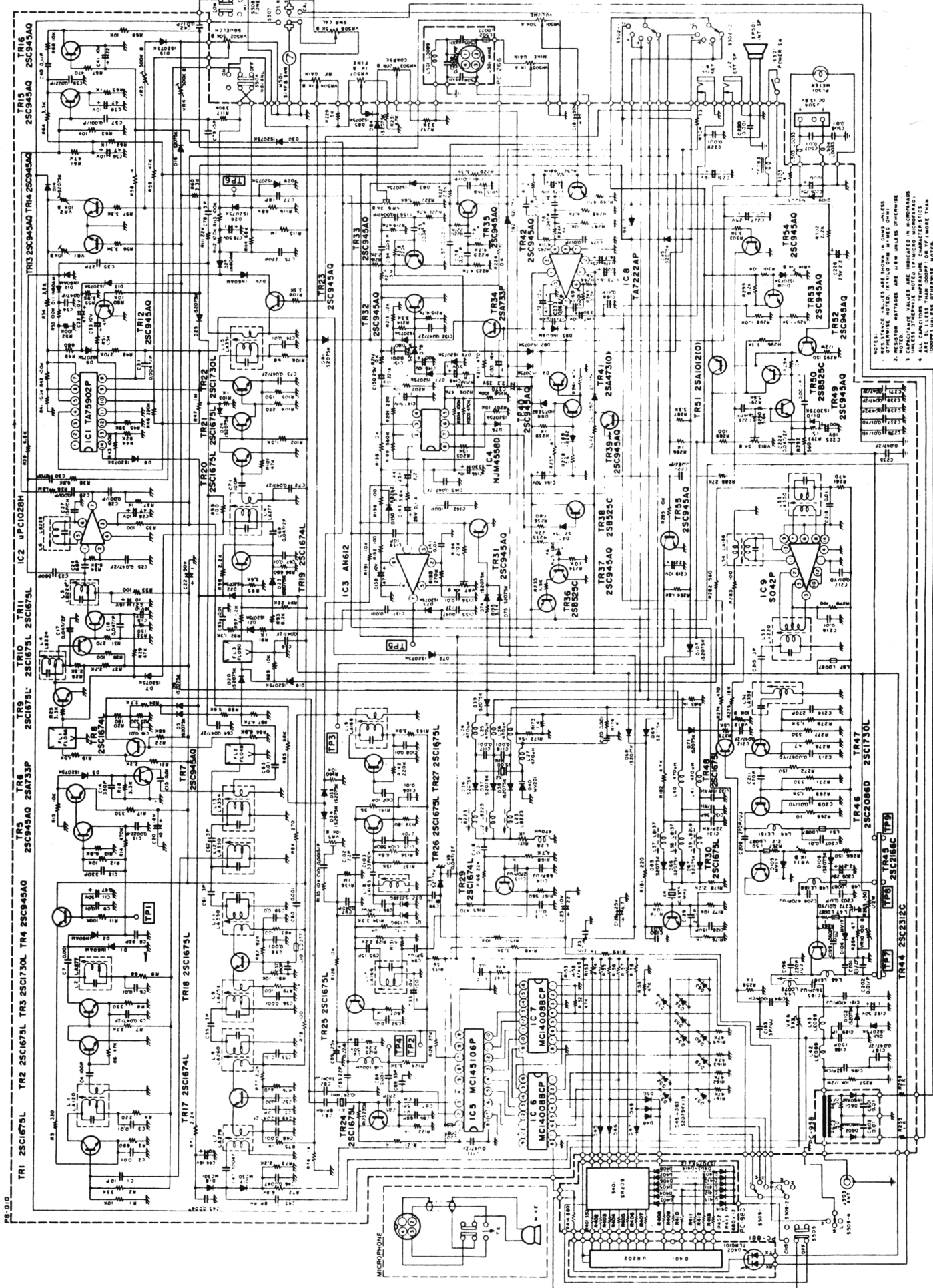
COBRA 148GTL-DX (EARLY)

SCHEMATIC DIAGRAM



COBRA 148GTL-DX (LATE)

SCHEMATIC DIAGRAM



NOTES:
 1. RESISTANCE VALUES ARE IN OHMS, UNLESS OTHERWISE SPECIFIED.
 2. RESISTOR VALUES ARE IN OHMS, UNLESS OTHERWISE SPECIFIED.
 3. CAPACITANCE VALUES ARE IN PICO FARADS, UNLESS OTHERWISE SPECIFIED.
 4. UNLESS OTHERWISE NOTED, MICROPHONES ARE 1/2" DIAMETER.
 5. ALL VALUES ARE APPROXIMATE, UNLESS OTHERWISE SPECIFIED.

EXPORT TUNEUPS

PACIFIC 800 SSB: (Worked from schematic on this one - SEE Vol 18 also!)
CHANGE FINAL-to 2SC1307, check insulators on Driver/Final and change if needed. Owner's Manual on this unit is good; and schematic for unit comes with it! Plenty of switches to play with also on the front panel; as this chip is modifiable; (Programming Pins for this chip: 9 through 17).
Rx Tune: 8T1, 8M1, 8M2, 8M3, 8M4, 8T4...Tx Tune: 8M9, 8M11, 121, 129.
The adjustments inside unit (12 of them)? Fact: VR1-Rx Mtr, VR12-Driver Bias, VR10-Tx Mtr... (See Vol. 18 for additional locations)...Will print update on adjustments if received, as no unit to play with! SLIDE-Vol.18

MIDLAND 2001 (EXPORT): Owner's Manual is for U.S. model, has addendum for Export Version and schematic also. SPECIAL NOTE: Check Final immediately as schematic calls out 2SC495 being used as a Final-change to 2SC1306! This is only in some production runs-I HOPE, as don't have access to unit. Frequency shift is by two external crystals for low/hi bands, 14.91MHz for low band and 15.81MHz for hi band.. THEORY wise replacing the 15.81 crystal with a 14.46MHz crystal will achieve 40 additional channels on the lower side. Thus keeping off the SSB Fo's. (The crystal change should start you out at 26.065MHz-with realignment of PLL section..!)
Rx Tune: L101, L102, L103, L104, L105, L106, L107.
Tx Tune: L301, L302, L303, L304, L305, L306.
Adjustments inside unit: RV103-S Meter, RV202-Tx Meter, RV201-AMC, RV101-Sq Rng... IF NEEDED ONLY-AMC defeat is C228... If too noisy, increase value of C131... Nice little unit and not too \$\$, from what I hear...

MAJOR M-120: If you are bi-lingual will have fun on the manual that comes with this unit, (or learn something new-French & German also.). Basic Hygain 02A 2-Crystal chassis, with additional FM and Oscillator boards. Also has been changed to Relay switching for additional plug-in (not available). Comes with schematic, but schematic of the Oscillator board is not given? Final is 2SC1306-See SCB Vol. 15, page 65 for basic idea on Power modification. (I have seen a 'sealed' full-blown modified unit allready and checked on a dummy load: Freq Range was 25.685-28.305MHz, Power spread ran from 8.4W to 11.1W across the band...wrote up the freq's and is further on in this volume.) Also have heard that these units aren't expensive initially and 'out-of-box' performance needs only the the AM modulation turned up to about 90%. Line-up is basic Hygain 02A Chassis....(DO NOT REMOVE THE MODULATION LIMITER).....

GRANT-DX: This unit was the fastest unit to sell-out I have seen, GONE in two weeks flat! No frequency list comes with the EXPORT manual, but a schematic does come with it. 8719-PLL is fed by 2-4 bit adders; has 2-2SC2312's in parallel for RF Power (Final), and 2SC2166 used as a Driver. Unit doesn't have the 'split clarifier' as in the 02A chip exports; which is good-also furnished with unit is 'kit' for \pm 7KHz 'Slider', and instructions are good. The one mis-giving on this unit is no SWR meter? Power has to be turned down, if you are going to use a linear: VR13-AM, VR12-SSB, VR14-AMC. (Have heard that is smoking Linears!) Basically is a cross between Early/Late Versions of the Cobra 148GTL-DX with 'beefed' Transmit, switchable BEEP, standard U.S. clarifier, and NO SWR meter! If only they had used the MC145106P-PLL chip, and had an SWR Meter... No alignment on unit as yet, but have been told adjustments are marked on PCB.....

EXPORT TUNEUPS

TRISTAR 727: Plain 'NO FRILLS' unit, (No P.A., that is how plain it is!). RF Power is switchable in 3-levels: 0.5/5.0/10W. 2SC1306/1307 - Driver, and Final. TX Peak: L8, L9, L10, L12, L15, L16. RX Tune: L18, L19, L20, L22, L23, L24. VR1-Tx Mtr, VR3-S Mtr, VR2-Sq Rng, VR11-15 are TX Power adjustments, TC3-5 are Fine Adjustments on Crystals. PLL chip uPD2810 has Pin 7 tied to DC Gnd (Programming Pin); also Pin 22 is at DC Gnd (Frequency Select 5KHz/10KHz spacing); by isolating and changing logic level - who knows? Remember this is a ROM chip..

MARKO CB-444: This particular unit has all the features; RF Gain Pot., CB/PA, SWR Meter, ANL/NB, and 7.5W rated RF output. From the looks of schematic might be another of the old HYGAIN 02A 2-Crystal Chassis. If so have a ball, as plenty of 'extra switches' on the front panel. TX Peak: T3, T4, L7, L11, L12. RX Tune: T5, T6, L14, T7, T8, T10. RV4-Tx Mtr, RV3-S Mtr, RV2-AMC, RV1-Sq Rng. I like this unit because of the 'little extras' and the SWR meter is needed when expanding the unit for another 100+ channels which is no problem.

JACKSON: Like I said, this is THE ONE! Vastly 'up-dated version' of the 148GTL-DX(Late). A new diode matrix for logic switching of frequencies; broad-banded chassis; 10KHz jump switch-which shifts the whole band up; 'Beefed/re-designed' RF section. Hard to believe, but not much to modify on this unit. The only 'short-comings' are: lack of SWR Meter, and a High/Low RF output power switch. Both of these are needed! But instead put a Mod/S-RF, and ANL/NB push-buttons on the unit. (Will probably have these in the next Uniden version to come out.).....For line-up; BASIC; compare schematics with 148GTL-DX(Late)-and use it's line-up, just don't screwdriver the unit-as there is no Factory Line-up available yet!..... Careful on RF Power Output-just because the Final is 40W, doesn't mean that it has to be run full tilt!\$\$\$... Also this unit will fry your linear amplifier.... Adjustments you might have to turn down: AM Power: VR11; SSB Power: VR8; AMC: VR12.....

SUPERSTAR 95: Use the Tristar 727 alignment (above) on this one, as almost identical. The same particulars pertain to PLL chip also. NOTE: If you get 15W out of this unit - good, but 10W is about it.

Well that's about it for the EXPORTs, by now should really start calling them the "IMPORTS"... Are found out in the open now - just about any large truck stop has them for sale. RE: JACKSON's being sold for about \$325 minimum is the going rate - Remember: No Warranty, on any of these units, so know what you're doing if the covers come off....

Rumors are floating already about 3 additional Uniden 'type' units.... we'll see in Vol. 20.....

CAUTION—DOUBLE BOARD EXPORTS!

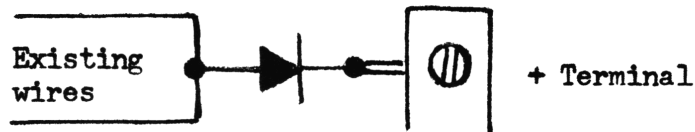
Below is list of 02A PLL Double-Board Export Chassis known to exist at this time. BEWARE, as will run into same service problems as U.S. versions! Major 360, Major M588, Multimode II, Ham International Concorde-(Not the Concorde II), Lafayette 1200FM. If anyone finds additional units pass along the info - might save someone a lot of headaches!

COBRA 150GTL OWNERS

I have been told that to have an INTEC 1200FM, all you do is peel off the COBRA label! Presto, you got it..... Someone set the record straight on this! Does the label say: Cobra 150GTL or Cobra GTL-150? Also need Fo's/PLL type...

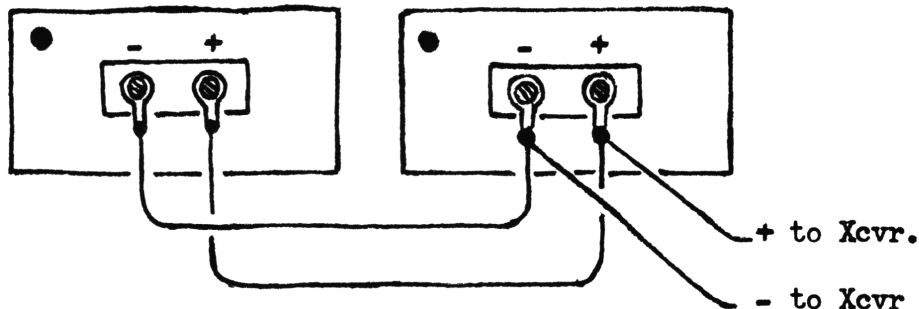
DOUBLING UP FOR CURRENT!

The 'newer' model Uniden Exports won't run on the normal 2.5-3.5A Reg. Power Supplies (especially the R/S #22-124/A's). Go buy another and hook-up in parallel - FIRST - "Carefully" drill out the pop rivets on case and remove all existing wiring to the + terminal. Modify BOTH as shown below: 6A/100V Rectifier Diode (Minimum Rating) in series to + terminal.



SECOND - Hook up both units in parallel, then the transceiver to either.

(Use insulated ring tongue hardware)



CROSS-REFERENCE

Thanks to Emil on this one: If you own a complete set of SAMS CB's will be of no interest; however some of us 'not so lucky'; have hit it with the following cross-references. Will run a cross-reference in future issues when/if sent in. PROVEN CROSS-REF. PLEASE, as don't want to run corrections.

However will have to treat this like the Hints/Kinks/Goofs column, no free-bie volume, bonus will be the cross references....

Wards GEN-719A #292, try #219 - Pres. McKinley, identical except for PLL, better description/reference component #'s are DIFFERENT, but locations the same.

SBE-30 Trinidad II #98, try #116 - Pierce Simpson Bobcat 23D, identical except for power supply.

HYGAIN-V (2705) #291, try #180 - Midland 79-892

Boman CB 770 (23 ch.), try #261 - Kris XL 70

Echo 99'er #49, try #104 - Sharp CB500UB

President AR7 and AX7 - use #286, both identical except for noise limiter sw's.

President Washington (MB-PLL) #222, try #219 - Cobra 142GTL

Cobra 21, try #62 - Pearce Simpson Tomcat 23

Cobra 29XLR, try #195 - Teaberry T-Command, similar board layout

Cobra 32XLR, try #190 - Tram D-42

Colt 900 (Midnight Special), try #202 - GTX-5000; #198 - Teaberry 'T';
#187 - Robyn T240D.

Courier Rebel 23 Plus, try #62 Pearce Simpson Tomcat 23

DAK Mark II/III, try #190 Alaron Mil. B-4075

Formac 40, try #166 Lafayette HB-740

GE3-5812A, try #148 - similar to GE3-5811B

GE3-5819A, try #147 - RCA 14T270

Globe 9001, try #106 - Nuvox CB-7000 identical

Kris Vega, try #104, Sharp CB-500UB

Midland 13-830, try #121 - Truetone CYJ4732A-77

Midland 13-883, try #56 - Cobra 29, identical

Midland 77-882, try #166 - Colt 800

Midland 77-888, try #147 RCA 14T270; #170 Midland 77-899 (ckt. brd. similar, -888 has wierd 6-pin mike plug.)

CROSS-REF. (Cont.)

Pearce Simpson Tiger Mark II, try #148 - Hygain 2680/81.

Pearce Simpson Tomcat 23B, try #95 - American Electronics 76-501/601
almost identical.

Pennys 981-6237, try #236 - Sears 934.38062700, PCB identical.

RCA 14T100, try #90 - Fulcomm Mdl. 2300

Romar CB-7000, try #106 - Nuvox CB-7000

Royce 609, try #266 - Pace 8003

Sears 23-PLL CM2378SL, try #236 - Sears 934.38062700, almost identical to
23 ch. unit.

Sears CM-2378A, try #236 - same as above, almost identical.

Sears CM-2378SA, try #236 - same as above, Identical.

.....

Got carried away, but went through my files and added all that I had to Emil's
list also. Hope this saves someone the time/expense of trying to find SAMS
for a certain unit.

.....

For 858 SSB Chassis (40 Ch., not those converted at factory from 23 to 40)!

TRY #207 - Realistic TRC-457/458, and #176 - President Adams: These two have
the most complete schematics/PCB 'stuffings' of all.

PACE 8041, (SM5118-PLL)

Tune up: Peak L6, L7, L8, L10, L13, L14. AMC Defeat - CR15.

LAKE 400 AM Mobile, (MC145106P-PLL)

If you want to try Fo modification on this unit see info on Palomar SSB-500.

UPDATES:

PACE 8155, (MM55107N-PLL); PACE 2300-C, (NPC5107-PLL)

Fo Modification is identical in both of these units:

26.325-26.685MHz, selector pos. 1-32, - open Pin 9

26.695-27.005MHz, selector pos. 5-32, - open Pin 10

GRANT-DX. UPPER Fo MOD.

Following switch modification will give 27.875-28.055MHz in the High Position, selector positions 12-27. Any present 'garbage switch' may be hard-wired, and utilized...(Try the MB or Dimmer!)...

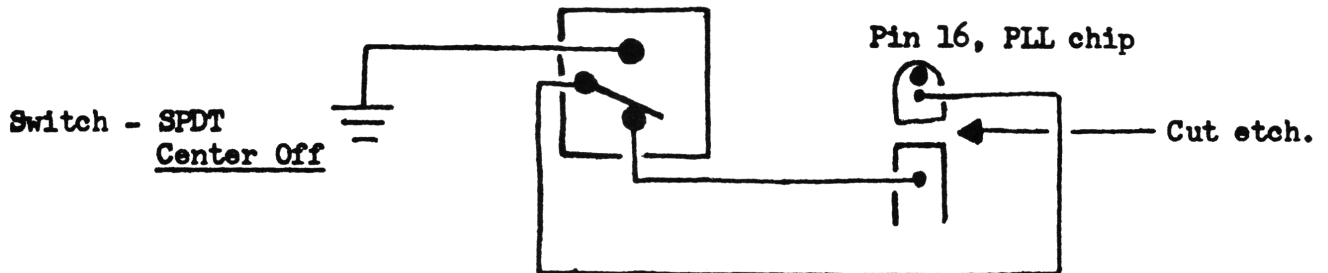
Normally OPEN position shown - Reg. Fo's.



GRANT-DX. 10KHz JUMP MOD. *or missing Freq. mod*

Following switch modification will allow you to get the "missing Fo's" by going up 10KHz. Used with above modification will have no misses, and is very simple modification.... Schematic, chart - below:

Normally DOWN position shown - Reg. Fo's.



<u>Band Sw.</u>	<u>Selector</u>	<u>Reg. Fo</u>	<u>Switch Change</u>	<u>New Fo.</u>
Low	3 ...	26.535	.... Center	26.545
	8 ...	26.605	.... Up	26.595
	11 ...	26.635	.... Center	26.645
	16 ...	26.705	.... Up	26.695
.....	19 ...	26.735	.... Center	26.745
Mid	3 ...	26.985	.... Center	26.995 (3A)
	8 ...	27.055	.... Up	27.045 (7A)
	11 ...	27.085	.... Center	27.095 (11A)
	16 ...	27.155	.... Up	27.145 (15A)
.....	19 ...	27.185	.... Center	27.195 (19A)
High	4 ...	27.455	.... Up	27.445
	7 ...	27.485	.... Center	27.495
	12 ...	27.555	.... Up	27.545
	15 ...	27.585	.... Center	27.595
.....	20 ...	27.655	.... Up	27.645
High, with..	12 ...	27.875	.... Up	27.865
above Fo	15 ...	27.905	.... Center	27.915
Mod.	20 ...	27.975	.... Up	27.965

No misses, you have them all.....

GRANT-DX, UPPER Fo Mod - Chart

This is the Selector/Fo chart for modification on preceeding page (34).

<u>Selector</u>	<u>Freq.</u>	<u>Selector</u>	<u>Freq.</u>
12.....	27.875	20.....	27.975
13.....	27.885	21.....	27.985
14.....	27.895	22.....	27.995
15.....	27.905	23.....	28.025
16.....	27.925	24.....	28.005
17.....	27.935	25.....	28.015
18.....	27.945	26.....	28.035
19.....	27.955	27.....	28.045
		28.....	28.055

* * * GRANT-DX: S P E C I A L N O T E * * *

(Ed. Note:) It has come to my attention that some distributors/dealers are charging 'extra' for the Slide kit. GRANT COMES WITH THE SLIDE KIT. If you have been charged extra for it; I suggest you change distributor or dealer; which ever got to you. (A charge for kit installation into a unit, I can see!)....

GRANT-DX, - SLIDE

"Quotes": "It's a shame, but the clarifier circuit flat stinks!"

"What a waste; ruined a good unit; with lousy clarifier design!"

"Couldn't believe it, the designer must be in the dark ages!"

Well, that's just a few.... Had plenty, but just wanted to let you know that you're not alone.

Have come up with a different modification than the kit. Incorporates about 3 different modifications sent in, with some extra pointers. Don't have a unit to try it on ----- so want 'feedback' for Vol. 20!!

USE AMPLIFIED LAYOUT ON PAGE 36, ALL CHANGES MARKED ON IT...REFERENCE!

1. Remove D-40, D-44, D-45; clean out all holes. (Put D40 and D44 in the 'goodie' box as might have future use for.)
2. Trace outer wires on the Clarifier pot to PCB, remove both.
3. Solder the BLUE wire directly to PCB, D.C. Ground etch!
4. Solder the GRAY wire to 8.4VDC source; Zener Diode D-63.
5. ~~Remove R-158 (15K), replace with 1K 1/4W 5%.~~
6. Using the diagram on page 36... solder the 220Mfd electrolytic capacitor that came with kit into the indicated holes that were cleaned out, (sleeve leads if necessary).
7. Use 'solid' piece of insulated wire and solder at Pt. A only at this time.
8. Install - don't solder yet a 'Super Diode' in the holes where D-40 was.
9. 'Cut to length-shortest' the wire in step 7 and install in Pt. B, will have both the wire and 'Super Diode' in same hole. Now solder both and other end of diode.
10. Slide is now finished, should have approximately ? of slide.
11. If more is needed, unsolder the 'Super Diode' at Pt. C, and install in series. one of the chokes that came with kit.

GRANT-DX. SLIDE (Cont.):

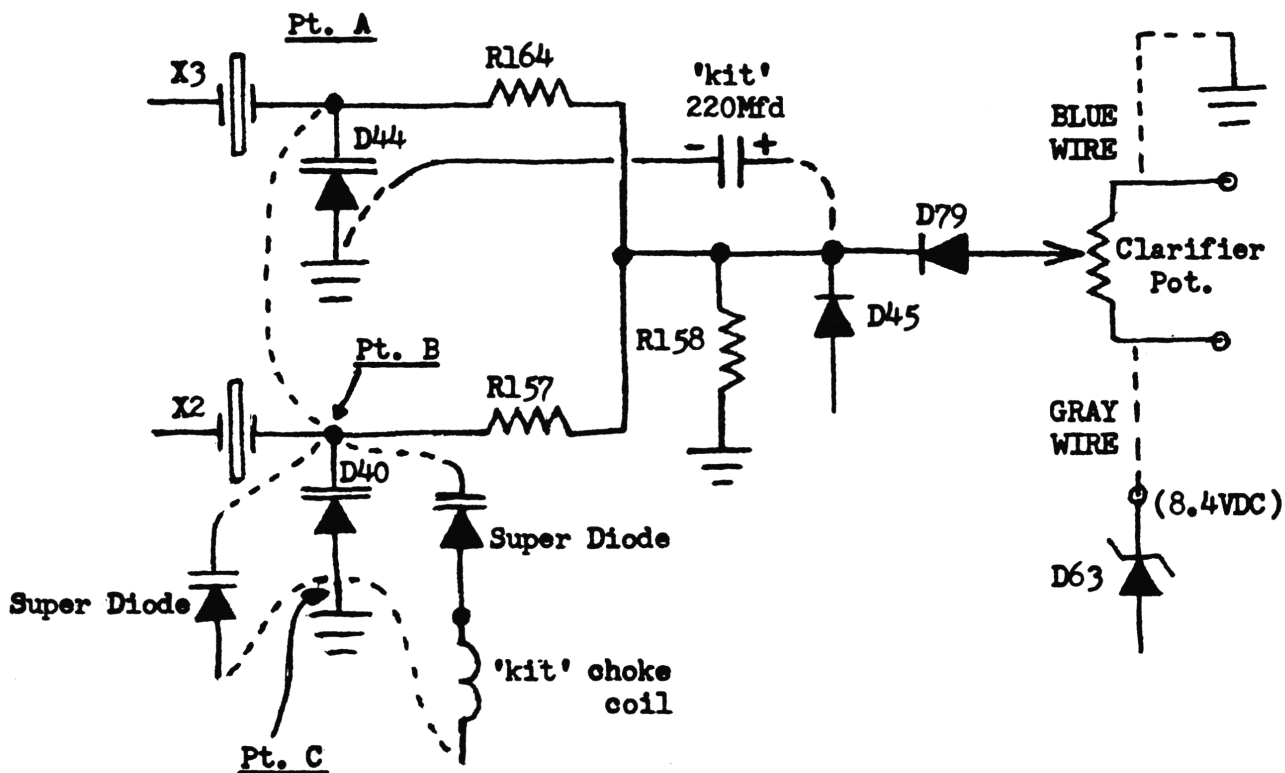
12. Slide may be individually adjusted by the following:

LOW BAND: AM/FM - L22
USB - L23
LSB - L24

MID & HIGH BAND: AM/FM - L25
USB - L26
LSB - L27

OVERALL BANDS: AM/FM - L28
USB - L29
LSB - L30

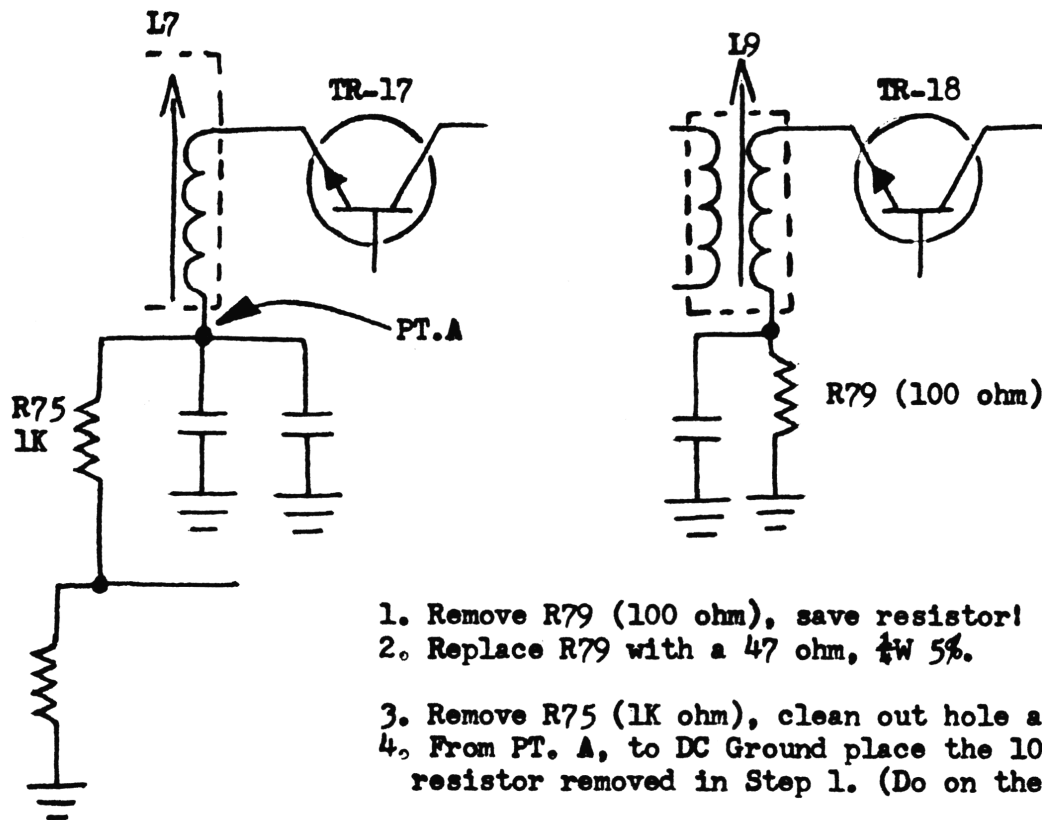
----- SLIDE - REFERENCE -----



Additional Grant adjustments: SSB Power - VR12 AM Power - VR13
AM Modul. - VR14 TX Mtr. - VR8
Final Bias - VR9 & VR10 Driver Bias - VR11
FM Deviation - VR5 AM/FM Sq. Rng - VR4
SSB Sq Rng. - VR3 Bal. Modulator - VR7
AM/FM S Mtr. - VR1 SSB S Mtr. - VR2
(VR6, was permanently disabled in modification)

Note: Performance reports on units are good, will 'fry' a linear if power is not turned down. "Double-check" all power transistors for mica insulators, as Uniden 'standard practice' is the thick white plastic type. CHANGE IF NEEDED.... Have heard of no major problem on these units to date; just the usual—stuff; 'hook-up backwards, etc.'

"2 of Radio Shack's Regulated 12V Power Supplies in parallel; will work when using as a Base."



SERVICE TIPS

"EXPORT", CYBERNET 02A-PLL AM/FM/SSB CHASSIS

by B.W.

ALL UNITS THAT HAVE THE 2SC1969: CHANGE FINAL!.....Specified to SCB

long before Vol. 3 even came into being that this transistor is no-good!

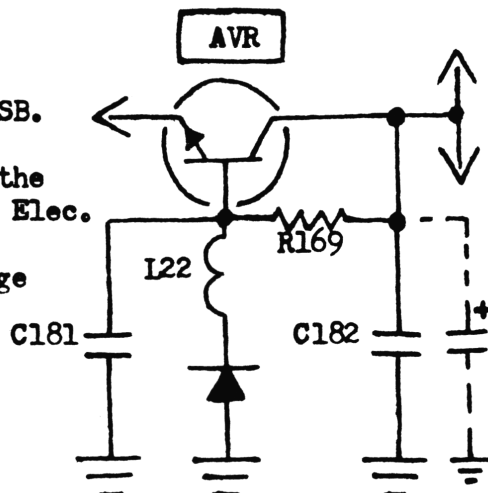
Replace with 2SC1307; adjust bias for 15ma; maximum.

The other big problem is in the AVR, (check your schematics for the right transistor, as is different marking in some chassis..) General Layout below.

Problem: Scratchy TX in SSB.

Cure: Add C184 if not in the circuit. (470Mfd/16V Elec. Capacitor.

If problems persist: change the present Xstr to a 2SD839..



Note: in most units this is Q36, and a 2SD837 or 2SD1192 is usual transistor.

C184; ADD-470Mfd/16VDC, if not in unit. Observe correct polarity!

"GEORGE FREQUENCY CODES"

Frequency Button Selector

26.085	Red	11
26.105	Red	12
26.115	Red	13
26.125	Red	14
26.135	Red	15
26.155	Red	16
26.165	Red	17
26.175	Red	18
26.185	Red	19
26.205	Red	20
26.215	Red	21
26.225	Red	22
26.235	Red	24
26.245	Red	25
26.255	Red	23
26.265	Red	26
26.275	Red	27
26.285	Red	28
26.295	Red	29
26.305	Red	30
26.315	Red	31
26.325	Red	32
26.335	Red	33
26.345	Red	34
26.355	Red	35
26.365	Red	36
26.375	Red	37
26.385	Red	38
26.395	Red	39
26.405	Red	40
26.455	Red-Ylw	8
26.465	Red-Ylw	9
26.475	Red-Ylw	10
26.485	Red-Ylw	11
26.505	Red-Ylw	12
26.515	Red-Ylw	13
26.525	Red-Ylw	14
26.535	Red-Ylw	15
26.555	Red-Ylw	16
26.565	Red-Ylw	17
26.575	Red-Ylw	18
26.585	Red-Ylw	19
26.605	Red-Ylw	20
26.615	Red-Ylw	21
26.625	Red-Ylw	22
26.635	Red-Ylw	24
26.645	Red-Ylw	25
26.655	Red-Ylw	23
26.665	Red-Ylw	26
26.675	Red-Ylw	27
26.685	Red-Ylw	28
26.695	Red-Ylw	29
26.705	Red-Ylw	30
26.715	Red-Ylw	31
26.725	Red-Ylw	32
26.735	Red-Ylw	33
26.745	Red-Ylw	34
26.755	Red-Ylw	35
26.765	Red-Ylw	36

Frequency Button Selector

26.775	Red-Ylw	37
26.785	Red-Ylw	38
26.795	Red-Ylw	39
26.805	Red-Ylw	40
26.855	Red-Grn	8
26.865	Red-Grn	9
26.875	Red-Grn	10
26.885	Red-Grn	11
26.905	Red-Grn	12
26.915	Red-Grn	13
26.925	Red-Grn	14
26.935	Red-Grn	15
26.955	Red-Grn	16
26.965	None-Reg.Ch.	1
26.975	None-Reg.Ch.	2
26.985	None-Reg.Ch.	3
27.005	None-Reg.Ch.	4
27.015	None-Reg.Ch.	5
27.025	None-Reg.Ch.	6
27.035	None-Reg.Ch.	7
27.045	Red-Grn	25
27.055	None-Reg.Ch.	8
27.065	None-Reg.Ch.	9
27.075	None-Reg.Ch.	10
27.085	None-Reg.Ch.	11
27.105	None-Reg.Ch.	12
27.115	None-Reg.Ch.	13
27.125	None-Reg.Ch.	14
27.135	None-Reg.Ch.	15
27.155	None-Reg.Ch.	16
27.165	None-Reg.Ch.	17
27.175	None-Reg.Ch.	18
27.185	None-Reg.Ch.	19
27.205	None-Reg.Ch.	20
27.215	None-Reg.Ch.	21
27.225	None-Reg.Ch.	22
27.235	None-Reg.Ch.	24
27.245	None-Reg.Ch.	25
27.255	None-Reg.Ch.	23
27.265	None-Reg.Ch.	26
27.275	None-Reg.Ch.	27
27.285	None-Reg.Ch.	28
27.295	None-Reg.Ch.	29
27.305	None-Reg.Ch.	30
27.315	None-Reg.Ch.	31
27.325	None-Reg.Ch.	32
27.335	None-Reg.Ch.	33
27.345	None-Reg.Ch.	34
27.355	None-Reg.Ch.	35
27.365	None-Reg.Ch.	36
27.375	None-Reg.Ch.	37
27.385	None-Reg.Ch.	38
27.395	None-Reg.Ch.	39
27.405	None-Reg.Ch.	40
27.455	Ylw	8
27.465	Ylw	9
27.475	Ylw	10
27.485	Ylw	11

Frequency Button Selec

27.505	Ylw	12
27.515	Ylw	13
27.525	Ylw	14
27.535	Ylw	15
27.555	Ylw	16
27.565	Ylw	17
27.575	Ylw	18
27.585	Ylw	19
27.605	Ylw	20
27.615	Ylw	21
27.625	Ylw	22
27.635	Ylw	24
27.645	Ylw	25
27.655	Ylw	23
27.665	Ylw	26
27.675	Ylw	27
27.685	Ylw	28
27.695	Ylw	29
27.705	Ylw	30
27.715	Ylw	31
27.725	Ylw	32
27.735	Ylw	33
27.745	Ylw	34
27.755	Ylw	35
27.765	Ylw	36
27.775	Ylw	37
27.785	Ylw	38
27.795	Ylw	39
27.805	Ylw	40
27.855	Grn	8
27.865	Grn	9
27.875	Grn	10
27.885	Grn	11
27.905	Grn	12
27.915	Grn	13
27.925	Grn	14
27.935	Grn	15
27.955	Grn	16
27.965	Grn	17
27.975	Grn	18
27.985	Grn	19
28.005	Grn	20
28.015	Grn	21
28.025	Grn	22
28.035	Grn	24
28.045	Grn	25
28.055	Blu-Red	8
28.065	Blu-Red	9
28.075	Blu-Red	10
28.085	Blu-Red	11
28.105	Blu-Red	12
28.115	Blu-Red	13
28.125	Blu-Red	14
28.135	Blu-Red	15
28.155	Blu-Red	16
28.165	Blu-Red	17
28.175	Blu-Red	18
28.185	Blu-Red	19

Frequency	Button	Selector	Frequency	Button	Selector	Frequency	Button	Selector
28.205	Blu-Red	20	28.645	Blu-Red-Ylw	25	29.075	Blu	10
28.215	Blu-Red	21	28.655	Blu-Red-Ylw	23	29.085	Blu	11
28.225	Blu-Red	22	28.665	Blu-Red-Ylw	26	29.105	Blu	12
28.235	Blu-Red	24	28.675	Blu-Red-Ylw	27	29.115	Blu	13
28.245	Blu-Red	25	28.685	Blu-Red-Ylw	28	29.125	Blu	14
28.255	Blu-Red	23	28.695	Blu-Red-Ylw	29	29.135	Blu	15
28.265	Blu-Red	26	28.705	Blu-Red-Ylw	30	29.155	Blu	16
28.275	Blu-Red	27	28.715	Blu-Red-Ylw	31	29.165	Blu	17
28.285	Blu-Red	28	28.725	Blu-Red-Ylw	32	29.175	Blu	18
28.295	Blu-Red	29	28.735	Blu-Red-Ylw	33	29.185	Blu	19
28.305	Blu-Red	30	28.745	Blu-Red-Ylw	34	29.205	Blu	20
28.315	Blu-Red	31	28.755	Blu-Red-Ylw	35	29.215	Blu	21
28.325	Blu-Red	32	28.765	Blu-Red-Ylw	36	29.225	Blu	22
28.335	Blu-Red	33	28.775	Blu-Red-Ylw	37	29.235	Blu	24
28.345	Blu-Red	34	28.785	Blu-Red-Ylw	38	29.245	Blu	25
28.355	Blu-Red	35	28.795	Blu-Red-Ylw	39	29.255	Blu	23
28.365	Blu-Red	36	28.805	Blu-Red-Ylw	40	29.265	Blu	26
28.375	Blu-Red	37	28.855	Blu-Red-Grn	8	29.275	Blu	27
28.385	Blu-Red	38	28.865	Blu-Red-Grn	9	29.285	Blu	28
28.395	Blu-Red	39	28.875	Blu-Red-Grn	10	29.295	Blu	29
28.405	Blu-Red	40	28.885	Blu-Red-Grn	11	29.305	Blu	30
28.455	Blu-Red-Ylw	8	28.905	Blu-Red-Grn	12	29.315	Blu	31
28.465	Blu-Red-Ylw	9	28.915	Blu-Red-Grn	13	29.325	Blu	32
28.475	Blu-Red-Ylw	10	28.925	Blu-Red-Grn	14	29.335	Blu	33
28.485	Blu-Red-Ylw	11	28.935	Blu-Red-Grn	15	29.345	Blu	34
28.505	Blu-Red-Ylw	12	28.955	Blu-Red-Grn	16	29.355	Blu	35
28.515	Blu-Red-Ylw	13	28.965	Blu-Red-Grn	17	29.365	Blu	36
28.525	Blu-Red-Ylw	14	28.975	Blu-Red-Grn	18	29.375	Blu	37
28.535	Blu-Red-Ylw	15	28.985	Blu-Red-Grn	19	29.385	Blu	38
28.555	Blu-Red-Ylw	16	29.005	Blu-Red-Grn	20	29.395	Blu	39
28.565	Blu-Red-Ylw	17	29.015	Blu-Red-Grn	21	29.405	Blu	40
28.575	Blu-Red-Ylw	18	29.025	Blu-Red-Grn	22			
28.585	Blu-Red-Ylw	19	29.035	Blu-Red-Grn	24			
28.605	Blu-Red-Ylw	20	29.045	Blu-Red-Grn	25			
28.615	Blu-Red-Ylw	21	29.055	Blu	8			
28.625	Blu-Red-Ylw	22	29.065	Blu	9			
28.635	Blu-Red-Ylw	24						

Codes
 Blu ----- Blue
 Grn ----- Green
 Red ----- Red
 Ylw ----- Yellow

Had a guy show up with rig for mike circuit modification; (RE: Vol. 9-Realistic 21-1175.) When I pulled the covers off; saw strictly 'CUSTOM'; neat/clean-all old wiring to switches permanently hard-wired. Unit had a lot of broad-banded coils, a VCO modification, RF Pre-Amp, and 12KHz slide. Customer said that builder 're-worked' a Zebra Mod. to keep right on going, and spent more time experimenting on this particular chassis than any he has ever done.

Copied down the additional frequencies, and added to the old Zebra Chart, as identical codes/selector/frequencies through 28.045MHz. George is the builder! If I counted correctly there is 279 channels in unit. Power vs. Fo below:
 26.085 AM-2.8 SSB-8.5; 26.405 AM-3.6 SSB-11.2; 26.965 AM-4.6 SSB-12.5;
 27.855 AM-4.8 SSB-12.8; 28.405 AM-4.9 SSB-13.0; 29.055 AM-4.0 SSB-12.0;
 29.405 AM-3.2 SSB-10.7. Power started to drop the last 200KHz on the ends of the band. (I did notice that the RF Gain was reversed operation and ON/OFF Volume pot utilized for the 'extra switch'). By the way unit was TRC-449!

COBRA 29GTL - SLIDE (UPDATE)

RE: Vol. 13, pg. 57; How to add slide to your Cobra 29GTL.

Recenter the Delta Tune after Mod:

1. Turn Channel Selector to Channel 20.
2. Turn Delta Tune to Center (Ident).
3. Adjust L24 for 27.205MHz.
(Test unit gave -5KHz, +6KHz slide)
*Special Note: I left C131 in circuit, as it gave a smoother slide this way. (This was step 6, in original article).
4. With this alignment of L24, have even 'channels' on both sides of regular channels.

For -10KHz Slide and NO up slide:

1. Turn Channel Selector to Channel 20.
2. Turn Delta Tune FULLY CLOCKWISE..
3. Adjust L24 for 27.205MHz.
(Test unit gave a full -10KHz slide)
*Again, C131 was left in the circuit.

This last slide arrangement allows a full 'channel' of slide in the down range....Kit 89-1, is the correct unit for installation as will allow: 26.505-27.855MHz coverage, 136 channels-ODD/134 channels-EVEN. IF, the -10KHz slide arrangement installed..

Kit 89-1, available: Selman Enterprises...

UNIDEN PC33 (TC9106BP-PLL)

Had to buy some 'cheap' radio's for customer, so thought I would give these a shot. That way could do a write-up on them at the same time.

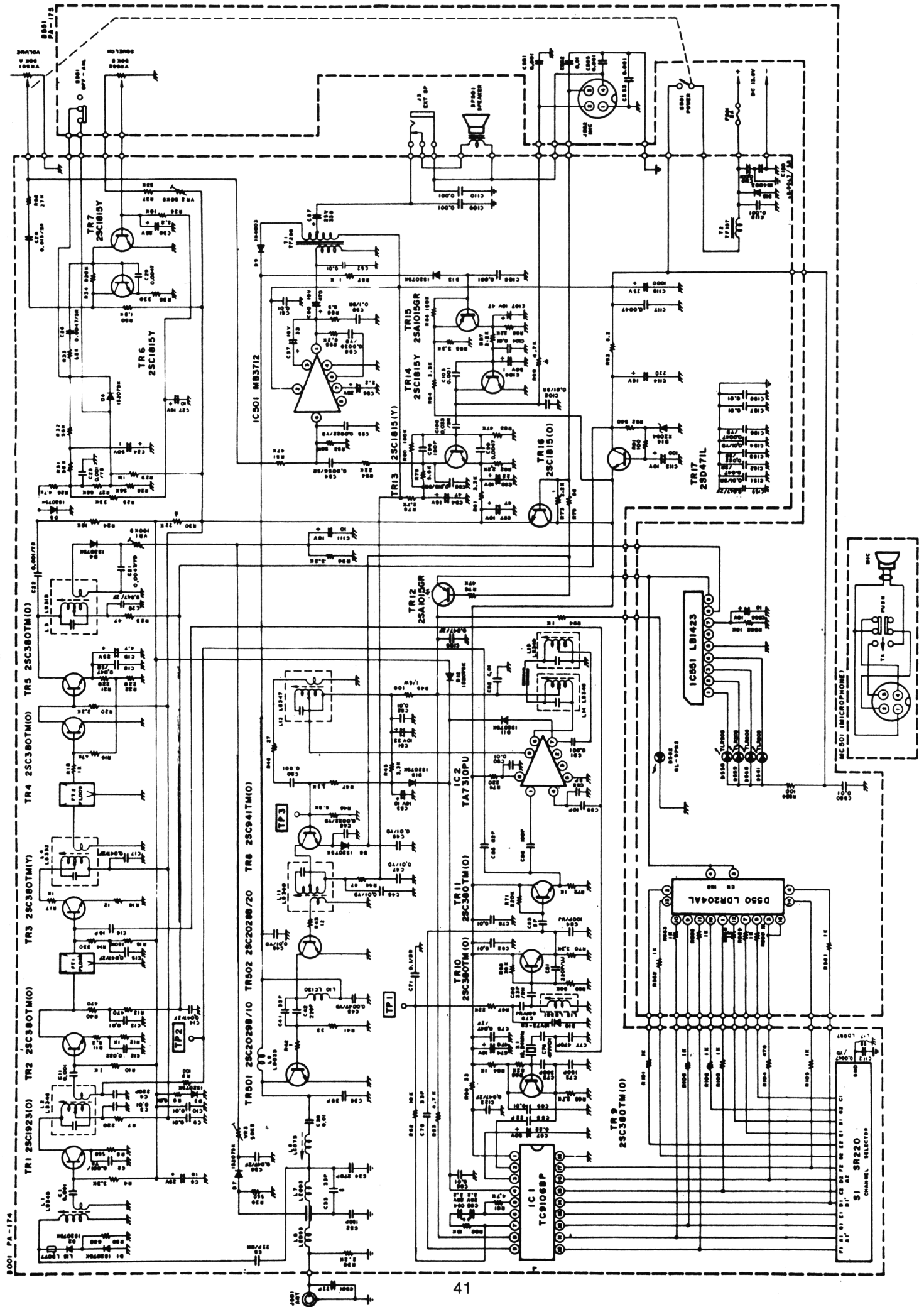
Out-of-box; 3.5W, 50%+ modulation, REJECTION-??? (I live about $\frac{1}{2}$ mile from truck stop and that is my gauge of rejection-Ch. 19 was coming in on Ch. 26. Even a high-powered signal shouldn't do that!).

Couldn't sell to customer like that; so had 2 of my 'loaners' back for his use; and he took off for Florida. In the meantime, I wrote to Uniden for Schematic (NONE in the Owner's Manual?). One month and two letters later I received the schematic, finally! Service used to be one of main reasons for purchase from them!

No problems with 're-engineering' the units. In fact for about 8¢ per unit they should have, during production runs!

Rejection - See Vol. 16, Page 40. 'Bleed-Over Filter'..Perfect, and works like a champ. Modulation - Remove D13 (Don't use amplified microphone afterwards). Insert a slug in L10; first put a piece of rubber band in core; to prevent slug from falling to bottom (odd size).

Tune for PEAK POWER: L15, L14, L12, L11, L10, and L8. Adjust VR3 for 2 lights ON-Dead Key, 3 ON with 4th flickering when talking. (This way if all 4 come ON when dead-keying; acts as SWR meter; and something's wrong!). Had to increase value of VR3 in one unit. RX alignment: L1, L2, L4, L5. VR1-S 'lights', VR2-Sq Rng. Both units averaged out 4.7W - Deadkey, with 100% modulation.



SPECIFIC TUNEUPS

NEW '84 - REALISTIC TRC-412 (21-1506), 40 Ch. "Emergency" Mobile; LC7131-PLL
Big improvement on unit; is now a hand-full; with 'push-to-talk' on the side.
(Only good if you are right-handed!) Discriminating against the—LEFTY's again!
Adjustments: RV1-AMC, RV2-Sq Rng...Rx Tune: T5, T6, T7, T8, T9...

Tx Tune: T2, T3, T4, L7...

If modulation can't be brought up by adjusting, remove Q6.

For noise improvement, increase value of C22.(Note polarity, + at DC Gnd.)

NEW '84 - REALISTIC TRC-414 (21-1508), 40 Ch. AM Mobile; LC7131-PLL
NO METER, has L.E.D. Light; Instant channel 9 or 19; PA/CB/MON select.
Shiny front cover, a dull chrome.

Adjustments: VR2-Sq Rng, VR5-Rx Light adjust, VR6-Tx Light adjust.

Rx Tune: T1, T2, T3, T4, T5, T6, T7.

Tx Tune: T12, T13, L3, L6.

No AMC adjustment in unit, if too low - change R84 to a variable and adjust or remove from circuit completely. (NOTE: Will have to change VR6 to 50K).
To increase power—check R109, if 8 ohms or higher, change to a lower value.
Change C32 to a higher value for noise improvement. (+ to DC Gnd!)

REALISTIC TRC-83 (21-1605), 1W/3 Ch. Walkie-Talkie..

VR3 - Sq Range; RX Adj: T1, T2, T3, T4, T5, T6. TX Adj: T9, T10, T11, L3.

R51 may be changed to lower value for higher output. (Spec. is 700mW max!)

REALISTIC TRC-206 (21-1635 and 21-1635/9206), 3W/3 Ch. Walkie-Talkie..

The only difference between the two versions is an external power jack on the '9206'... VR3-Sq Rng. RX Adj: L1, L2, T1, T2, T3. TX Adj: L4, L6, L8, L10.
R48, may be changed to lower value for higher output. (Spec. is 1.2-1.8W max!)
*D9, may be removed for higher modulation...

EVERSONIC M41 DK-222: (23 Ch. Mobile) TX peak for max forward mod: L11, L13, L15, L16. VT2-Sq Rng, VT3-AMC, VT4-RF Meter, VT5-S Meter.

KRACO KCB-1401: (23 Ch. Mobile) TX peak for max forward mod: L11, L10, L9. VR2-TX Mtr, VR3-RX Mtr, VR5-Sq Rng, VR7-AMC, VR8-RF Gain.

J.C. Penry 981-6235 (23 Ch. Base)-PINTO. R19-RF Gain, R116-TX Meter, R32-RX Meter, R33-Sq Rng, AMC Defeat-remove D15.

PAGE 8025 & CB166: R207-AMC, R156-Sq Rng, R413-TX Meter, R155-RX Meter.

MIDLAND 13-867: (23 Ch. Mobile) TX peak for max forward mod: L12, L13, L1, L4. VR1-TX Meter, VR2-S Meter, VR3-Sq Range, VR4-RF Gain(Note in some units labeled VR5). AMC defeat-remove D14; not marked on PCB-located near marking for TR19, which isn't on the PCB, between the Antenna conn. and PA Jack.

PEARCE-SIMPSON JAGUAR 40B: TX peak for max forward mod: L26, L25. VR3-AMC

LAFAYETTE MICRO 723: RV101-RX Mtr, RV102-TX Mtr, RV103-Sq Rng, AMC defeat-D107

JOHNSON 132: Modulation Limiter is CR11

--- CORRECTION ---

RE: Vol. 7, page 46. Alignment-paragraph 3. "Cut R43 for more ANL range - this will give you 200% improvement on your noise blanker." DELETE ALL.
ADD—Increase value of R43, don't go too high as will affect audio output.
Start with 1.5M ohm...

CORRECTION
COMPLETED
16 Oct 84

SPECIAL NOTE: This chart can be utilized on most 02A-PLL AM/FM, 'EXPORTS' after modification.

ALPHA FREQUENCY CODE CHART

LOW BAND		MID BAND		HI BAND	
<u>Selector</u>	<u>Frequency</u>	<u>Selector</u>	<u>Frequency</u>	<u>Selector</u>	<u>Frequency</u>
1	25.685MHz	41	26.135MHz	1	26.585MHz
2....	25.695	42....	26.145	2....	26.595
3	25.705	43	26.155	3	26.605
4....	25.725	44....	26.175	4....	26.625
5	25.735	45	26.185	5	26.635
6....	25.745	46....	26.195	6....	26.645
7	25.755	47	26.205	7	26.655
8....	25.775	48....	26.225	8....	26.675
9	25.785	49	26.235	9	26.685
10....	25.795	50....	26.245	10....	26.695
11	25.805	51	26.255	11	26.705
12....	25.825	52....	26.275	12....	26.725
13	25.835	53	26.285	13	26.735
14....	25.845	54....	26.295	14....	26.745
15	25.855	55	26.305	15	26.755
16....	25.875	56....	26.325	16....	26.775
17	25.885	57	26.335	17	26.785
18....	25.895	58....	26.345	18....	26.795
19	25.905	59	26.355	19	26.805
20....	25.925	60....	26.375	20....	26.825
21	25.935	61	26.385	21	26.835
22....	25.945	62....	26.395	22....	26.845
24	25.955	64	26.405	24	26.855
25....	25.965	65....	26.415	25....	26.865
23	25.975	63	26.425	23	26.875
26....	25.985	66....	26.435	26....	26.885
27	25.995	67	26.445	27	26.895
28....	26.005	68....	26.455	28....	26.905
29	26.015	69	26.465	29	26.915
30....	26.025	70....	26.475	30....	26.925
31	26.035	71	26.485	31	26.935
32....	26.045	72....	26.495	32....	26.945
33	26.055	73	26.505	33	26.955
34....	26.065	74....	26.515	34....	26.965
35	26.075	75	26.525	35	26.975
36....	26.085	76....	26.535	36....	26.985
37	26.095	77	26.545	37	26.995
38....	26.105	78....	26.555	38....	27.005
39	26.115	79	26.565	39	27.015
40....	26.125	80....	26.575	40....	27.025

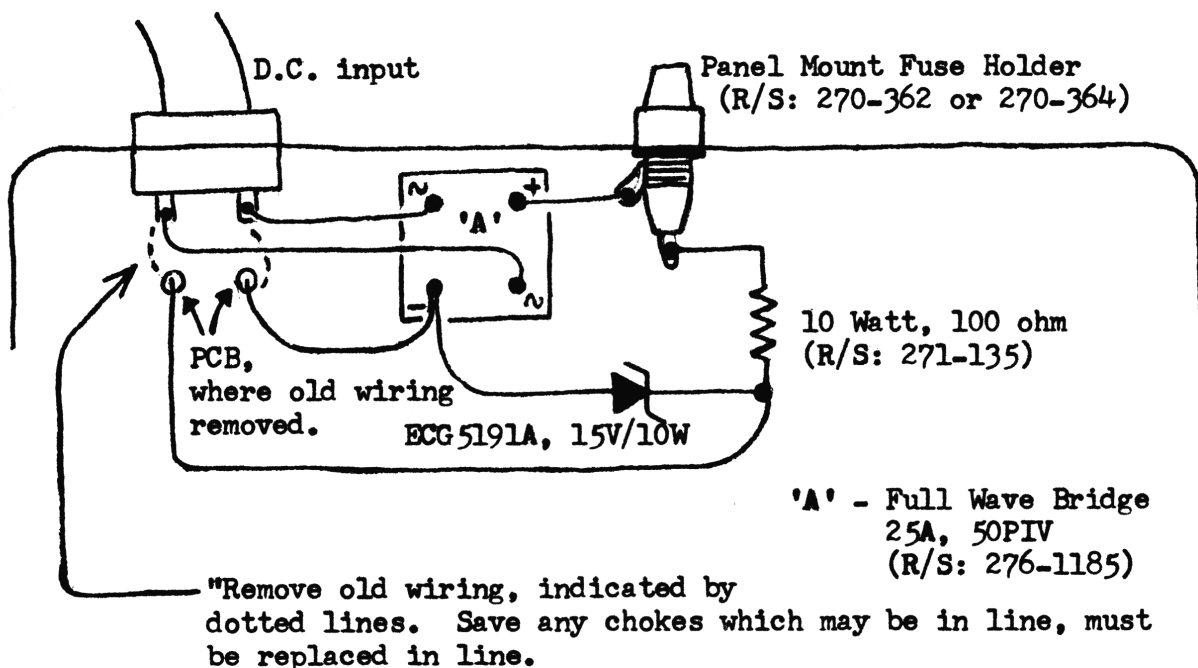
These frequencies are found in addition to the regular 26.965-28.305MHz.

Utilized mostly in the Major M-120, and Marko CB-444.

POLARITY PROTECTOR and OVER-VOLTAGE PROTECTION

RE: Vol. 11, page 60 (Polarity Protector).

Have modified this somewhat by adding over-voltage protection. Had a rash of Trucker's bringing in radios this winter that have been 'Smoked'. All claimed that the correct fuse was in line and did nothing! The truck's electrical system went hay-wire and put out too much voltage! Modified the input to PCB on the units as illustrated below; all components mounted on inside of unit; rear of chassis! Radio Shack has all parts, with exception of Zener Diode...



Use heat sink compound on bridge. All mounting of components done on the inside rear of chassis - if possible. (Be careful when drilling holes, check for metal shaving falling onto the PCB.)

Theory: Hook-up of external wiring will make no difference as to polarity! WITH REGULAR FUSE RATING FOR THE UNIT, any voltage over 15VDC will cause excess current to flow thru the Zener and blow the fuse.

I don't like to put information on equipment other than commo in book. BUT, also don't like to see people miss out on a good chance to pick up a cordless phone dirt cheap!

R/S Service Center prices to repair these units; is forcing them to buy new; and dump the old ones for junk prices!

Of the 10+ units have repaired, all but one had problem in the handset: Wire busted on the contacts that allow charging; Dead Ni-Cads (easy to spot, as usually corroded around the vent - take out and recharge separately on charger); D105 open (usually caused by a dead Ni-Cad).

Repairing: Replacing Ni-Cads, DO NOT SOLDER OVER THE VENT HOLE!

When recharging those in a unit, let sit after charging up for a day or two - then check for charge (Always check for current-not voltage-using at least a 10A meter).

Radio Shack 'AA' Ni-Cads are O.K., for direct replacement; but charge up before installing.

D105 (located to left of the socket; connector can be pulled off for access. Use 1N4148 for direct replacement ONLY!

Wire busted on the movable contacts is the other problem.

(Note: the main unit should have 8.8VDC at the contacts, when the disconnect button is down.

Only other problem to occur was cable from unit to phone line open.

My opinion on these Cordless Phones isn't too good. Security wise another handset can be used for eavesdropping/using your line, etc.

SUPERSTAR 95 - LOW Fo MOD

As this unit is strictly AM, and the upper 40 are in the SSB band, have a useless 40 channels. By doing the following can have 26.065-27.405MHz coverage, and utilize the additional 40 on the low

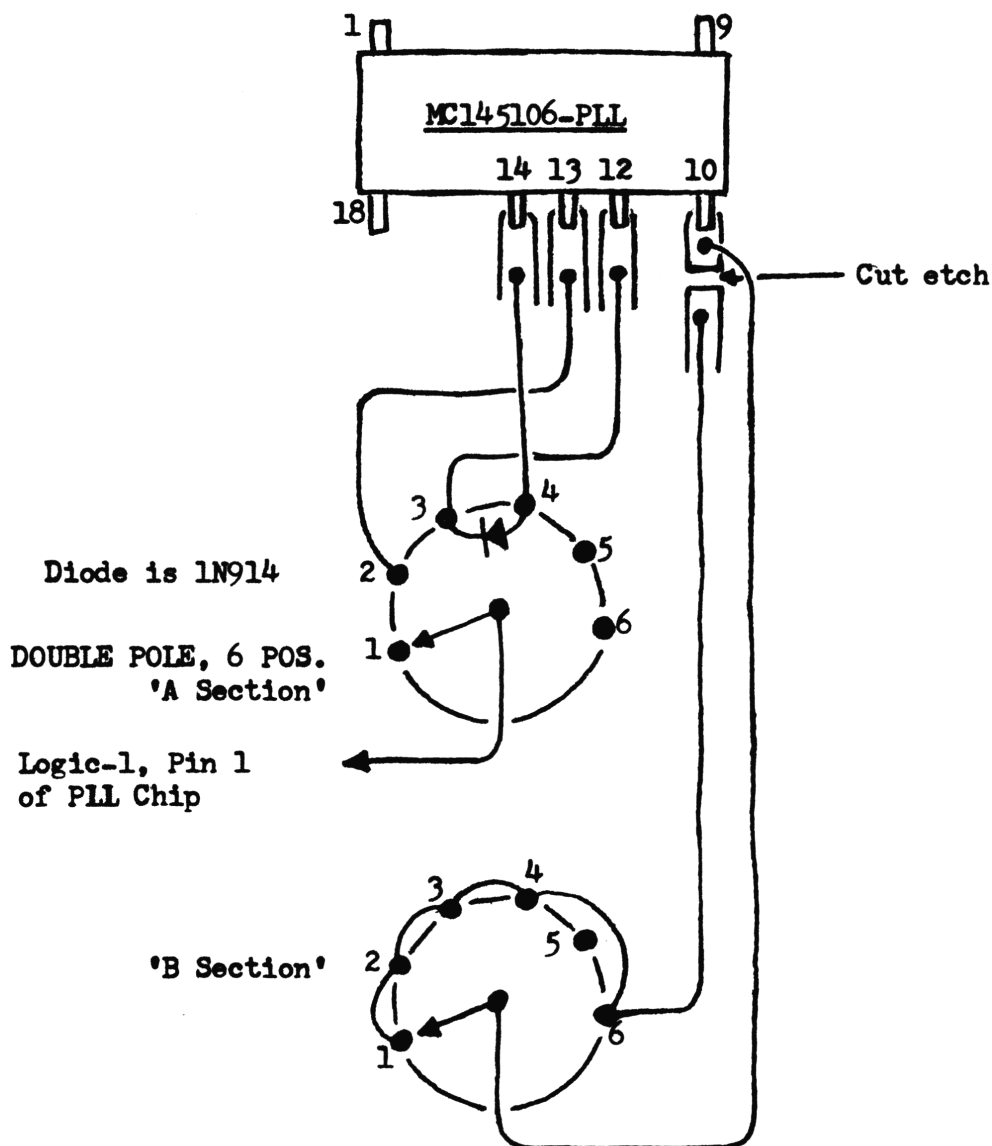
- side:
1. Remove the 15.81 Xtal, put in 'goodie box'.
 2. Remove the 15.36 Xtal, put in where the 15.81 removed.
 3. Remove the 14.91 Xtal, put in where the 15.36 removed.
 4. Obtain 14.46 Xtal, and install where the 14.91 was.

Slight adjustment of L1, L7, L8, L9, may be necessary, in the PLL/Mixer circuits. Also will have to retune the TX and RX circuitry.

All above is only feasible if you can obtain the unit, and cheaply!

148GTL-DX (LATE)
Rotary Switch Modification

Below is modification I use on the 148-DX; it allows a frequency coverage of: 25.745-28.245MHz.



Pos. 1 - Range Switch Lo/Med/Hi; original frequencies.

Pos. 2 - Range Switch Hi; 27.865-27.925MHz, selector pos. 23-31

Pos. 3 - Range Switch Hi; 27.935-28.175MHz, selector pos. 17-40

Pos. 4 - Range Switch Hi; 28.185-28.245MHz, selector pos. 33-40

Pos. 5 - Range Switch Hi; 26.135-26.575MHz, selector pos. 1-40

Range Switch Mid; 25.745-26.125MHz, selector pos. 6-40

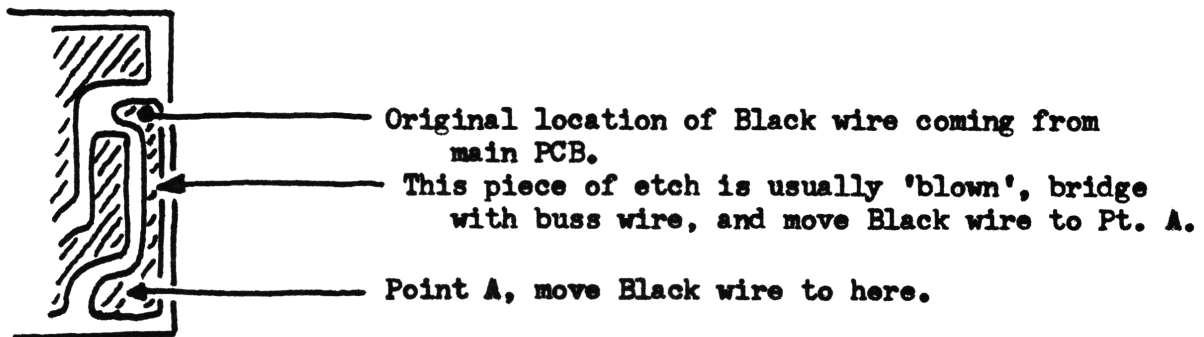
Pos. 6 - Same as Position 1

TRC-210: Cronic Problem

The popularity of this unit with the Trucker's is immense, and so is the hooking up backwards of external power connections. If a fuse over 1.5 Amps is used, the diode won't always 'Blow It'...

Due to design/assembly of unit the D.C. Ground 'feedback' is on an isolated thin piece of etch and 'Fries' it! Repair is simple, with a piece of Buss Wire and moving the Ground Wire. If a unit comes in just move the wire, as will not require complete dis-assembly if you are careful. The small PCB board directly behind the charge/ext. power jack is where modification is done: See drawing below....

Small PCB viewed from bottom of unit.....



Make sure that a 1.5 Amp 'Fast Blow' is used in External line!

HOW TO ORDER CRYSTALS

When ordering from crystal manufacturers order by using the following:

HC18/U - will be cased with solder leads

HC25/U - will be cased for plugging into sockets (Plug in Xtal).

Accuracy - should be .005% or better

Load Capacitance - 32pf for A.M.

20pf for S.S.B.

Usually can be ordered from any of the large crystal manufacturers at an average price of \$7 each. (Plus postage/handling)..

*CHECK SELMAN ENTERPRISES FIRST: we do have a stock of crystals on hand; not that large a selection; but will cut down on your bench time if we do have your needs. We also special order all types & frequencies.

TRISTAR 747

ALIGNMENT PROCEEDURE FOR PCB# PTBM121D4X

MAY BE UTILIZED ALSO ON: COLT 320FM; HAM INTERNATIONAL CONCORDE II; AND
HYGAIN V (EXPORT).

VCO & Frequency adjustment:

10.240MHz adjustment - measure at TP2, adjust CT1.

10.535MHz adjustment - measure at TP3, peak point is T1 (AM)

20.105MHz adjustment - measure at TP3, adjust CT2 (USB); +50Hz.

20.1035MHz adjustment - measure at TP3, adjust CT3 (LSB); +50Hz.

(Set in RX condition and check Fo shift for +800Hz in SSB mode using clarifier)....

10.695MHz adjustment - measure at TP5, adjust CT4 (USB); CT5 (LSB);
for 10.695MHz....+50Hz.

SPECIAL NOTE: UNITS WITH AN S METER WHOSE VALUE OF MEASUREMENT
IS OVER 1.5. Adjust USB for 10.695MHz, +100Hz.
 Adjust LSB for 10.692MHz, -100Hz.

VCO Voltage adjustment - measure at TP1, adjust coil for 3.6VDC,
+0.1VDC at Ch. 1.

Transmitter & 38MHz RF adjustment:

Set the following: 2.4KHz, 10mV to Mike Input.

T6 - $\frac{1}{2}$ turn up

L8 - $1\frac{1}{2}$ turns up

L14 - 1 turn up

RV2, RV4 - fully clockwise

38MHz RF adjustment - adjust Mike Input signal to obtain 1W of Output
power in USB mode.

Tune T1 for max power at mid Fo.

*Tune T2 for max power at unit's highest Fo.

*Tune T3 for max power at unit's lowest Fo.

*(Repeat above till no further power can be obtained)

11MHz & 27MHz adjustment - LEAVE MIKE INPUT AS SET..

Tune T7 for max power at mid Fo.

*Tune T4 for max power at unit's highest Fo.

*Tune T5 for max power at unit's lowest Fo.

*(Repeat until no further power increase)

TRISTAR 747 ALIGNMENT (Cont.)

Transmitter & 38MHz adjustments (Cont.)

T6, L8, L12, L14, adjustment - LEAVE MIKE INPUT AS SET

Turn RV4 for max power

RV12 to fully clockwise

Peak T6, L8, and L12 for maximum power
across entire Fo band - linear output

*Turn L14 down to obtain at least 78V P-P
output.

*(Recheck this adjustment in AM mode to make
sure no oscillations occur, may have to adjust
down about $\frac{1}{2}$ turn.)

Carrier Leak adjustment - NO MIKE INPUT, adjust in LSB mode.

Turn RV5 and RV6 alternately a few times
to obtain minimum output power.

(Mike input/No Mike input should be at
least 40db difference when adjusted correctly).

SSB Output Power adjustment - (See Spec's *A and *B) TX in USB.

Adjust RV12 for 'Carrier Output' (*A) V P-P
at 2.4KHz, 10mV input.

Adjust RV4 for 'Carrier Output' (*B) V P-P
at 2.4KHz, +500Hz; 2 tone.

NOTE: Scope two-tone input, make sure is
correctly adjusted for closed output waveform.

*A. RV12 adjust - SSB Output

10W P-P Model — 70V-73V P-P (2.4KHz, 1 Tone)

0.5W P-P Model - 18V-20V P-P (1.25KHz, 1 Tone)

*B. RV4 adjust - SSB Output

10W P-P Model — 64-67V P-P (2.4KHz, +500Hz;
two tone.)

0.5W P-P Model - 12.7-14.5V P-P (1.25KHz only)

CAUTION: When adjusting 0.5W (1 tone) model,
turn RV2 to full CW and fix to protect Xstr
damage on final stage. Exception-model on
which linearity (for 2-tone waveform) is fairly
wrong.

Model using 2SC1969/equiv., possible to turn
RV2 fully CCW, but adjustment depends on the
linearity.

AM Output Power adjustment - (See Spec. *C) TX in AM mode.

Adjust RV13 to get RF Carrier Output (*C) no
microphone input.

*C. RV13 adjust - AM Output, NO mic. input.

4W Model — 3.5-3.95W

0.5W Model - 0.4-0.5W

TRISTAR 747 ALIGNMENT (Cont.)

Transmitter & 38MHz adjustment (Cont.)

"Set Meter" adjust - adjust RV3 until matches 'Power Meter' value.

AM Modulation adjustment - Mic. input at 1.25KHz, 100mV
Adjust RV14 to 100% modulation.
Re-set Mic. input 20db down from above,
check that modulation becomes 80-95%.

FM Deviation adjust - Set TX to FM, Mic. Input at 1.25KHz 10mV;
use lowest freq. channel in unit.
Connect Linear Detector to RF Power Meter.
(See Spec. *D), adjust RV1 for deviation.

*D. RV1 adjust (FM Deviation)

40 Channel unit — 1.5KHz at channel 1 or
lowest frequency.

120 Channel unit - 2.5KHz at channel 120 or
(80 Channel) highest frequency

Receiver Alignment:

AGC voltage adjustment - terminal #14 is test point, adjust RV9
for 1.8-2.0VDC; USB mode with nothing on
antenna input - maximum front panel RF GAIN

SSB RX output adjustment - Sig Gen and unit both set to unit's center
frequency. Clean signal on Sig Gen!
Max Volume, Min SQ, Max RF gain, DX,
Clarifier on center, ANL off, NB off;
settings for radio.
Adjust Delta Tune/Clarifier for a 1KHz
audio output.
Adjust T9, T10, T11, T12, and T8 for
max output - use scope!
(Audio Output should be over 500mW at
0.5_mV input from Sig Gen.)

AM RX output adjustment - Sig Gen and unit both set to unit's center
frequency, switch to AM mode, and 1_mV input.
Adjust T13, T14, and T15 for max audio output.
(Audio Output should be over 500mW)
READJUST: T9 Clockwise to get optimum Signal
to Noise ratio (about $\frac{1}{2}$ to 1 turn).

AM & SSB sensitivity - Confirm that S+N/N = 10db less than:
1_mV Sig Gen output in AM mode.
0.5_mV Sig Gen output in SSB mode.

FM RX adjustment - unit to FM mode, no connection to antenna.
Adjust T16 and T17 for maximum, then adjust volume
for noise output of 500mW.
Apply Sig Gen (1.5KHz Deviation, 1KHz Modulation),
and re-adjust T17 for peak. NOTE: 3 different peaks!

TRISTAR 747 ALIGNMENT (Cont.)

Receiver Alignment (Cont.)

- S Meter adjustment - Sig Gen output of 100_mV
Adjust RV7 in AM mode, and RV8 in SSB mode for a
meter reading of S-'9'.
- Squelch adjustment - Sig Gen output to 500_mV, Squelch to maximum on unit.
Adjust RV10 until audio generates in AM mode.
Adjust RV11 until audio generates in SSB mode.
- Verify other receive controls operate: RF Gain, Local/DX, ANL, NB, etc.
-

PTOS011A0X - Alignment (Extra Crystal Oscillator board).

- Frequency adjustment - probe to TP3 on main PCB (PTBM121D4X) and adjust
T1 of OS011 board for carrier peak, with the
Clarifier to center, USB mode.
Match up the crystal frequencies of X1, X2, X3,
to the Low/Mid/High switch positions..
RE: Low - X1, 20.105MHz adjust CT1; +50Hz.
Mid - X2, 20.330MHz adjust CT2; "
High - X3, 20.555MHz adjust CT3; "
NOTE: there is one model which uses a 19.880MHz
crystal, and must be matched per wiring.
Switch to LSB mode, Mid position, and adjust
CT4 for 1.5KHz lower frequency than obtained
when adjusting in USB mode.
RE: 20.330MHz, -1.5KHz = 20.3285MHz (+50Hz)
Check that all the crystals shift down by this
amount (+300Hz).

Confirm that units meet respective Clarifier/Tune specifications.

- VCO Voltage adjustment - probe to TP1 of main PCB.
Low channels - adjust VCO Block core on Ch. 1 (3.6V)
Mid channels - adjust RV1 on OS011, Ch. 1 (3.7V)
High channels - adjust RV2 on OS011, Ch. 1 (3.9V)
NOTE: This order depends on unit's wiring.
CAUTION: If PLL locking disorder appears when
placed on highest frequency channel. The voltage
on Ch. 1 may have to be increased to no higher than
4.3V
-

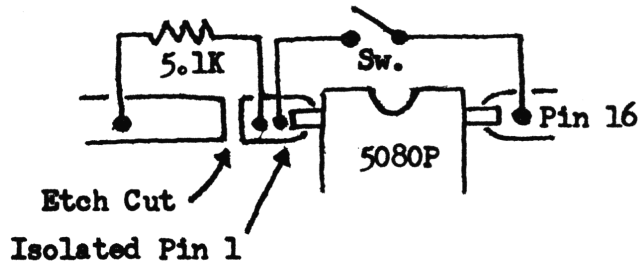
"FACTORY CLARIFIER MODIFICATION"

- Remove D-7 on the main board. Remove R-18 and insert between the center
terminal on Clarifier potentiometer and terminal #5 of main board.
- Add following parts to OS011 board: D-5, D-6 (ITT310); R-9, R-10 (100K).
- Connect terminals #7 and #10 on OS011 board together.

TC-5080P (UPDATE) 5KHz DROP

Check out Pin 1 on the TC5080P chip, should have it tied to ground. Isolate the pin from ground by cutting etch. Bridge the cut with 5.1K $\frac{1}{4}$ W 5% resistor. Using a toggle switch between Pin 1 and Pin 16 of the chip will enable the 5KHz drop.

CHASSIS: TRAM D42, D62; KRACO KCB-4090, KCB4095; COBRA 32XLR, 86, 87XLR, 132XLR, 135XLR; SEARS 562.3820; BROWNING Baron, Sabre, SST-2; SHARP CB750A, CB800A, 2260, 2460.

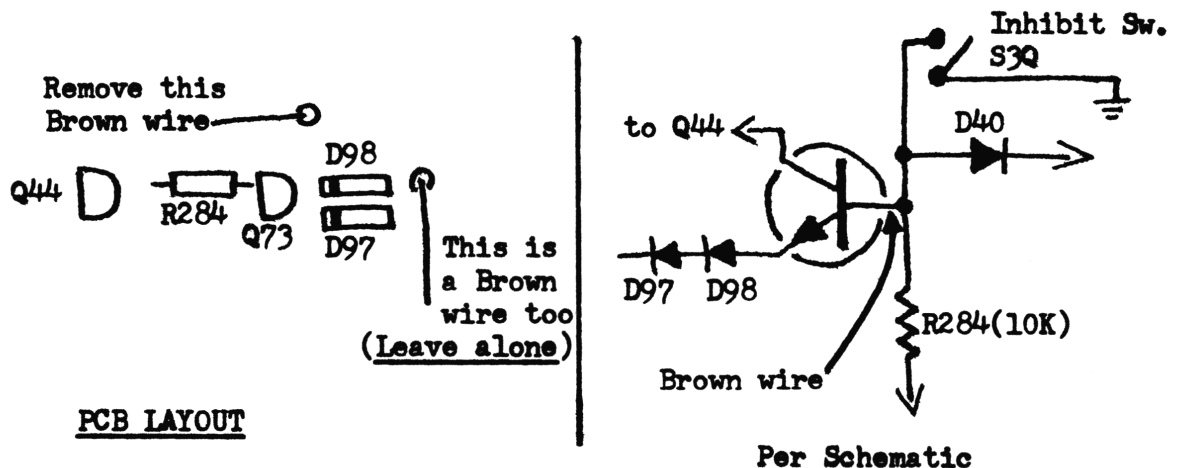


NOTE: Drawing is only an explanation of modification, not actual layout!

YAESU FT-757 GX/SX

TO TRANSMIT ACROSS THE ENTIRE RECEIVE BAND (1.5 to 30MHz)

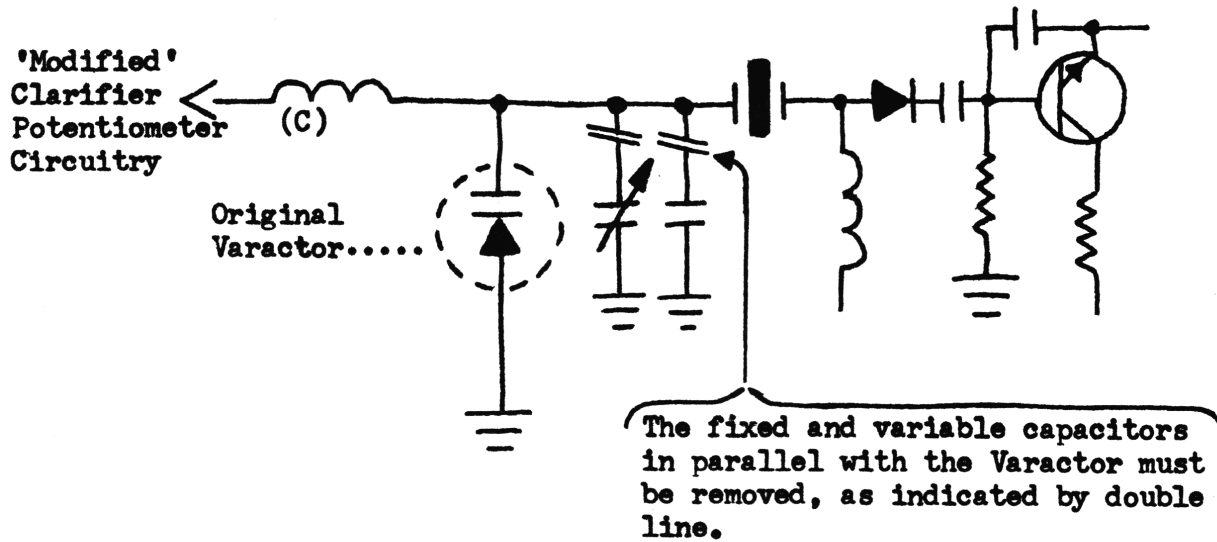
1. Remove bottom cover from radio. This will give you access to bottom PCB. (Unit has double PCB, back to back.)
2. Locate Q73 (2SC458B) on center of board-right hand side, front facing you.
3. Locate Brown wire tied into center leg of Q73. Remove this wire from PCB board.
4. Unit will now transmit over entire range.
5. See drawings below to make sure you get the right wire!



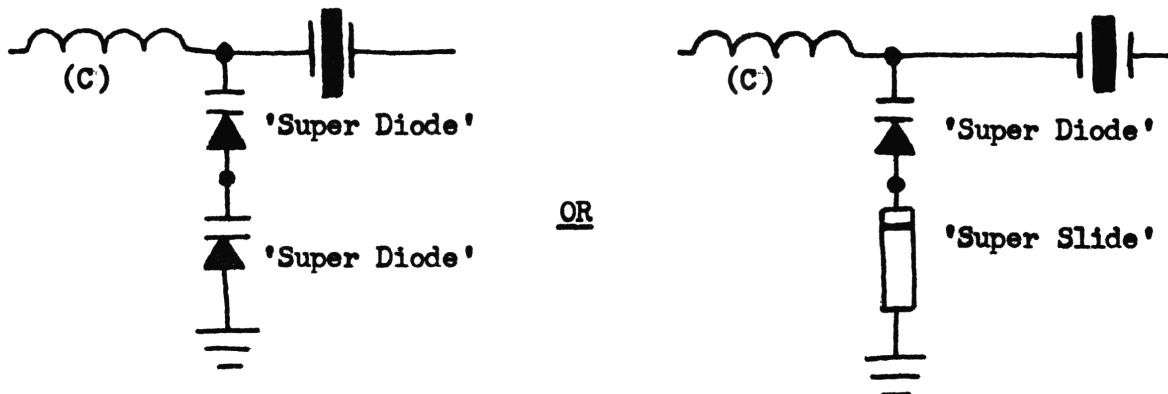
SUPER CLARIFIER DIODE & SUPER SLIDE

General installations, and circuitry modifications for slide.

For example will use one section of 858 SSB chassis for slide only:



1. Remove original varactor and place 'Super Diode' in it's place. ALL PARALLEL CAPACITANCE BETWEEN THE COIL (C), AND CRYSTAL MUST BE REMOVED... In most circuits will give about 8KHz + of slide', in the 858 chassis must use 3 diodes, one for each crystal oscillator circuit.
2. For even further slide; two may be used in series or; a 'Super Slide' can be used in series to ground with the 'Super Diode'. (See Below:)



NOTE: Circuitry is shown with parallel capacitors taken out as required.

The amount of slide is determined by the crystal itself, and design of circuitry. With the 'Super Slide' can usually achieve 20KHz +..

The 'BANDED' end of both the 'Super Diode', and 'Super Slide' are always positive...(furthest from ground in modification).

SUPER DIODE will read shorted on VOM; so don't worry about it; install as shown - and go for it!

BONUS - HAVING TROUBLE BROADBANDING ON UNITS?

The chip will do it, but the chassis won't stretch that far when modifying! Try a 'Super Diode' in the VCO circuit; exchange the regular varactor in circuit; and up comes your frequency.

I actually use more 'S-Ds' in the VCO's than in the clarifier mods! Been doing this for over 7 years with no problems, and range/stability is great... (Stretch an O2A AM Chassis out to about 2.5MHz with no effort, except careful tuning of PLL circuits.)

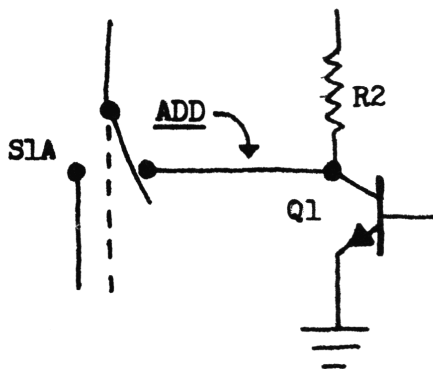
.....ROYCE OWNERS.....

Response was fast on this one, letter from company before April!
Newcomm Electronics
1805 Macon
North Kansas City, Missouri 64116
RE: J. Burton

"Newcomm Electronics bought out the Royce parts, and service Royce!"

- - CORRECTION - -
10KC FLIP-FLOP, SCB Vol. 18, Pg. 23

See partial drawing below: ADD - line from collector of Q1 to switch SLA.



* * * REQUESTS * * *

Have had multiple requests for PLL chip mods for the following chips in SSB units...

O2A - See Volume 4, page 54-55.... 25.675-28.235MHz, logic tables.

SM5104 - See Volume 6, page 26-27.... 26.325-28.045MHz, switch arrangement.
Volume 9, page 20-22.... 26.485-28.205MHz, switch arrangement.

(Ed. Note:) I do not reprint previous information, if can be avoided.....

HINTS / KINKS / GOOFS

Response hasn't tapered off with this column, in fact have utilized most of the information sent in elsewhere. Thus contributors received a 'free volume'. Look at Contributors List on Volume 18!!!

(Remember items appearing here do not receive a free volume, and column not indexed.)

MB Chassis: Audio Chips (AN612) going bad? No cause found, just replace for now.

MB Chassis: No TX, Fo's are O.K..... If AN612 is O.K., check the S042P TX Mixer chip.

COBRA 2000GTL: Turn up the power supply voltage to maximum of 16VDC. Gives a power increase of about 3 Watts.

CAUTION...LAST TIME... SEARS/JC PENNEY UNITS—tunable slugs have SQUARE holes, be careful.

BONANZA....Radio Shack Regulated Power Supply 22-124A... Seems that the stores are not bothering to have these units repaired due to their own labor costs. Have been able to pick up for \$5 locally, (don't give more than that because if transformer is the problem-YOU LOST!). Have found that the main problem is either the circuit breaker or thermal switch in transformer's primary.

COBRA 139XLR: Check for missing part; R43 should be 680K, if there change to a 1.5M. have found 2 units in a row with part missing!

REALISTIC TRC-448: Trouble getting the band in and stable when Fo modifying? Change the VCO Varactors; 2 in this unit; to 'Super Diodes'. And your problem will vanish. (D-5, and D-6).

SAMS #251...Correction: TRC-448; pg. 113. T209 is really T202, correct it.

Junked out Base Stations--Remove the Power Supplies, mount in new cases. Add switch, indicator light, fuse, and D.C. Output jacks....Even better is two to three in parallel for higher current output!(SEE PAGE 63).....

148GTL-DX: Trouble with warble/noise on Tx? Changed to ECG and GE equiv. also 2SC1307, with no luck. Finally used MRF455 (60W Flange Mount), and cured problem. (Ed. Note: before doing all this, check bias on final.)

*SUPERSTAR 2000's: A quick check of these found that the 50ch. selector unit comes in a Green box. While the 40ch. selector unit is in Blue box...

COBRA 148GTL-B: Early 'import' version had 60 Chnls., Late version had an additional 60 Chnls on the lower side, (utilized the Tone Switch as a Band Switch).

VIDEO - GOOF/TIP

READ - IMPORTANT: I recently recorded 'dubbed' a tape for friend on my machine. When he tried to playback at home, was a mess!

Brought it and his machine over - correct; was a mess; but OK on my machines (all three). TROUBLE: His machine was 4-head, all of mine are 2.

Re-dubbed using his machine solved all the problems. I don't know if this will happen all the time - but, check out before you waste time!

NOTE: This was in VHS Format, don't know about BETA.-----Also now the 5-head machines are on the market, good luck!

FREQUENCY CHART

MB8719 with 11.1125 Crystal

RE: Vol. 18, page 74. Rotary Switch/10KHz Flip-Flop Layout.

This is the frequency chart for that modification. (FF, denotes: 10KHz Sw. ON)

CH.	#1	#2	#3	#4	#5	#6
1	26.325	26.965	26.965	26.965	27.605	27.605
2...	26.335	26.975	26.975	27.015	27.615	27.615
3	26.345	26.985	26.985	27.025	27.625	27.625
4FF*	26.355	26.995	26.995	27.035	27.635	27.635
4	26.365	27.005	27.005	27.045	27.645	27.645
5...	26.375	27.015	27.015	27.015	27.655	27.655
6	26.385	27.025	27.025	27.025	27.665	27.665
7...	26.395	27.035	27.035	27.035	27.675	27.675
7FF*	26.405	27.045	27.045	27.045	27.685	27.685
8...	26.415	27.055	27.055	27.095	27.695	27.695
9	26.425	27.065	27.065	27.105	27.705	27.705
10...	26.435	27.075	27.075	27.115	27.715	27.715
11	26.445	27.085	27.085	27.125	27.725	27.725
12FF*	26.455	27.095	27.095	27.095	27.735	27.735
12	26.465	27.105	27.105	27.105	27.745	27.745
13...	26.475	27.115	27.115	27.115	27.755	27.755
14	26.485	27.125	27.125	27.125	27.765	27.765
15...	26.495	26.815	27.135	27.175	27.455	27.775
15FF*	26.505	26.825	27.145	27.185	27.465	27.785
16...	26.515	26.835	27.155	27.195	27.475	27.795
17	26.525	26.845	27.165	27.205	27.485	27.805
18...	26.535	26.855	27.175	27.175	27.495	27.815
19	26.545	26.865	27.185	27.185	27.505	27.825
20FF*	26.555	26.875	27.195	27.195	27.515	27.835
20	26.565	26.885	27.205	27.205	27.525	27.845
21...	26.575	26.895	27.215	27.255	27.535	27.855
22	26.585	26.905	27.225	27.265	27.545	27.865
23...	26.615	26.935	27.255	27.255	27.575	27.895
24	26.595	26.915	27.235	27.275	27.555	27.875
25...	26.605	26.925	27.245	27.285	27.565	27.885
26	26.625	26.945	27.265	27.265	27.585	27.905
27...	26.635	26.955	27.275	27.275	27.595	27.915
28	26.645	26.965	27.285	27.285	27.605	27.925
29...	26.655	26.975	27.295	27.335	27.615	27.935
30	26.665	26.985	27.305	27.345	27.625	27.945
31...	26.675	26.995	27.315	27.355	27.635	27.955
32	26.685	27.005	27.325	27.365	27.645	27.965
33...	26.695	27.015	27.335	27.335	27.655	27.975
34	26.705	27.025	27.345	27.345	27.665	27.985
35...	26.715	27.035	27.355	27.355	27.675	27.995
36	26.725	27.045	27.365	27.365	27.685	28.005
37...	26.735	27.055	27.375	27.415	27.695	28.015
38	26.745	27.065	27.385	27.425	27.705	28.025
39...	26.755	27.075	27.395	27.435	27.715	28.035
40	26.765	27.085	27.405	27.445	27.725	28.045

PACIFIC 800 SSB (UPDATE)

Why didn't someone mention that the PCB on this particular unit has no markings for parts designation? Hard enough to find schematics; and line-ups on 'Exports'; but a parts layout? GOOD LUCK...

I did notice one thing about the PCB itself. Seems that the same board is used for another unit as had places for additional crystals. BEWARE of another popping up from the same outfit (Re: Petrusse Pacific 160).

Out-of-box, was O.K. and didn't want to do much in way of 'poking' around, as didn't know what-was-what. One thing I will say about the unit is that the RF Gain, and Noise Circuitry are excellent!

Played with PLL logic (no realignment to circuitry) to see just how far unit would stretch and keep power up, pleasant surprise here. 26.325-28.320MHz (in 10KHz and 5KHz increments) as this chip is very versatile. Also see Vol. 18, for Slide/Fo mod.

<u>Frequency</u>	<u>Selector</u>	<u>Band Switch</u>	<u>PLL Logic Strapping</u>
26.325-26.685	1-32	A	11-0
26.510-26.730 (5KHz increment)	1-40	A	6-0
26.775-27.135	1-32	B	11-0
27.790-28.010 (5KHz increment)	1-40	A	6-0, 9-1
27.865-27.965	22-32	A	10-1, 11-0
28.055-28.375	1-28	B	10-1, 11-0
28.240-28.380 (5KHz increments)	1-25	B	6-0, 9-1, 10-0

Logic 1 - Pin 1 of PLL; may be applied directly to pin. (Exception-Pin 9, must be isolated from D.C. Ground by 5.1K resistor first.)

Logic 0 - Open line to pin from selector. (Chip has pull-down resistors built in.)

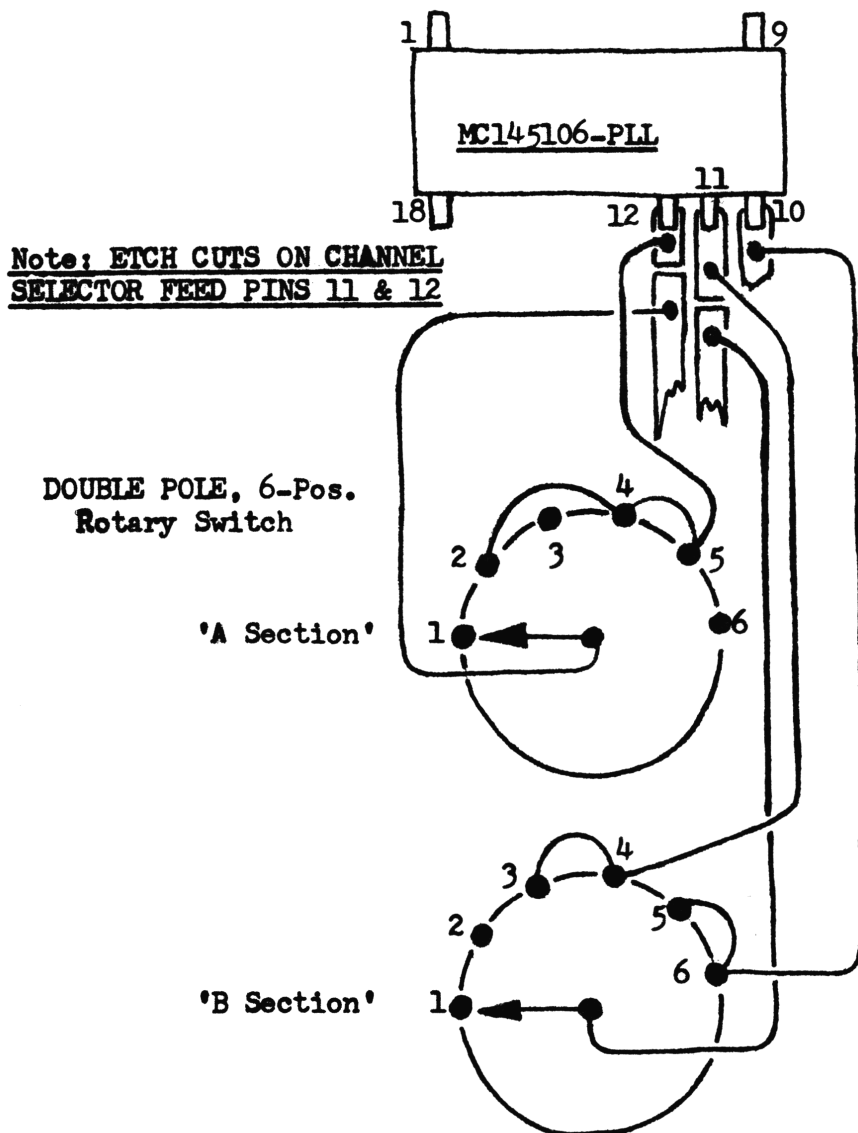
Pin 6, has no connection on the PCB.

Put Slide/Fo conversion from Vol. 18 in unit and 'let it go at cost', with "2 step warranty"!!

WOULD LIKE TO HAVE ANOTHER BUT ONLY IF I CAN OBTAIN THE PARTS LAYOUT, UNTIL THEN CAN COLLECT DUST ON THE 'DEALERS SHELVES'....

PACIFIC 800 SSB (UPDATE)
Rotary Switch Modification

Below is modification I use on the Pacific 800 SSB; it allows a frequency coverage of: 26.225-28.415MHz.



- Pos. 1 - Range Switch 'A'.. 26.225-26.365MHz, selector pos. 19-32
- Pos. 2 - Range Switch 'A'.. 26.325-26.685MHz, selector pos. 1-32
- Pos. 3 - Range Switch 'A'.. 26.695-27.005MHz, selector pos. 5-32
- Pos. 4 - Range Switch 'A'.. 26.965-27.405MHz, selector pos. 1-40
Range Switch 'B'.. 27.415-27.855MHz, selector pos. 1-40
- Pos. 5 - Range Switch 'A'.. 27.605-27.965MHz, selector pos. 1-32
Range Switch 'B'.. 28.055-28.415MHz, selector pos. 1-32
- Pos. 6 - Range Switch 'B'.. 27.785-28.095MHz, selector pos. 5-32

LAFAYETTE 2400FM

'Out-of-the-Box' performance: Modulation 40%, AM/FM Power-Good, SSB Power-Fair, Receive Good. Major discrepancies: No schematic, '90-day wonders' on the Final and Driver, NO heat sink compound. Cold solder joints and bad wire connections found also, plus this particular unit had no Owner's Manual. A hand-written frequency chart (Zerex copy) was with the unit? Covers didn't fit right.

<u>RF Power (Out-of-box)</u>				
<u>Frequency</u>		<u>AM</u>	<u>SSB</u>	<u>FM</u>
26.065	H	8	10	12
	M	4	8	9
	L	.75	2	3.1
26.955	H	8	10	12
	M	4	8	9
	L	1	2	3
27.855	H	9	10	10
	M	5	8	7.5
	L	1.5	2	2.5
28.755	H	9.5	9	10
	M	5.5	7	7
	L	1.5	1.75	2.1

Performance after alignment: SSB power up to 14W, and AM modulation 98%.

"Quote: Personal Opinion-Wouldn't have the D__ thing!!!"

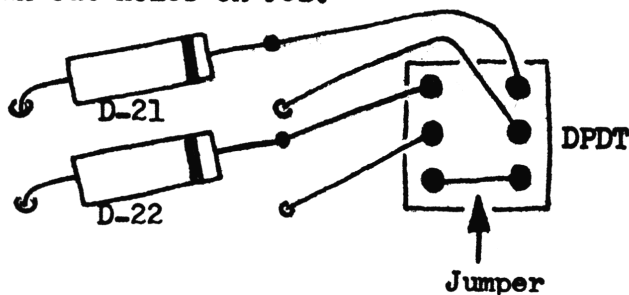
W A R N I N G

BEWARE OF EXCEEDING POWER RATING OF ANTENNA. Customer recently brought back a MELTED DOWN Bandit Antenna. When asked how much power he was using? Said, 'Oh, about 300 Watts!' Had warned him not to exceed 100W! He also returned Fried Linear and Zapped TRC-449. A Shame, \$\$\$\$\$.....

Modulation Switch - 858 SSB CHASSIS

Lift Cathodes of D-21 and D-22, clean out holes on PCB.

Wire to a DPDT switch as shown:



TROUBLE-SHOOTING TIP - 858 SSB CHASSIS

Had a phone call on this one; 'stuck on 23.3MHz'?? Told to double-check the PLL alignment, Oscillators, and Clarifier mod.-if any. Sat down with a schematic to see what else could possibly cause the problem, and wrote to man what might do it.

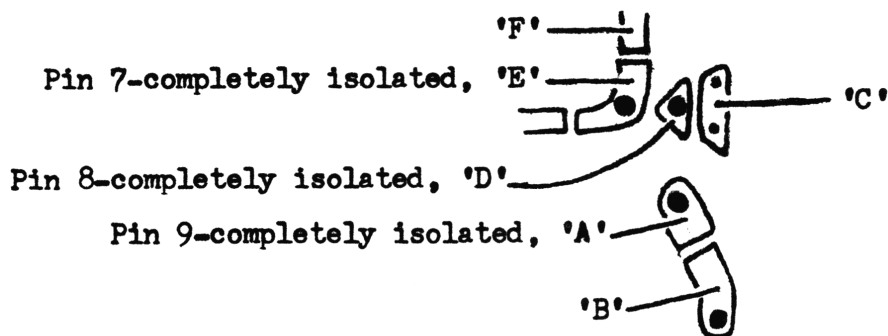
Rc'vd letter back in a week; no-go; still bad... Pulled out my own unit to try and see if I could duplicate condition, as positive that the alignment was problem. I screwdriver-jockeyed the entire transmit and PLL circuit alignment on purpose, - BINGO. I had the same 23.3MHz!

Found the problem after doing a complete realignment, SLOWLY! L-37! It can be adjusted for peak power but on a harmonic oscillation. The coil section nearest FET-6 is the one, adjust for peak power: Take core to top of can, then adjust down for the first peak reading. If you have broadbanded the unit; and 'extra channels' in also; be very careful.. Good Luck, as will have to balance out the power!

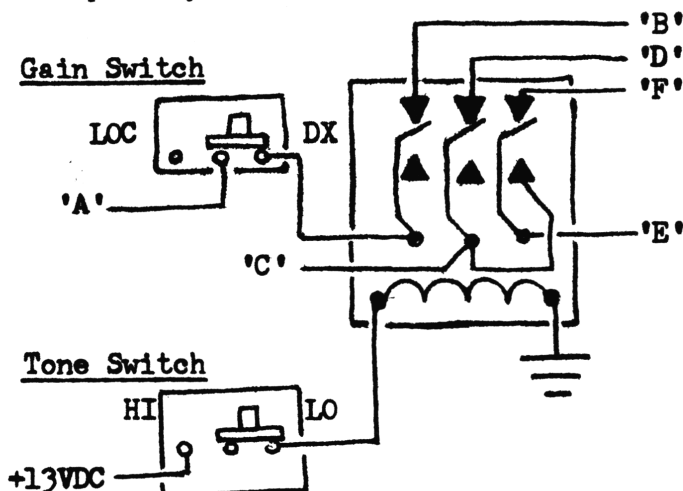
148GTL-B, High/Low Modification

For this modification the following switches were 'hard-wired' and used for logic switching: RF Gain (Loc/Dx), and Tone (High/Low).

PLL chip must have the etch cut in the four indicated places to isolate the pins. See below-only the modified pins are shown...



Wire up relay as shown below to switches and PLL etchs (Pts. A - F).



(Both sw's shown in Lo Fo position)

FREQUENCY RANGE CHART

1. Tone-Hi, Gain-DX
26.965-27.605MHz
Selector: 1-60
2. Tone-Hi, Gain-LOC
27.605-28.245MHz
Selector: 1-60
3. Tone-Lo, Gain-DX
26.325-26.955MHz
Selector: 1-60

NOTE: VCO alignment is critical to reach extreme ends of band.

BLEED-OVER FILTER (UPDATE)

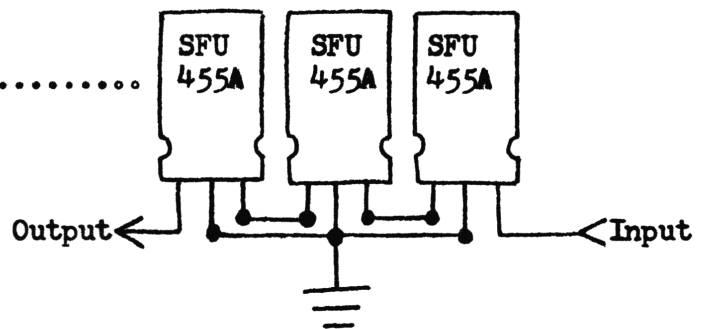
RE: Vol. 16, Page 40... Can't find many now, as everyone has pulled out of the junk chassis? GOOD NEWS: Radio Shack, #272-1302; 455KHz Ceramic Filters (2 in the pack); and only 99¢. BEST & WORST NEWS: Work like a champ, - Discontinued! Have been able to buy up all in my area for 1/2 price; so start buying; cheaper to buy than scrounge around! Rewire as below: (I use 3 of them in series, for even better rejection!).

Individual Filter

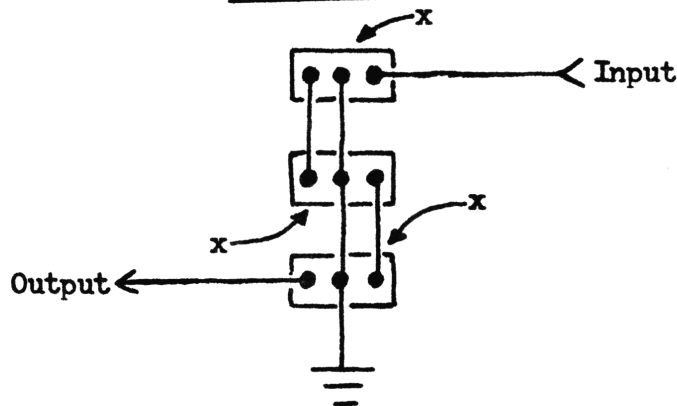


Lettering Sides.....
1-Input
2-Ground
3-Output

Schematic Wiring



Wiring Layout



X - denotes lettering side of filter. Units have been left separated in drawing for better explanation. I usually put some tape around to hold in place, then enclose all in one piece of heat shrink.

- - - CORRECTION - - -

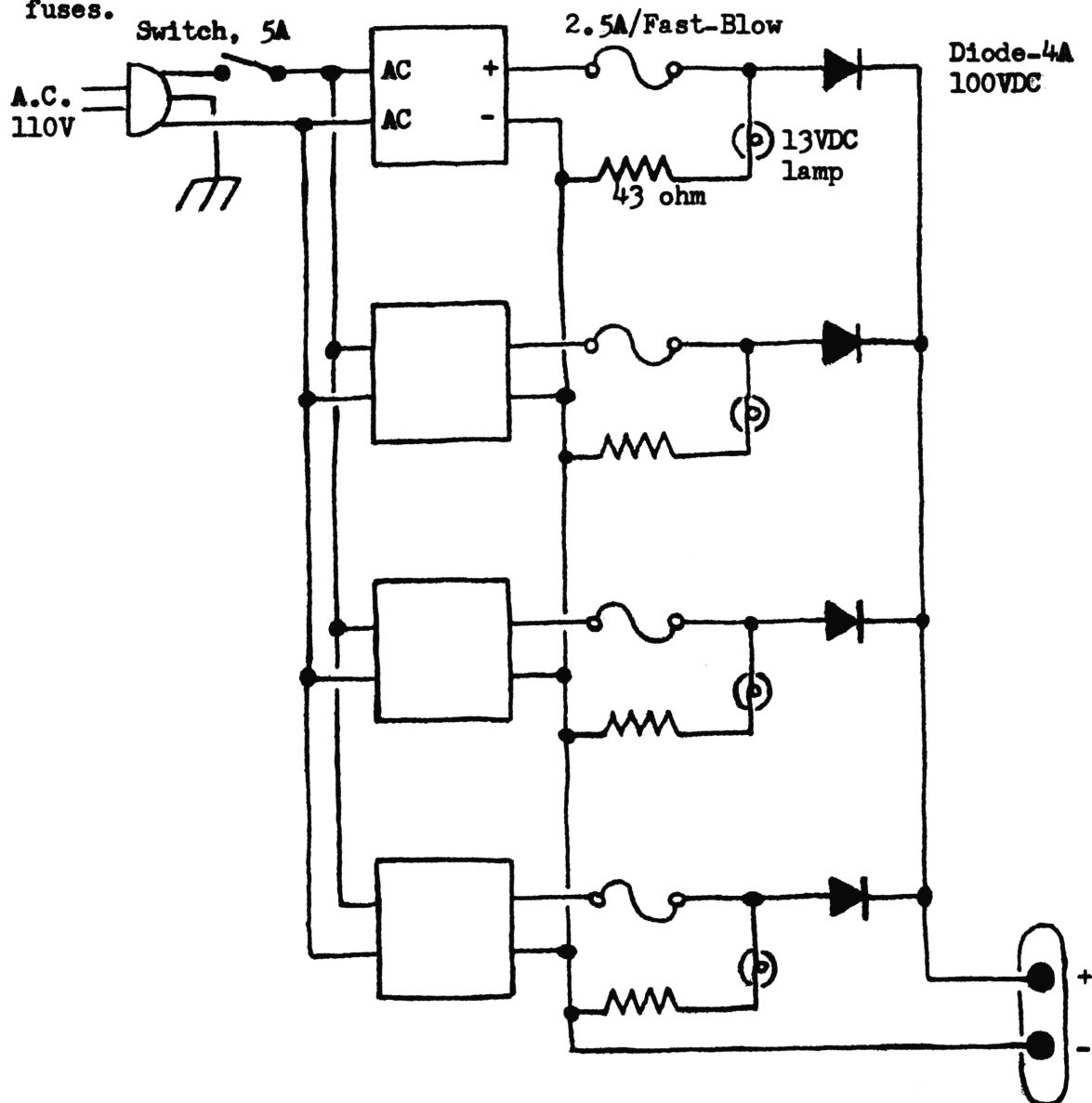
148GTL-DX: LATE (UPDATE), SCB Vol. 18, page 26.

5th line down: " to de-beep the newer board (pb-010AB): locate C162 (2.2mf/25VDC) and remove it " - DELETE: C162 (2.2mf/25VDC) and remove it.
CHANGE TO: locate wire marked BEEP on the PCB, and remove - or add a switch in series.

'SALVAGE OF POWER SUPPLIES'

RE: Hints/Kinks/Goofs, page 56. Use design below for assembly, as a guide. Used a block diagram for the salvaged power supplies, including transformer. CAUTION: Make sure that all A.C. lines are thoroughly insulated from the case, or use 3-prong plug/3-wire AC line for grounding.

Parts are listed for the 1st section only - check schematic for each power supply you scrounge and change fuse accordingly. NOTE: most AM base units had 2A rating, SSB 3A rating. But when used in parallel the lowest rating of any must not be exceeded by any other. Identical fuses.



The lamp circuit will determine if any fuse has blown, or P/S inoperative. Diode is to prevent 'feedback' into any particular power supply unit.

VIDEO TAPE

MY, experience with the various brands of video tape and preference!

First things to always remember about Video Tape; BUY NAME BRANDS ONLY.

Tape companys are popping-up, like the weeds will in my garden come May!

Not only will your machine suffer the consequences of the "cheap" tape; your billfold will have a STROKE; come repair time. In some cases you will find it cheaper to buy a new machine, for the warranty alone!

Who makes the tape for whom? (Good question-but am not too sure on the real facts-due to who own's who?)... FACT: Radio Shack owns Memorex; so that puts the rumor to sleep that it is an 'Off-Brand'. The price on Radio Shack brand is usually \$3-4 higher than Memorex; as the main company sets the price; not the local stores.

FACT: JVC owns the VHS trademark, and all tape that meets their standard will have VHS on the cassette and outer box.

I use the following for MY uses: Remember this is my opinion!

Everyday - tape regular programming and replay, over and over.

Name Brand T-60: A local discount store couldn't sell the stuff when T-120 was going for only \$2 more, so got a deal on 3 cases of it for \$85. I use T-60 in 6 hr. mode as will cover the whole 3 hrs. of prime time TV in my area. Also use all the tape; not just a portion; over and over. (T-60 isn't a big seller and can literally steal it if you go together with a bunch of people and get 4 or more cases at a time. HINT: Try local Video stores where they rent tapes, as usually stuck with it!)

T.V. Programs and Series for re-edit to a "Master Tape".

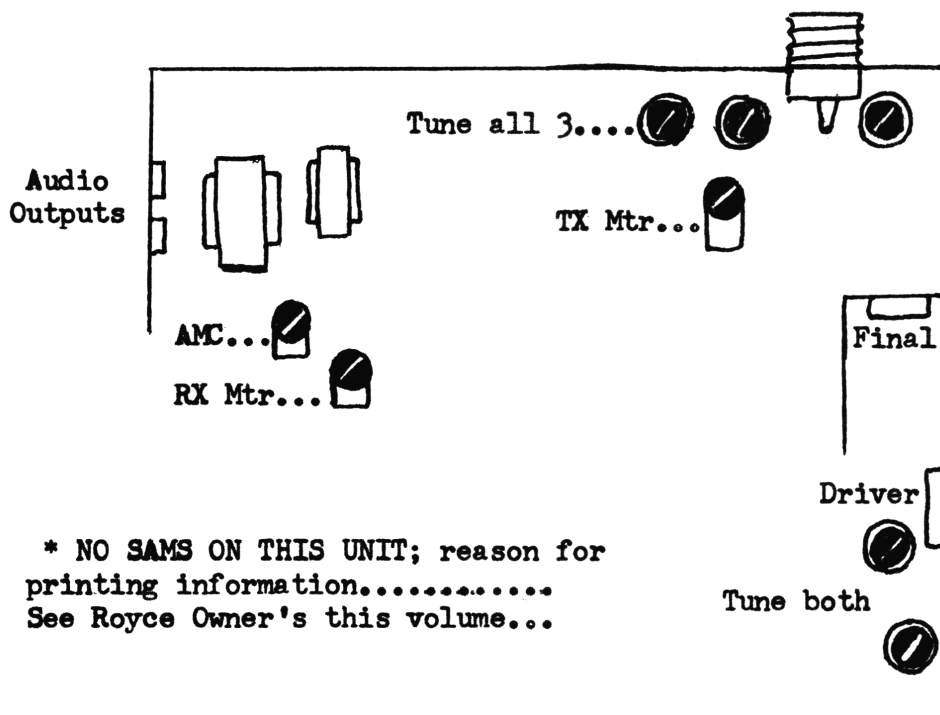
(Am doing the 2 'Helicopter Series' for my nephew, keeps him quiet!) PBS - 'Masterpiece Theater' is excellent, and definetly a keeper... When taping for re-edit to a Master, I tape in 2 Hr. mode with Memorex. (Not High Grade, as something just isn't right with it - tried in 3 different machines to see if it was mine)!

"Master Tapes" - Taped in 6 Hr. mode with Scotch! I have heard salesmen try to talk people out of buying Scotch, saying that it was no good. The reason for this is not only a lack of knowledge about what they are selling, but are there to sell a higher priced tape for more money in their pocket on commission! FACT: Best Signal-to-Noise-Ratio on the market, only Scotch High-Grade can beat it! Have used over 300, and had 1 bad tape-which was mechanical malfunction in the cassette itself-not the tape! Also it is a 'softer' tape and easier on the VCR's heads! (Don't let people tell you they have to give a rebate to sell the tapes --- It is DAMN GOOD, the best in my opinion!)

Camera Recording - No recommendation or preference, as haven't had a camera stay operational long enough to form an opinion. I do have a friend that tapes all the local H.S.'s Football and Basketball Teams games and swears by Fuji.

ROYCE 1-600B; 23ch.

No parts I.D. on PCB.... use below for tune-up. Change Final to 2SC1306. Put slug in coil nearest the antenna connector. Tune all coils shown for max forward on Ch. 12... See Vol. 1 & 2 SCB for crystals if Fo change desired:



* NO SAMS ON THIS UNIT; reason for
printing information.....
See Royce Owner's this volume...

G.E. 3-5806, 40-Ch. AM (IC7132-PLL)

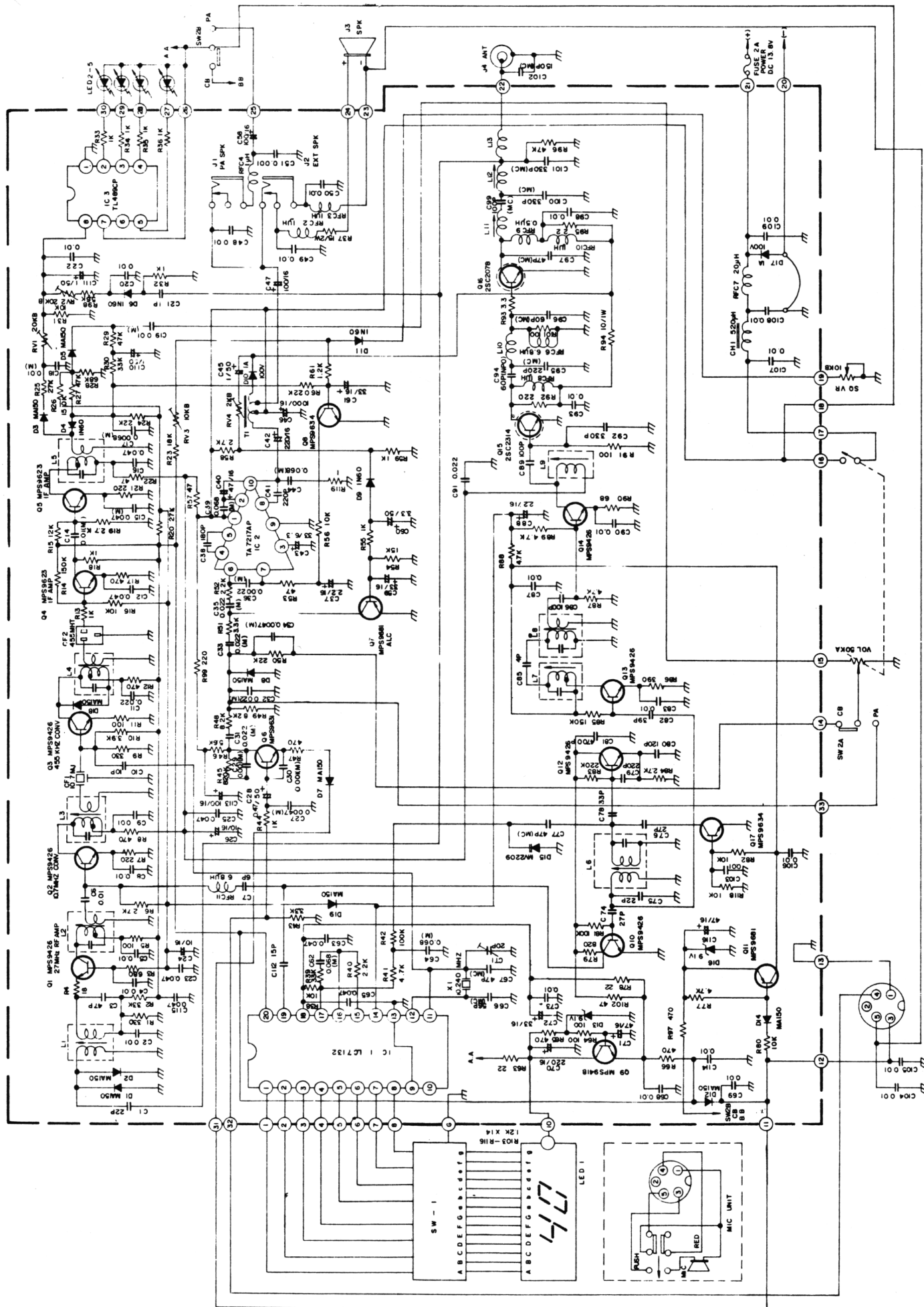
Nothing spectacular here - not enough to mess with, run-of-the-mill unit. RX tune: L1, L2, L3, L4, L5. TX tune: L6, L7, L8, L9, L11, L12. RV1-'S' lights; RV2-'Tx lights'; RV3-Sq Rng; RV4-AMC, Defeat is D-9. R93 may be changed to 1 ohm for higher RF output. As usual on these 'cheap' units the rejection isn't there; (See page 62 this volume); dual up CF2 in this particular unit. See schematic, page 66.

WKS 100, 40 Ch AM/SSB (IC7120-PLL)

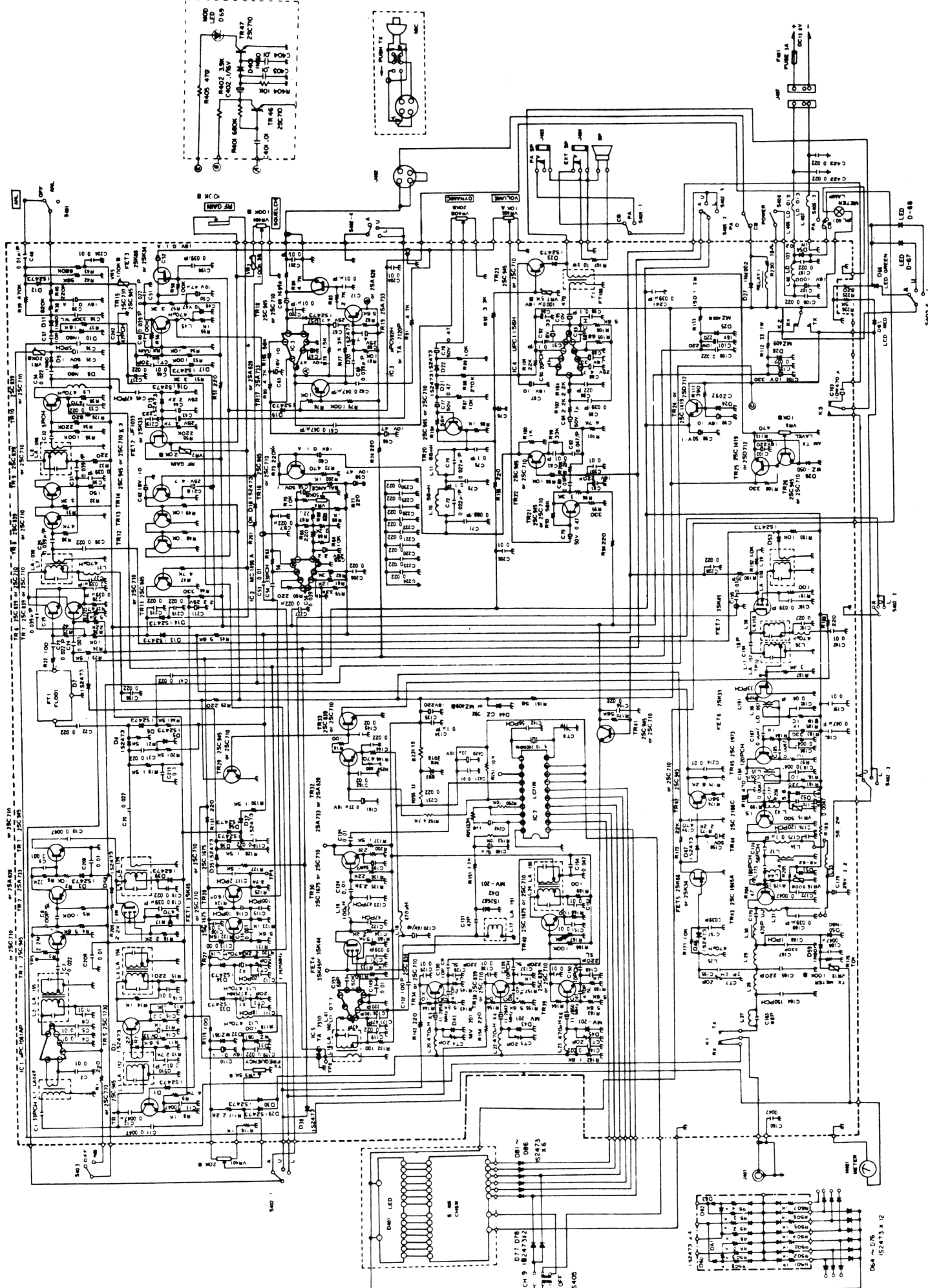
**THIS UNIT IS AN F.C.C. REJECT-NO TAG, and is starting to show up as an 'Export'... Specs: standard U.S. AM/SSB, - source says that the PCB layout is identical to the 858SSB chassis - with PLL chip/RF power sections being the only difference. (Unit does come with schematic, owner's manual, and parts list).

CAUTION: Final-2SC1945 is the 'sister' to the 2SC1969! But when you change run into another problem; as the legs on original are B-E-C; while the 2SC1307 is B-C-E. Will have to bend the legs around; and shield with TEFLON sleeving to prevent shorting; when replacing. PCB is also missing L-6 and FT-2, so you can imagine the rejection. The ROM PLL chip will convert, but the Fo's come out EVEN. With the large slide conversion installed in unit should be no problem at all!

See Vol. 7 SCB, pages 25-28; for basic conversion of chip - read between the lines. Ch. 9 circuit must be modified to install in this unit, suggest permanently 'un-wiring'... 28.310 is about as high as it goes!



WKS-100

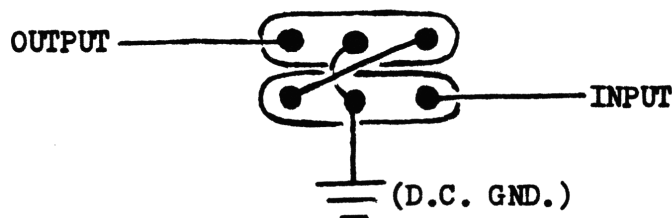


858SSB CHASSIS - ADJACENT CHANNEL REJECTION

ED. NOTE: (I for one am tired of hearing the common 'put-down' on this chassis because of rejection! This usually comes from the "SCREWDRIVER JOCKEYS", and those who think they know electronics because the light bulb comes on when the switch is thrown.)

SOLUTION:

1. If your unit has L-6 and FT-2 on PCB. Add another filter (FT-2), in series.
2. Most mobiles and some base units don't have these parts. A jumper will be found on the PCB instead. Remove the jumper and add the required parts, L-6 and (2) FT-2's.
3. Parts may be 'Special Ordered' from your local Radio Shack.
 - A. Radio Shack Reference No: 21-1580 (TRC-457).
L-6: part number - CA-3751
FT-2: part number - C-0794
 - B. Prices on parts when I last ordered were (April '84): L-6, \$3.56.
FT-2, \$5.55 each. CHEAP, considering performance gain!
4. Wire the filters in series as illustrated below:



(wired exactly as shown above will fit perfect on PCB.)

NOW, enjoy - and I hope this puts an end to the belly-aching!

WKS 100 - PERFORMANCE NOTE

With present final in the unit will distort in SSB mode if peaked out. Turn down the SSB-AIC (CT7), to a maximum of 10W and will have no further problems.

GRANT-DX, TROUBLE SPOT

A few Grant's (DX) are coming in for repair with no SSB Rx... Check TR22, supposed to be a 2SC1730L - but have found MSL1200 in them?
Replace with a 2SC1730L, have had no further problems.

ADD TO: SCB Vol. 11, page 10. (Craig 1232/Wards GEN-719A with uPD2824C Chip)
Clarifier- 3. Jump R418. Add following to same line - (R164 in GEN-719A).

UNIDEN PC-3, (9106-PLL)

All adjustments for VR's clearly marked on PCB. TX-Peak L-7, L-10, NOTE that L-9 is missing a slug? Quote: Don't exceed 6W or forward swing falls off. TR14 is the AMC defeat.

148GTL-DX, (Phone Call-In)

This is all the information they gave: "Ground Pin 6 of IC5"????
Well, they meant the Late version, as the Early IC5 is the Audio chip! in the Late version is the PLL chip. PLEASE, calling is O.K., but like to get all the facts in writing for correllating. That is where the corrections come into play - as I don't have every radio in front of me to check these modifications out on.

Now, back to pin 6 of the PLL chip: Late version 148GTL-DX, this is the frequency select pin (changes the PLL steps from 10KHz progression to a 5KHz progression). In most units will drop the Fo by 455KHz.

TEABERRY 'T', - (4011)

Also pertains to the following units: Gemtronics GTX-5000, Robyn T-240D, Colt 900 (Midnight Special), and any other similar units.

HEAT....as these units have a few years on them now, heat is starting to play H___ with the components. R-501 is a major culprit; the heat is slowly changing the resistance of R-604/605. Also C603 has been found open in a few units?

Suggest: Drilling a few additional holes in bottom of case for air flow and in some units have even installed a small computer fan on the back to keep unit cool.

FACT: If you like to live dangerously-can use to keep your coffee hot just by placing cup on top of the unit while it is on...it does get WARM.

SPECIFICATIONS

GENERAL

Frequency Range..... 25.600 to 29.200MHz
 Frequency Control..... Phase Locked Loop (PLL) synthesized circuitry
 Frequency Tolerance..... 0.00%
 Frequency Stability..... 0.001%
 Operating Temp. Range..... -20°C to +50°C
 Microphone..... Plug-in lock type; Amplified Noise Cancelling with push-to-talk switch and 6' coiled cord. DC power supplied from unit.

Input Voltage..... 11-15.9VDC (min.-max.) Nominal 13.8VDC.
 (Positive or negative ground.)
 Current Drain..... Transmit, maximum R.F. power. SSB 80W PEP
 Output 10A.

Cabinet Dimensions..... Receiver equipped; 0.6A, maximum audio output 1.2A.
 24" H x 9" W x 12 1/2" L
 Weight..... 8 pounds
 Antenna Connectors..... UHF, (TX-RX SO-239). VHF/UHF, (RX Motorola Jack).
 Meter..... Illuminated; indicates relative power output, received signal strength, modulation and standing wave ratio.

TRANSMITTER

Power Output..... AM-12W; FM-12W; SSB-25W, PEP.
 RF AMP Power: AM/FM-50W; SSB-80W PEP.

Intermod. Distortion..... SSB: 3rd and 5th order, more than -30db.
 7th and 9th order, more than -40db.
 More than -50db.

SSB Carrier Suppression..... More than -50db.
 Unmodulated Sideband..... AM and FM: 300-3KHz; SSB: 400-4KHz.
 Frequency Response..... 50 ohm, unbalanced
 Output Impedance..... 7.8KHz, crystal lattice type
 SSB Filter..... 6db @ 4.2KHz; 60db @ 7.0KHz

RECEIVER

Sensitivity..... SSB: Less than 0.2 microvolt for 10db (S+N)/N
 at greater than 1/2 watt of audio output.
 AM: Less than 0.65 microvolt for 10db (S+N)/N
 at greater than 1/2 watt of audio output.

FM: Better than 0.65 microvolt for 20db (S+N)/N
 at greater than 1/2 watt of audio output.
 Better than 65db.
 Cross Modulation..... Better than 75db.
 Image Rejection..... FM 1st: 7.8KHz; FM 2nd: 4.5KHz; AM/SSB: 7.8KHz.
 IF Frequency..... Adjustable for optimum signal reception.
 RF Gain..... (MC): Less than 10db change in audio output for inputs of 10-500,000 microvolts.

Automatic Gain Control..... Adjustable; threshold less than 0.5 microvolt.
 Squelch..... RF type, effective on AM and SSB.
 Noise Blanker..... (Independent, shifts with 5KHz jump).
 Clarifier Range..... FINE: ± 2.0 KHz (RX Only).
 COARSE: ± 7.0 KHz (RX and TX).

Audio Output Power..... 3.6W minimum into 8 ohms.
 Frequency Response..... SSB: 400-4KHz; FM: 300-3KHz; AM: 300-2.1KHz.
 Distortion..... Less than 10% at 3W output.
 Built in Speaker..... 8 ohms, 4W, round.
 External Speaker Jack..... 8 ohms; not supplied. Disables internal speaker when connected.

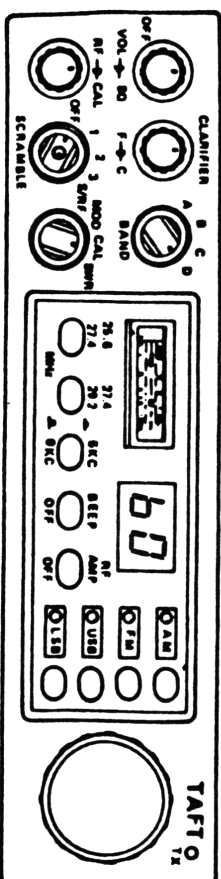
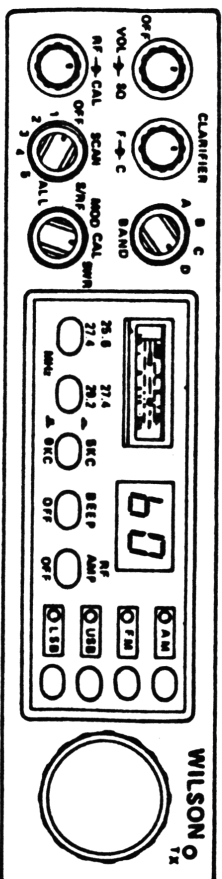
SCANNER.....(WILSON MDL.)

Channels of Operation.....

Frequency Range..... S-as determined by any of 5 crystals, (or) Varactor
 tuned oscillator circuits. (RF Oscillator, Oscillo-
 scope, and Frequency Counter are required for tuning.)
 Frequency Coverage..... 30-50MHz, 118-136MHz, 144-174MHz, 450-470MHz, 470-512MHz.
 VHF LO: 6MHz for maximum sensitivity (40MHz \pm 3MHz).
 VHF AIRCRAFT: 6MHz for maximum sensitivity
 (127MHz \pm 3MHz).

Sensitivity..... VHF HIGH: 8MHz for maximum sensitivity (153MHz \pm 4MHz).
 UHF: 30MHz for maximum sensitivity (460MHz \pm 15MHz).
 Better than 1 microvolt at FM Band and better than
 2 microvolt at AM Band for (S+N)/N = 20db.
 Selectivity..... -4db + 9KHz, -50db \pm 15KHz.
 Modulation Acceptance..... -4db + 9KHz, -50db \pm 15KHz.
 I.F. 10.7MHz and 455KHz
 Filters..... 10.7MHz Crystal Filter, and 455KHz Crystal Filter.
 Squelch Sensitivity..... Variable from less than 1 microvolt at FM Band and
 less than 2 microvolt at AM Band.

Scanning Speed..... 5 Channels/second.
 Delay Time..... 1-3 seconds.
 Crystal Specifications.. Standard TKN (Not supplied), HC-25/U 3rd Overtone.
 SEARCHER.....(TAPT MDL.)
 Modes of Operation..... 3-selectable, with fine tuning adjustment for
 synchronization.
 (Scannable module is sealed-no specifications are given.)



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7	37	8	43
7	43	11	78
7	49	10	25
7	53	11	78
7	54	13	66
7	63	11	78
8	16-17	10	72-73
8	17	9	29
8	52	11	78
9	9	10	74
9	29	10	72
9	51	10	75
10	2	11	78
10	10,16	12	66
10	25	13	66
10	28	12	66
10	48	13	67
11	3	12	66
11	4,6	13	67
11	10	12	66
11	11	13	67
11	15,16	12	66
11	41	13	67
11	71	12	66
11	75	13	67
12	7	15	69
12	27,28	16	72
13	63	15	69
14	12	15	69
14	22,41	16	72
15	58	17	70
15	63,65	16	72
16	50	17	70
16	72	17	70



CORRECTION INDEX

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VOLUME 11, page 10: see page 68 this volume...

VOLUME 18, page 23: see page 54 this volume...

VOLUME 18, page 26: see page 68 this volume...

X Did not enter this correction due to unclarity

One of our readers called in one day and said he had just finished with the conversion on page 13 of SECRET CB Volume 9 (Craig L-131, L-231). Said he changed Step #3 to read: Solder a wire to COM terminal on the board - NOT NUMBER 8. Said this takes radio way down. Don't really know if he meant this should be a correction or just a way to get the radio down. Sometime our notes from a telephone conversation are not too clear when we try to decipher them. This is the reason we need the information mailed in from you.

Notes

EXPERIMENT SHEET

(Permission to Copy - USE IT!)

Make/Manu: _____ Model-Type/No: _____ Serial #: _____

PLL Chip Type: _____

Logic Changes, special notes:

Sel:	Fo's	Fo's	Fo's	Fo's	Fo's	Fo's
1						
2						
3						
4						
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