SEEBURG - QUICK PROBLEM GUIDE

(1) NO CREDITS:
- Check control centre and black box plugs
- Check control centre fuses (Fig. 6)
- One coin, or all ? One: Check switches, All: Buffer Board (Fig. 6)
- Operate free play switch. Works ? - Buffer board; No ? - Black box
- Do coin switch plug test. (Fig 10) Works ? - Switches or plugs
  No ? - Black box faulty

(2) MISSING, WRONG, OR NO SELECTIONS:
- Make test selections (Fig. 10). Works ? Yes
- Check read source/read load (Fig. 5)
- Clean detent switch (Fig. 7)
- Check format contacts
- Select 179 and 279 (must scan twice); if not, then
  Check play control subtract switch (on Mech.)
- Do data line test (Fig. 10)

No ?
- Check 1/8 A Fuse (Fig. 6)
- Battery Test (Fig. 2,3,4)
- Clean Contact 2 Mi (Fig. 8)

(3) PLAYS ONE RECORD CONSTANTLY:
- Check and clean 3 Mi contacts (Fig. 9 . Must open and close during cycle).
- Interchange trip and mute relay (where possible).

(4) REJECTS RECORD IMMEDIATELY:
- Check remote reject
- Check service reject switch
- Check tone arm switch
- Check timing on 3 Mii and 3M12 contacts: 3 Mii must open before 3M12 closes (Fig. 9).

(5) NO SCAN START: Operate service mech. start switch

Works?
- Check Yes-No switch
- Do pin #15 test (Blue plug - Fig. 10)

No?
- Check 25 VAC fuse (Fig. 6)
- Check play control (Fig. 6)
- Check play contr. switch (Fig. 6)

(6) STRANGE / INTERMITTANT PROBS (IE - MISSES SELECTIONS SOMETIMES OR OVERSELECT - UNPLUG FORMAT PLUG + CHECK CONTROL CENTRE TO MECH FOR GOOD GND CONNECTION

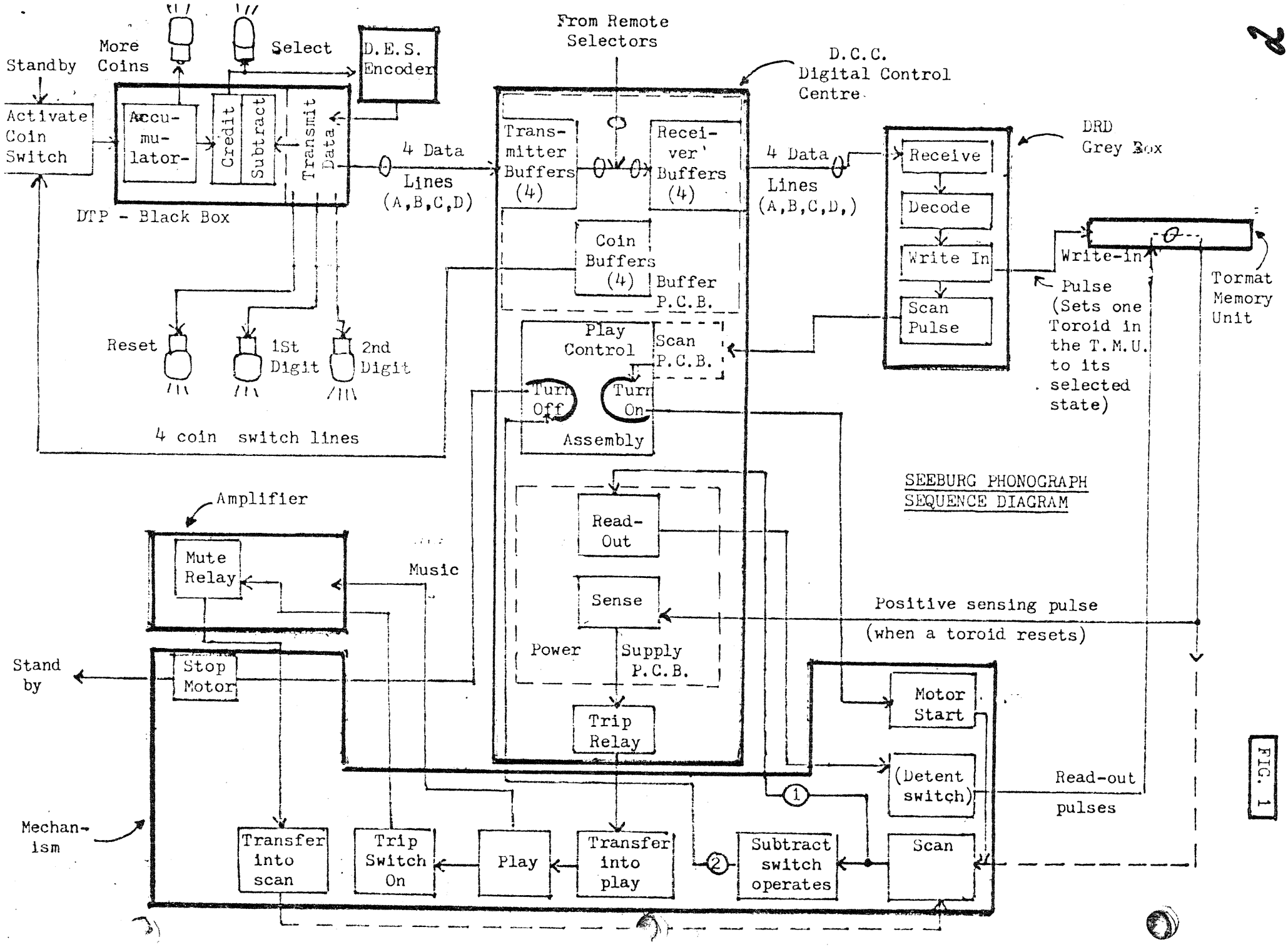
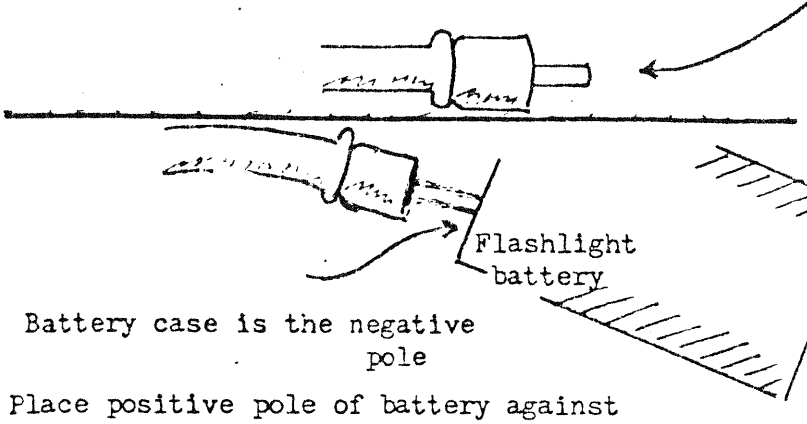

From Remote Selectors
D.C.C. Digital Control Centre
DRD Grey Box
Standby
More Coins
Select
D.E.S. Encoder
Activate Coin Switch
Accu-mu-lator-
Credit
Subtract
Transmit Data
DTP - Black Box
4 Data Lines (A,B,C,D)
Trans-mitter Buffers (4)
Recei-ver Buffers (4)
4 Data Lines (A,B,C,D,)
Receive
Decode
Write In
Scan Pulse
Write-in
Pulse (Sets one Toroid in the T.M.U. to its selected state)
Tormat Memory Unit
Coin Buffers (4)
Buffer P.C.B.
Play Control
Scan P.C.B.
Reset
1St Digit
2nd Digit
Turn Off
Turn On
Assembly
4 coin switch lines
SEEBURG PHONOGRAPH SEQUENCE DIAGRAM
Amplifier
Mute Relay
Music
Read-Out
Sense
Positive sensing pulse (when a toroid resets)
Power Supply P.C.B.
Stand by
Stop Motor
Trip Relay
Motor Start
(Detent switch)
Read-out pulses
Mechan-ism
Transfer into scan
Trip Switch On
Play
Transfer into play
Subtract switch operates
Scan
1
2

FIG. 1

SEEBURG BATTERY TEST

(1) Remove tormat plug from control centre



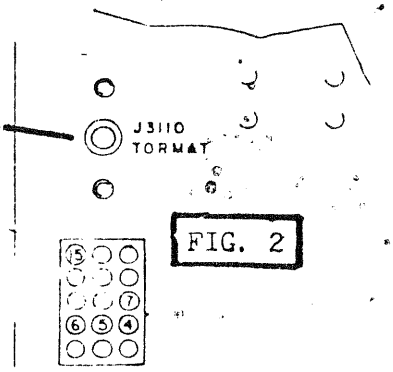


FIG. 2

Battery case is the negative pole

(2) Place positive pole of battery against the metal of control centre. Momentarily touch the centre post of the tormat plug to the negative pole.

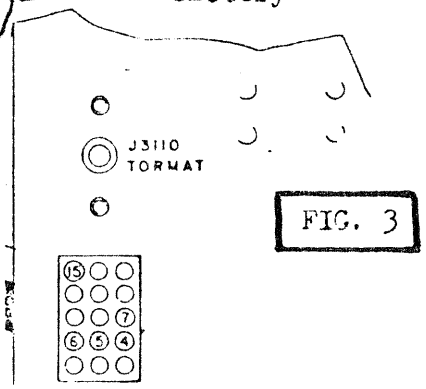
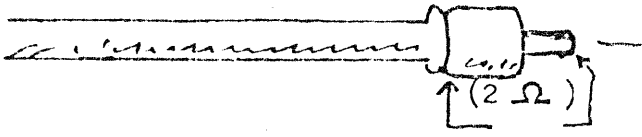


FIG. 3

(3) Re-insert the tormat plug into control centre



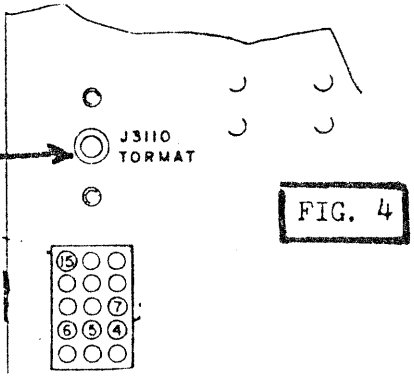


FIG. 4

(4) Operate manual scan start switch - all selections must now be picked up.

If not - check detent switch voltage (read source - read load), fig. 5
1/8 A fuse in control centre, clean mechanism contacts, fig. 6, fig. 8, fig. 9
measure 2 OHMS (Tormat cable). (Set meter to R x 1). fig. 4

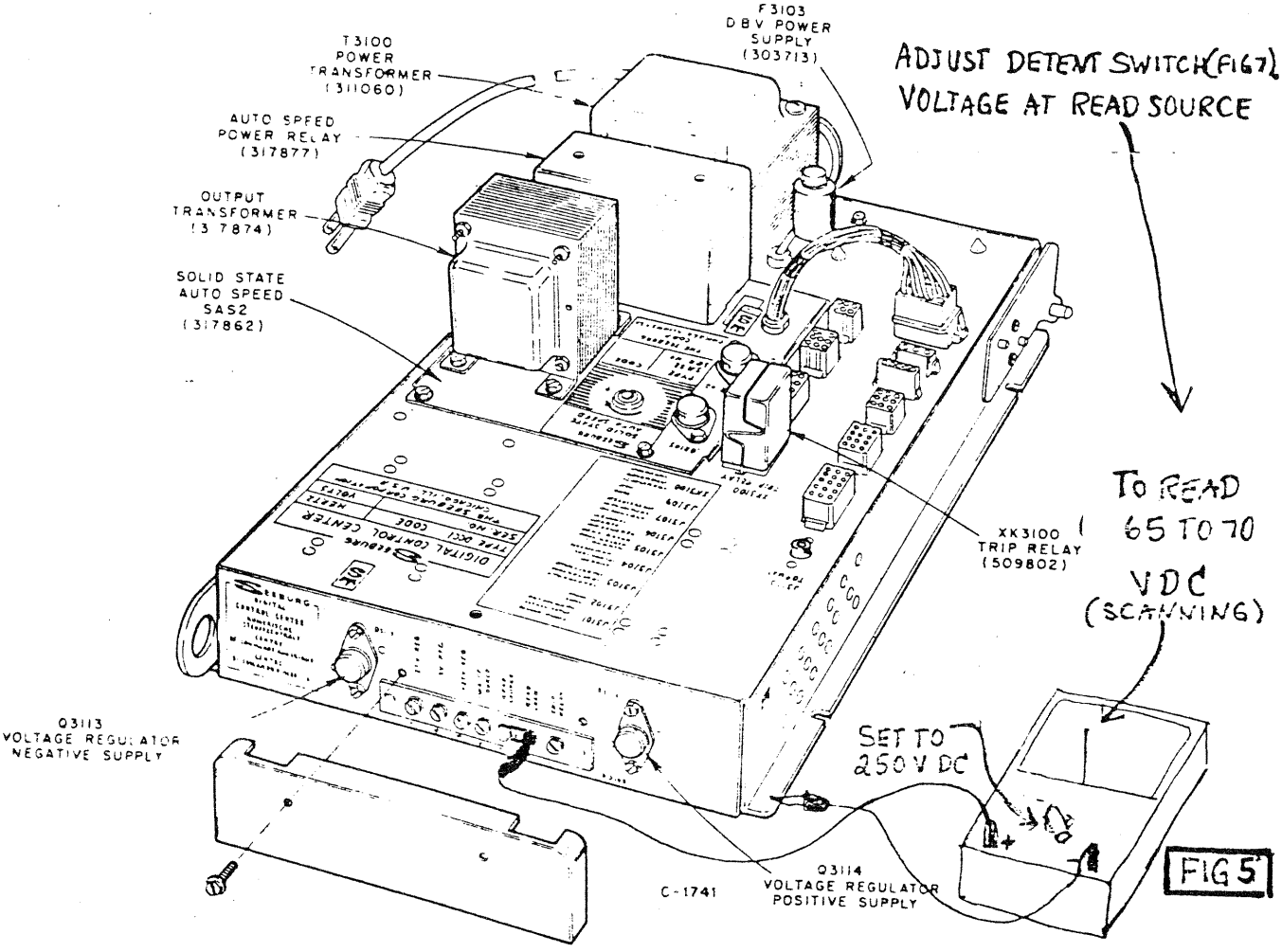
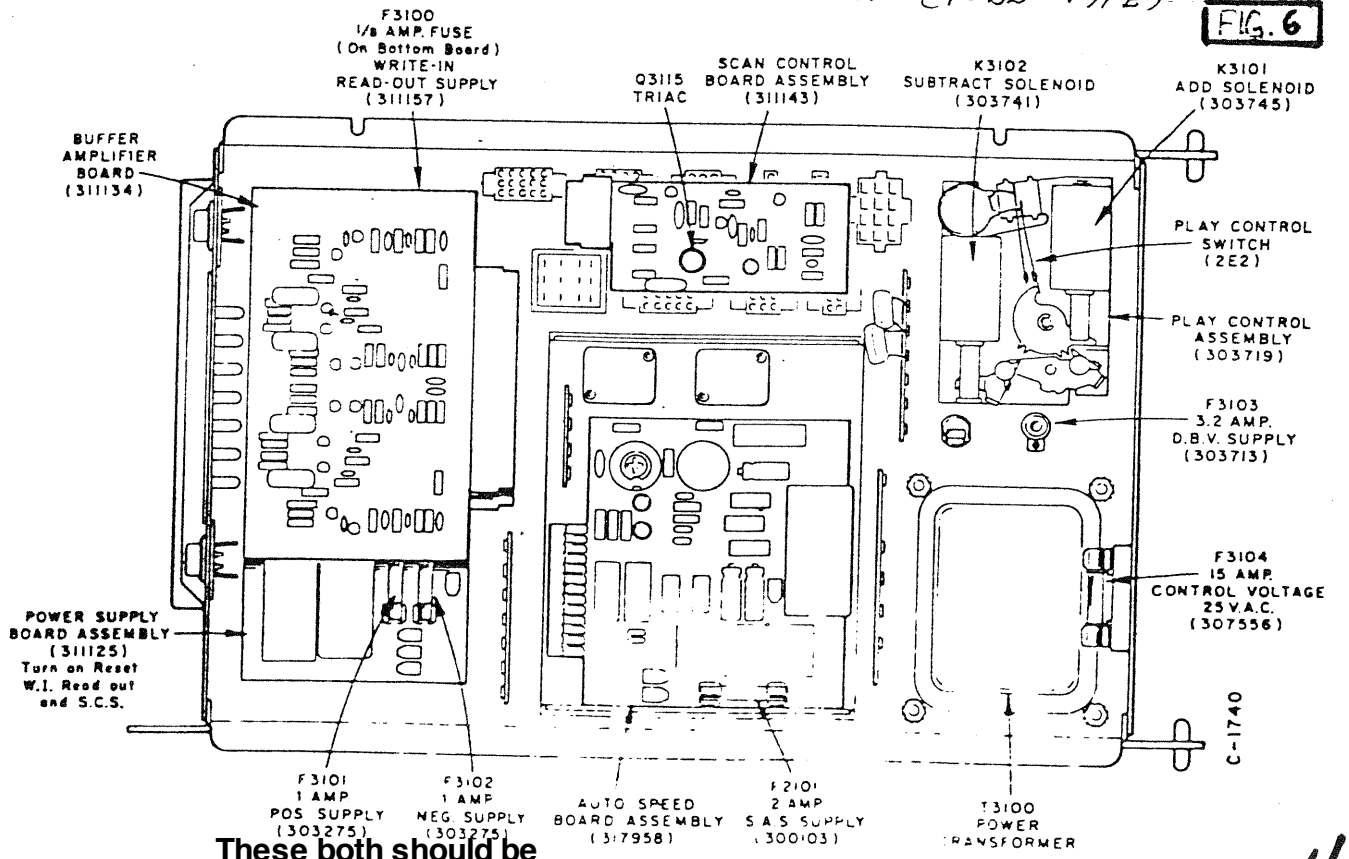


FIG 5

~~ON~~ G-H TERMINALS ON TS ~~FORMA~~CONTROL CENTERS (TUBE TYPE)

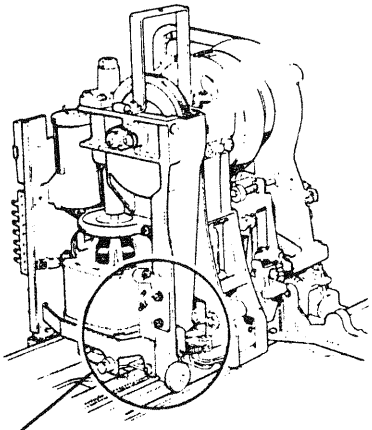
FIG. 6



These both should be 6/10 to 8/10A slow-blow fuses

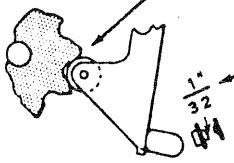
SELECT-O-MATIC MECHANISM ADJUSTMENTS

"DETENT SWITCH" – CONTACT GAP AND PRESSURE ADJUSTMENT



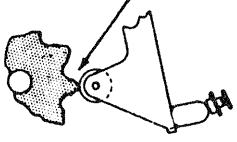
(A) Remove cover from switch stack.

(B) Place phonograph service switch in "OFF" position and turn motor coupling manually until actuator roller is engaged as shown.



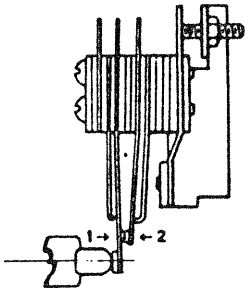
(C) Form bracer blades for 1/32 inch contact gap between blades 1 and 2. Maintain a bracer blade follow of at least .015" for each bracer blade.

NOTE: Do not bend contact blades in making this adjustment; bend only the bracer blades.



(D) Turn motor coupling so that actuator roller is on peak of sprocket tooth.

(E) Position Detent Switch on its mounting bracket so its actuator arm engages the center of the nylon fibre lift on the detent switch blade.



(F) Loosen hex nut on adjusting screw and turn the screw clockwise until switch contacts are open. Back off screw until contacts are just closed. Complete adjustment by continuing to turn the screw counter-clockwise 1 turn exactly. Tighten hex nut without turning screw. Contact pressure should now be 2 ounces minimum.

5

"DETENT SWITCH" - CONTACT GAP AND PRESSURE ADJUSTMENT

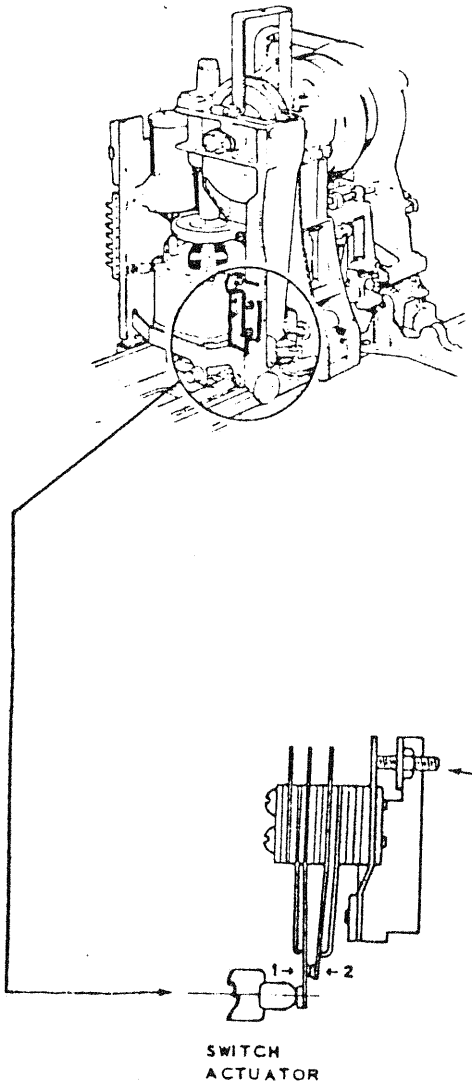


FIG. 7

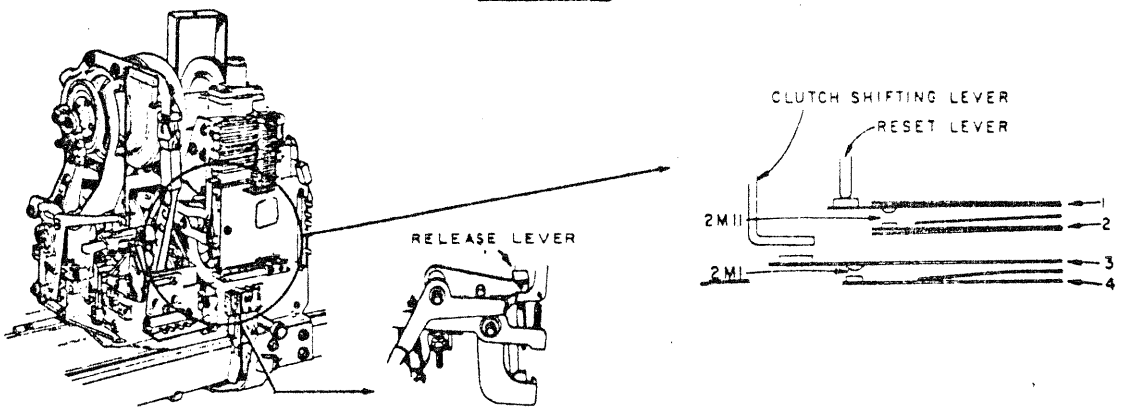
To clean these contacts, remove control centre power plug.

The detent switch contact tends to become badly pitted in time. A contact file may be used for correcting this condition. Eventually, however, the detent switch has to be replaced.

<u>This switch is the weak link in Seeburg phonos.</u>

"CLUTCH and RESET LEVER SWITCHES" CONTACT GAP and PRESSURE ADJUSTMENT for SELECT-O-MATIC "160" MECHANISM only

FIG. 8



NOTE: "Clutch 1" to "4" Mechanical Adjustments must be correct before adjusting these switches.

CONTACTS	CONTACT GAPS	CONTACT FUNCTIONS
2M11	3/64 inch gap when mechanism trips. Closed in SCAN and PLAY positions.	Part of Popularity Meter Solenoid Circuit. Allows operation of Solenoid when mechanism is transferring into PLAY position but prevents "Extra" operation when mechanism is transferring out of PLAY position. Also opens ground return of Auto-Speed Unit Power Control Relay Circuit.
2M1	1/64 inch gap in PLAY position. Closed during Transfer and SCAN.	Part of Trip Solenoid Circuit, opens circuit when mechanism trips from SCAN position.

- ADJUSTMENT PROCEDURE -

REFERENCE SCALE
THESE LINES SPACED 1/64" ACTUAL SIZE

1. Place mechanism in SCAN position and TURN OFF POWER.
2. Trip by manually lifting Release Lever. While mechanism is in this position:
   A. Bias blade 1 to within 1/16 inch of Reset Lever.
   B. Bias blade 2 against bracer blade and adjust blade 2 for 1/16 inch gap between 2M11 contacts.
3. Turn motor shaft manually until mechanism is in PLAY Position.
   A. Bias blade 3 so its fibre lift bears against Clutch Shifting Lever with 35 grams pressure.
   B. Bias blade 4 against its bracer blade and adjust bracer blade for 1/64 inch gap between 2M1 contacts.

"CAM SWITCH" -- CONTACT GAP AND PRESSURE ADJUSTMENTS

for SELECT-O-MATIC "160" MECHANISM only

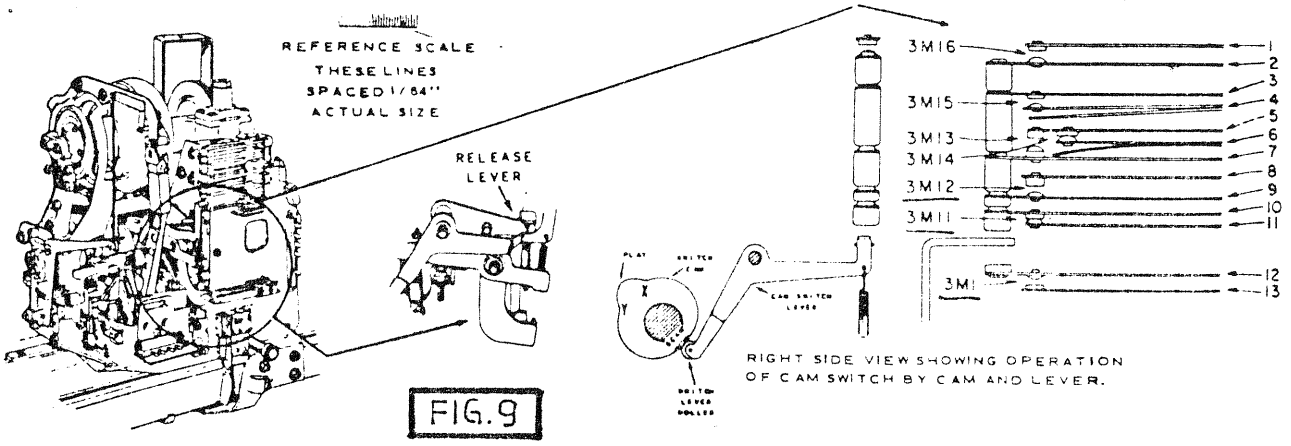


FIG. 9

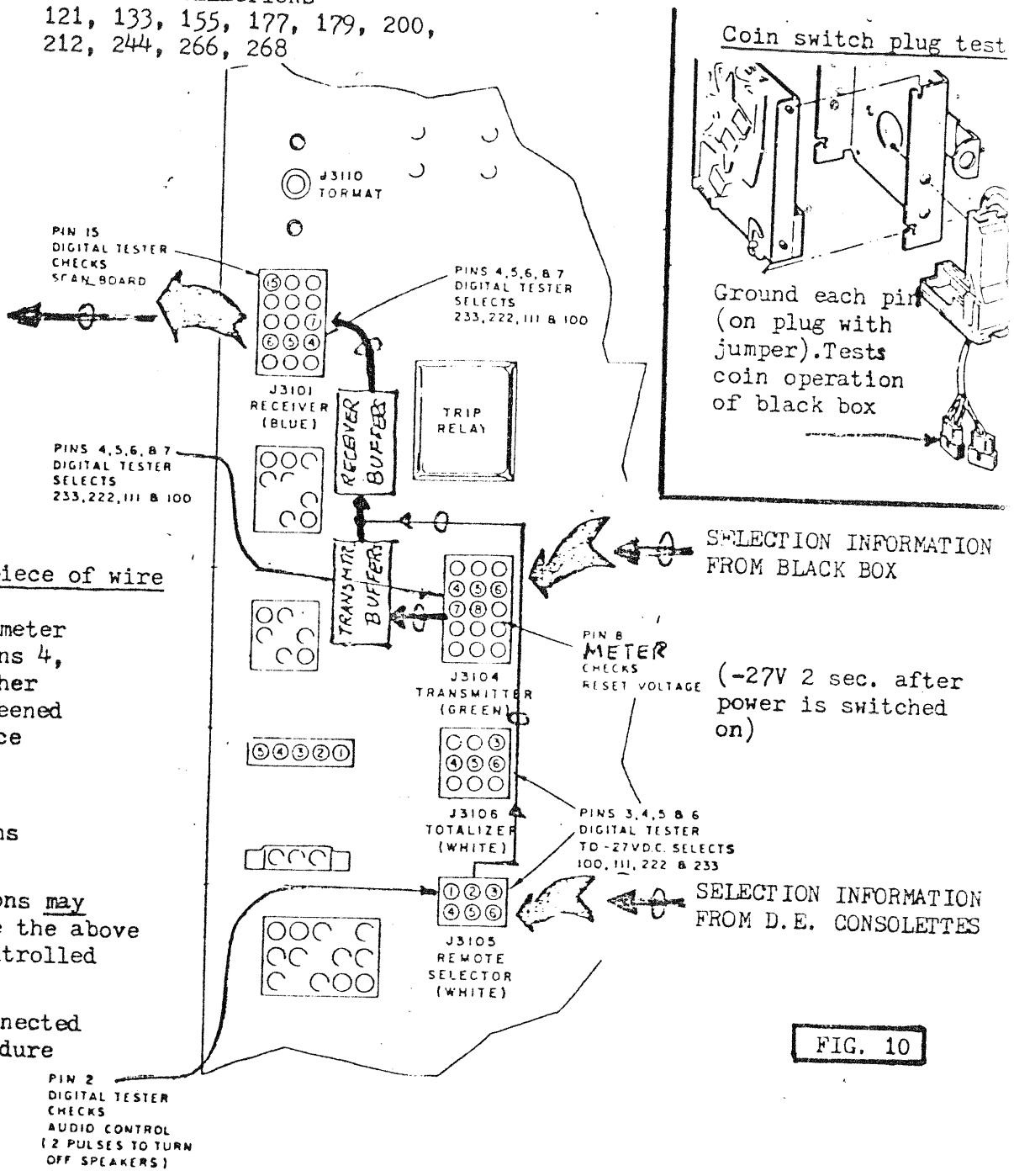
CONTACTS	CONTACT GAP	CONTACT FUNCTIONS
3M16	1/32 inch gap in SCAN. Closed only in PLAY.	In series with clamp arm switch, it completes power relay circuit in Auto-Speed Unit (if used).
3M15	3/64 inch gap in PLAY position. Closed in TRANSFER and SCAN.	Adds 1.65 mfd. condenser to motor circuit during TRANSFER and SCAN.
3M14	1/64 inch gap in PLAY position. Closed in SCAN position.	Part of popularity meter solenoid circuit. Just before the mechanism enters PLAY position the 3M13 and 3M14 contacts "Make and Break" controlling the pulse to the popularity meter solenoid.
3M13	1/32 inch gap in SCAN and during most of TRANSFER. Starts to close when record Clamp Disc first engages the turntable.	
3M12	1/32 inch gap in SCAN and during most of TRANSFER. Starts to close when record Clamp Disc first engages the turntable.	Trip Solenoid Circuit. Completes all circuits which can operate Trip Solenoid in PLAY position.
3M11	1/64 inch gap in play position. Closed during SCAN and part of transfer cycle.	Part of mute circuit. Maintains muting action of both channels of amplifier, during SCAN and part of transfer operation.
3M1	1/32 inch gap in PLAY position. Closed in SCAN position.	In holding circuit of trip relay.

- ADJUSTMENT PROCEDURE -

1. Place mechanism in Scan Position and TURN OFF POWER.
2. Trip mechanism by lifting release Lever and manually turn motor shaft until record Clamp Disc first engages the Turntable. (This places cam so Switch Lever Roller is at position X).
   - A. Bias Fiber lift of blade 10 against switch lever. (35 grams pressure)
   - B. Bias blade 9 against blade 10.
   - C. Bias blade 7 against blade 9 and adjust blade 8 for 1/32 inch gap at 3M12 contacts.
   - D. Bias blade 3 down so fiber lift touches blade 7 with 3M15 contacts closed (35 grams pressure). 3M12 contacts should still have 1/32 inch gap.
   - E. With 3M14 contacts closed (35 grams pressure) adjust for 1/32 inch gap in 3M13 contacts.
   - F. Adjust blade 12 so fiber lift just touches Switch Lever.
   - G. Adjust blade 13 for 1/32 inch gap in 3M1 contacts.
3. Turn motor shaft until mechanism is full in PLAY position (this places cam so switch Lever Roller is on PLAY position peak).
   - A. Adjust blade 11 for 1/64 inch gap in 3M11 contacts.
   - B. Adjust blade 4 for 3/64 inch gap in 3M15 contacts.
   - C. Adjust blade 6 for 1/64 inch in 3M14 contacts.
4. Trip mechanism by lifting Release Lever and manually turn motor shaft until clamp disc begins movement away from turntable. (This places cam so Switch Lever Roller is at position Y).
   - A. Check for 1/32 inch gap in 3M13 contacts with 3M14 closed (35 grams pressure).
   - B. Check to see that blade 10 bears against Switch Lever.
   - C. Check for 1/32 inch gap in 3M12 contacts.
5. Trip and operate mechanism until it is in SCAN position.
   - A. Adjust blade 2 so fiber lift bears lightly against blade 3.
   - B. Adjust blade 1 for 1/32 inch gap between 3M16 contacts.
   - C. Adjust blade 13 for 40 grams pressure.

8

MAKE TEST SELECTIONS
121, 133, 155, 177, 179, 200,
212, 244, 266, 268



Digital tester - piece of wire
Selection test:
Insert wire (i.e. meter test lead) into pins 4, 5, 6, 7 and run other end across silkscreened instructions on face of control centre chassis.

Indicated selections must be made.

Some other selections may also be made, since the above test produces uncontrolled pulses.

Leave blue plug connected for this test procedure

Green plug may be disconnected.

FIG. 10

DIGITAL SELECTION PHONOGRAPH
"CONTROL CENTRE PLUG & PIN DIAGRAM"

Represents 4 data lines

NOTE:

When checking a particular selector switch, consult the DES1 Schematic Diagram, Figure 4. Disconnect edge connectors from DES1 and connect a continuity tester to proper printed board contacts associated with selector switch being checked.

Main Trigger Switch –

The Main Trigger Switch should operate with 1/8 inch to 5/32 inch of any selector switch stem travel. (not necessarily selector button travel).

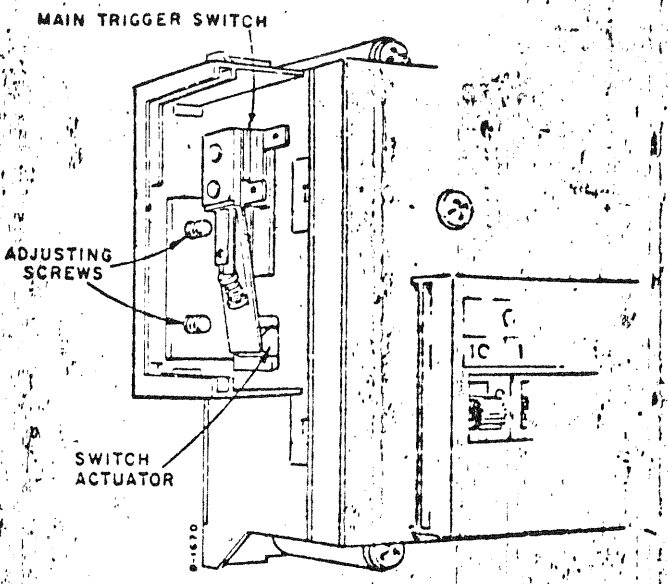


Figure 3. Trigger Switch Adjustment.

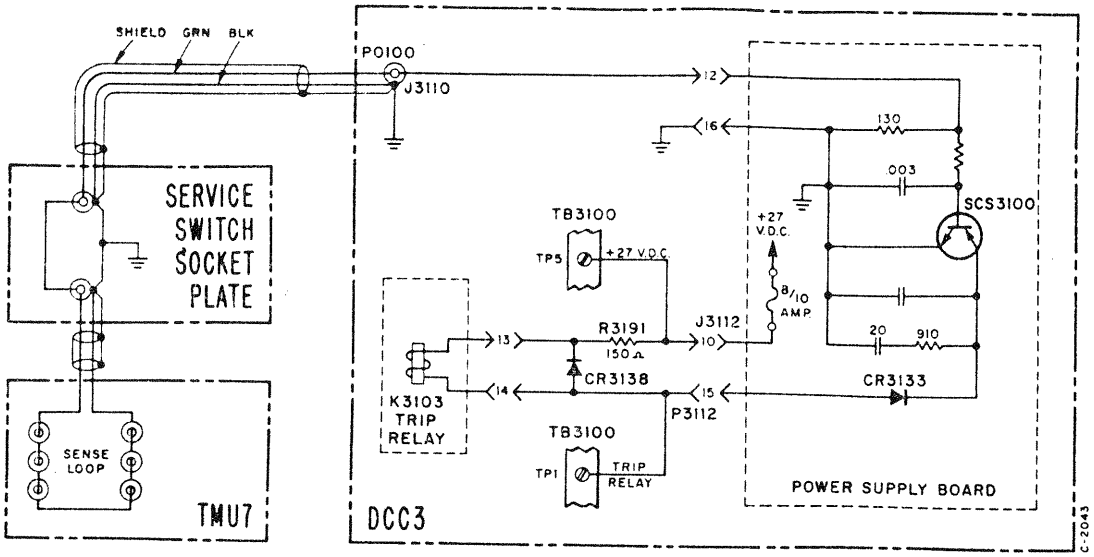
		DIGITAL SELECTOR BUTTONS										STAND-BY
		0	1	2	3	4	5	6	7	8	9	
DATA LINES	A	1	1	1	0	0	0	0	1	1	1	1
	B	1	1	0	1	1	0	1	1	0	0	1
	C	1	0	1	1	1	1	0	0	0	1	1
	D	0	1	1	1	0	1	1	0	1	0	1
FOUR PART DIGITAL CODES-QUADRIBITS DEVELOPED BY DES1												

Figure 4. Four-Part Digital Codes – Quadribits.

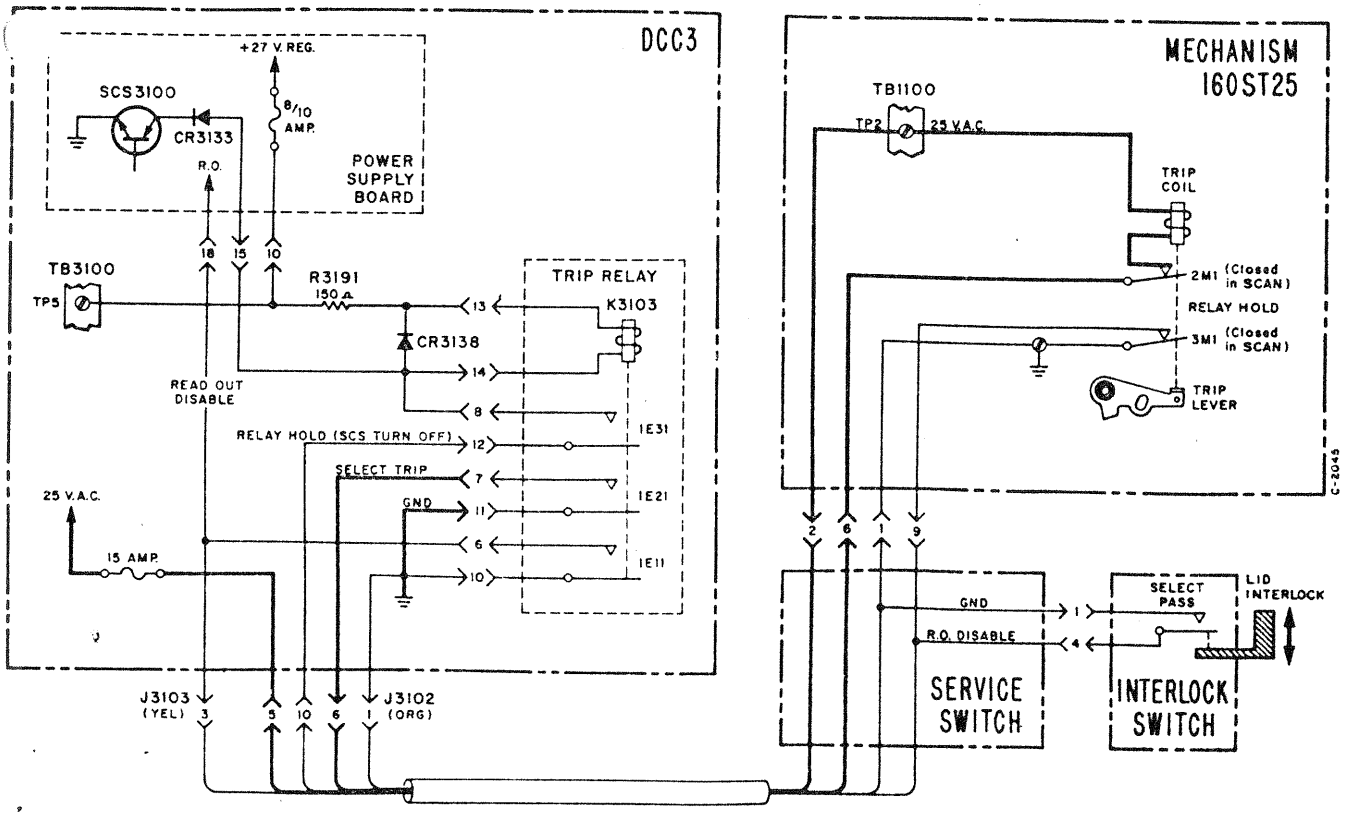
FOUR PART DIGITAL CODE – QUADRIBIT

Three quadribits make up a three digit selection address. From Figure 4, a particular selection address can be shown. The three quadribits for the three digit selection 156 would be 0010 for the hundreds digit "1", 0011 for the ten's digit "5", and 0101 for the units digit "6".

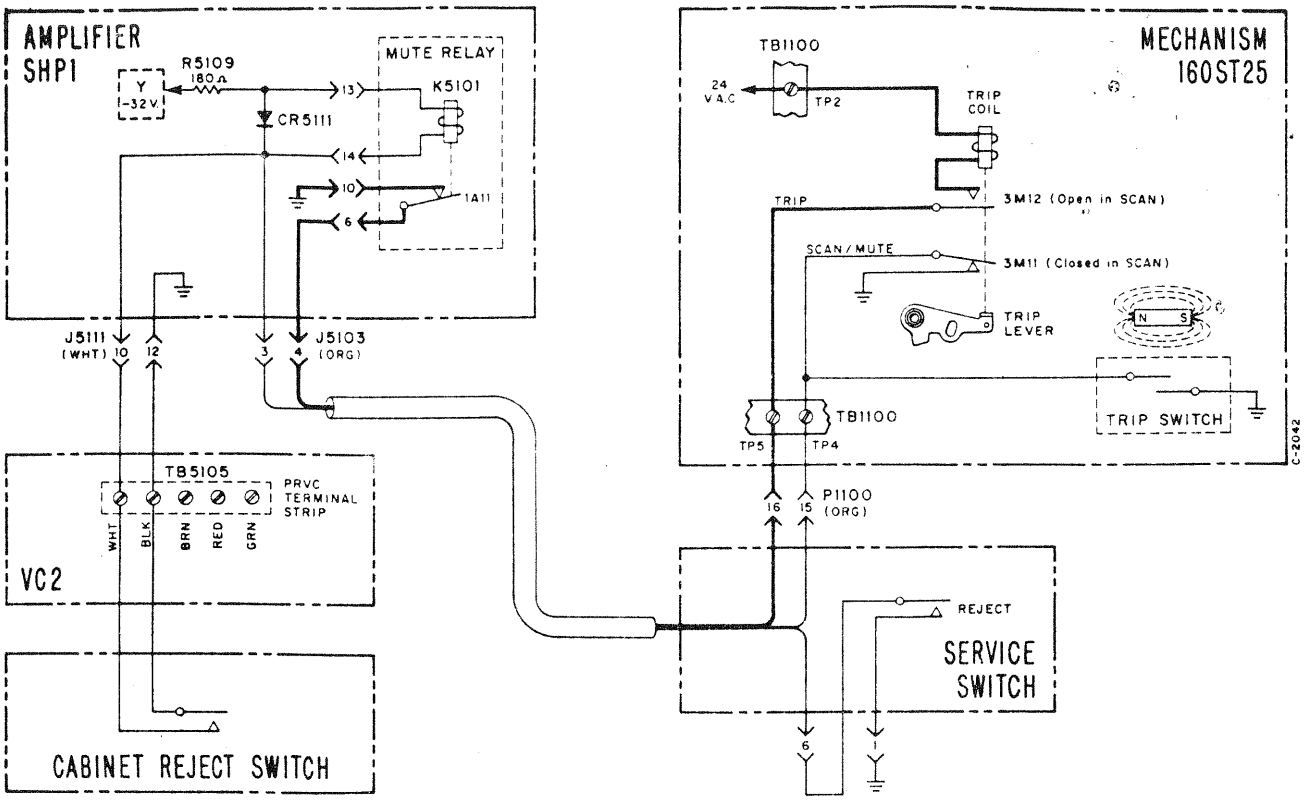
The 0's of the quadribit are gound pulses. The 1's are - 6VDC levels - normal condition of data lines. Pressing button "5" approximately 1/16 inch, closes two switch segments 5S1 and 5S2, see Figure 5. Switches 5S1 and 5S2 connects credit set line "BB" (single credit - 2nd and 3rd digit) to data lines A and B, approximately 1/16 inch further travel of button "5" will close main trigger switch S3417. A ground pulse then appears on set line "BB", which passes through closed switch segments 5S1 and 5S2 to the A and B data lines. The data lines provide a path to the quadribit storage area in DTP1.



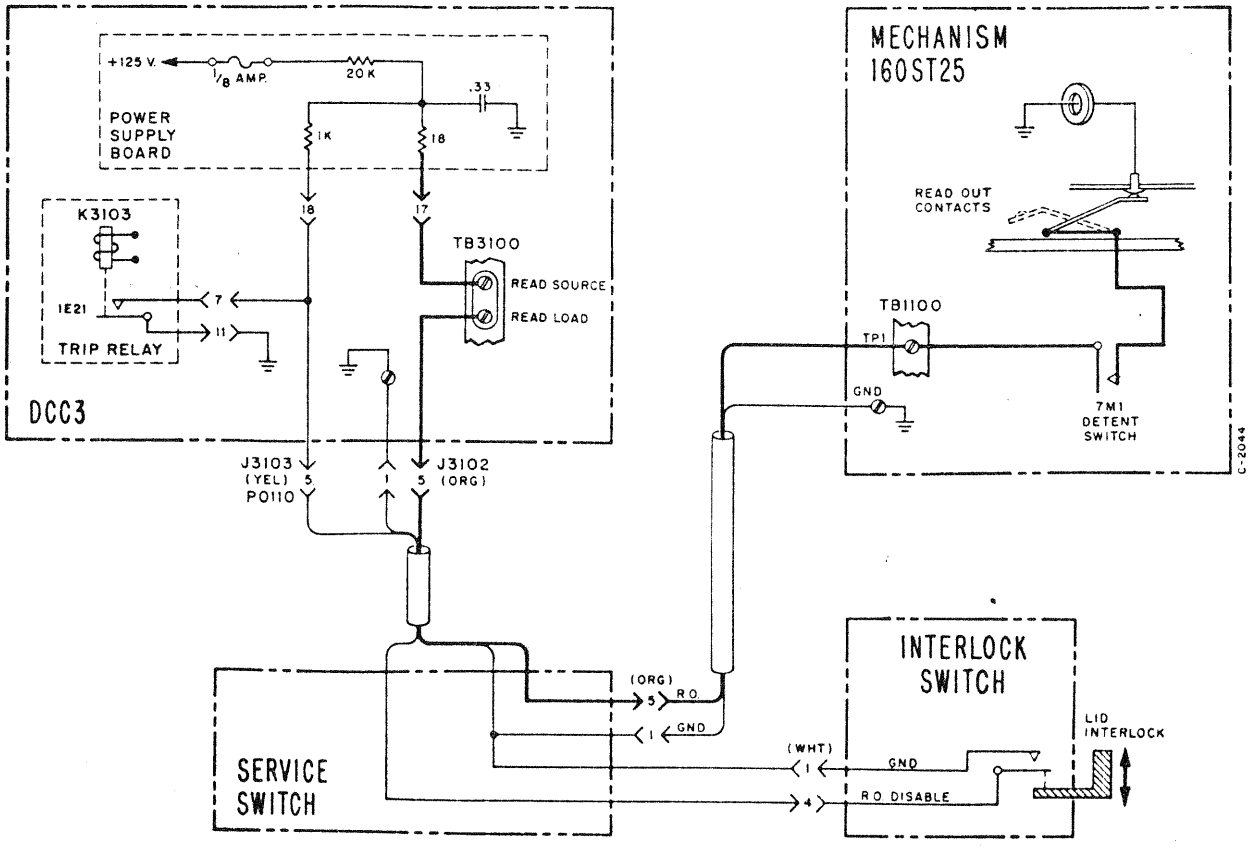
" SENSE & TRIP RELAY " SERVICE DIAGRAM



" SELECT TRIP " SERVICE DIAGRAM

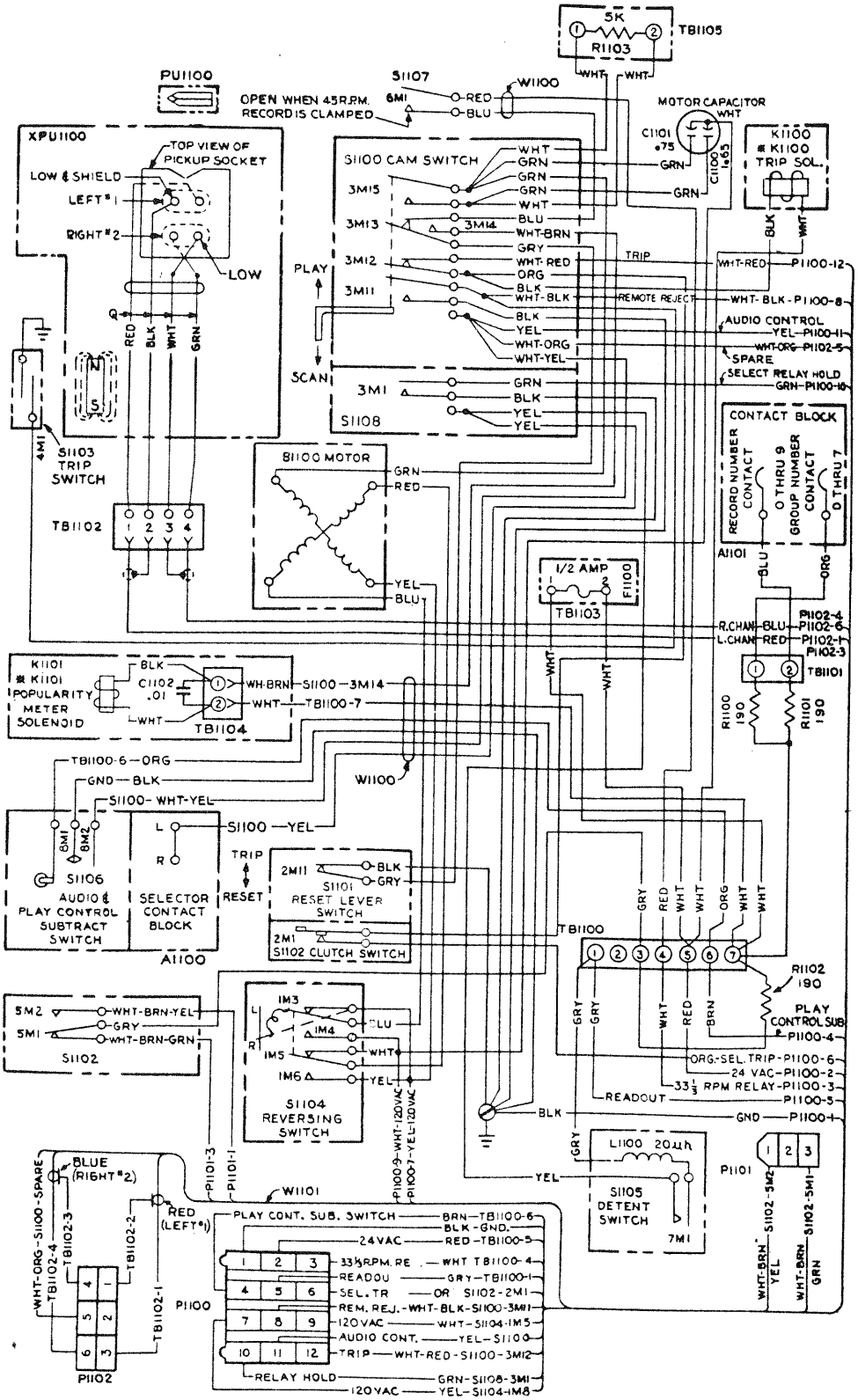


"CANCEL TRIP" SERVICE DIAGRAM



"READ-OUT" SERVICE DIAGRAM

SELECT–O–MATIC MECHANISM, Type 160ST25

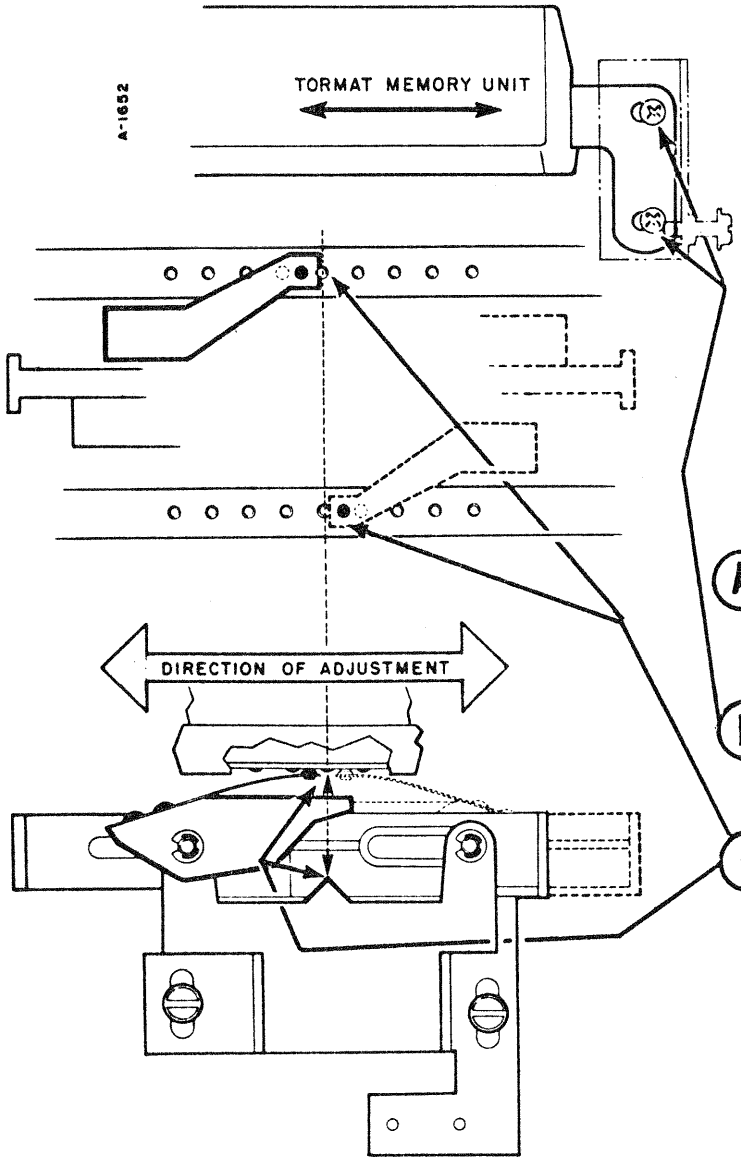


SELECT-O-MATIC MECHANISM ADJUSTMENT

"TORMAT MEMORY UNIT POSITION"

This adjustment positions the Tormat Memory Unit so the Read Out Contacts and Tormat Contacts will be correctly aligned for tripping the mechanism at the selected record.

NOTE 1:
If for any reason the Tormat Memory Unit is removed from the mechanism the Read Out Contact Block adjustments must be checked and, if necessary corrected before making the Tormat adjustment. This may be done with a preliminary lateral adjustment of the unit by placing the mechanism at 245 and mounting it on the magazine with rear Read Out Contact in engaged position, just touching contact rivet for adjacent selection 244 (to the left of the contact for 245).



NOTE 2:
The Tormat Memory Unit and the Read Out Contact Block positions are related so each must be checked if any one is changed.

Check "Clutch 3" for minimum carriage side play, also check "Magazine" and "Transfer Arm 1" adjustments before making this adjustment.

A Place the mechanism in PLAY position at record space 245 near the center of the magazine and turn off power.

B Loosen the two mounting screws at each end of the Memory Unit.

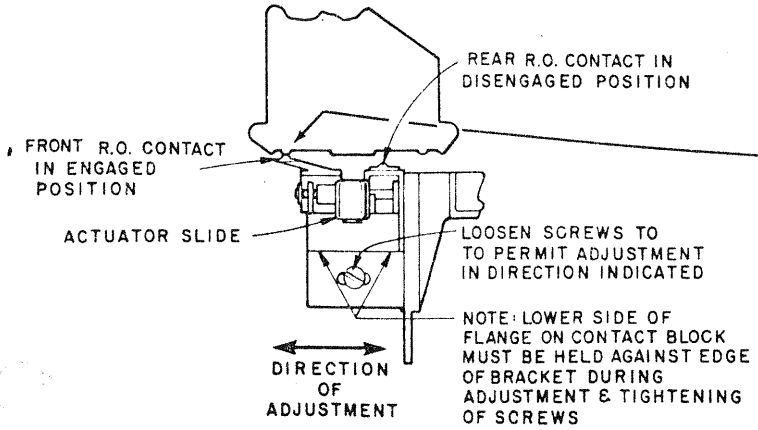
C Adjust lateral position of the Tormat Memory Unit so that contact rivets on the Tormat Memory Unit are positioned either side of the Read Out Contact. Reference point on Read Out Block housing should be in line with the center line of the 245 - 145 rivets on the Tormat Memory Unit. Check alignment at 100-200 and 179-279.

SELECT-O-MATIC MECHANISM ADJUSTMENT

"READ-OUT CONTACT BLOCK 1" – HORIZONTAL POSITION

This adjustment positions the Read-Out Contact Block horizontally (front to back) and determines proper alignment of the Read-Out Contacts and the Tormat contact rivets.

NOTE:
The Tormat Memory Unit and the Read-Out Contact Block positions are related, so each must be checked if either one is changed.



(A) Place the mechanism in Play position near the center of the record magazine at 245 and turn off power.

(B) Loosen adjustment screws.

(C) Adjust Read-Out Contact Block in horizontal direction as indicated so that the front Read-Out Contact is exactly centered on the front contact rivet of the Tomat Unit ± .010 inches.

(D) Securely tighten adjusting screws.

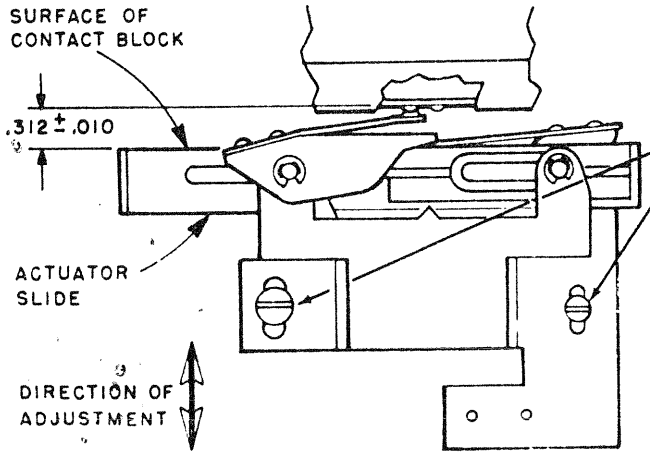
(E) Check adjustment of rear Read-Out Contact by shifting actuator slide.

(F) Form rear Read-Out Contact if necessary to ensure proper centering.

"READ-OUT CONTACT BLOCK 2" – VERTICAL POSITION

This adjustment positions the Read-Out Contact Block vertically to assure proper contact pressure and movement of the wipers.

NOTE:
The Tormat Memory Unit and the Read-Out Contact Block positions are related, so each must be checked if either one is changed.



REFERENCE: .321 inch is at 5/16 inch.

(A) Place the mechanism in Play position near the center of the record magazine at 245 and turn off power.

(B) Loosen adjustment screws.

(C) Adjust Read-Out Contact Block in vertical direction so that the top surface of the actuator slide is .312 inch from the surface of the Tormat Memory Unit.

(D) Securely tighten adjusting screws.

NOTE: Edge of bracket must be against flange on casting during adjustment and tightening of screws.

(E) Check adjustment at the end record positions of the magazine.

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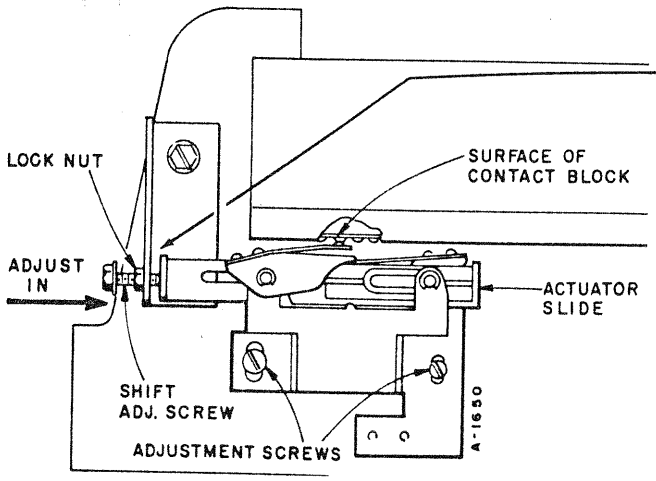
" READ OUT CONTACT BLOCK 3 " – ACTUATOR SCREW ADJUSTMENT

This adjustment positions the Read-Out Contact Block shifting screws for proper shifting of Read-Out Contacts.

NOTE: Read-Out Contact shifting adjustment is dependent on Tormat Memory Unit position. If Tormat Memory Unit position is changed, check shifting adjustment.



(A) Place the mechanism in play position at end of magazine at record space 100-200 with shifting screw backed out.

(B) Shift the actuator slide to its extreme position in the direction towards the screw.

(C) Adjust the screw inward until it just touches the actuator slide. Advance the screw inward 3 full turns and lock into position with lock nut.

(D) Repeat above at position 179 - 279 for opposite actuator screw.

NOTE:
Moving the carriage from the 179 - 279 or the 100 - 200 position towards the actuator adjustment screws, the Read-Out Contacts should change positions and be fully engaged when the carriage has traveled 5/16 inch in the overtravel direction.

16

SEEBURG

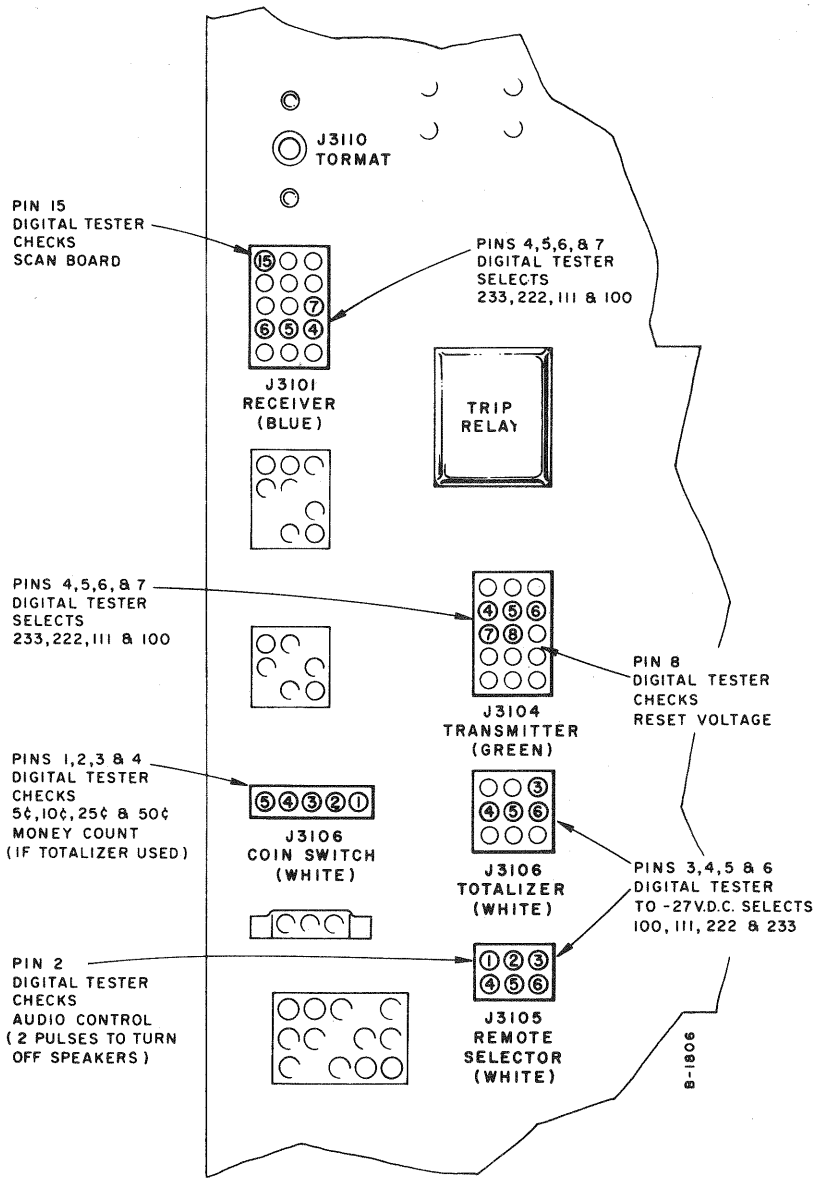
SEEBURG PHONOGRAPH

SEEBURG MICROLOG

TROUBLE SHOOTING GUIDE

DIGITAL CREDIT and SELECTION SYSTEM

THE SEEBURG SALES CORPORATION
CHICAGO • ILLINOIS 60622 U.S.A.



DIGITAL SELECTION PHONOGRAPH
"CONTROL CENTER PLUG & PIN DIAGRAM"

SEEBURG TROUBLE SHOOTING GUIDE

DIGITAL CREDIT and SELECTION SYSTEM

TROUBLE	SYMPTOM	CORRECTION PROCEDURE
1. FAILURE TO ADD CREDIT PROPERLY (Always check plugs and cables for pin alignment and broken wires)	A. For Manual Credit Switch	1. Check Coin Switch Plugs and Service Switch Assembly. A. Reverse Coin Switch Plugs; solid colored wire plug to solid colored wire jack. (Does not apply to LS3). B. Service Manual Credit Switch.
	B. For particular coin	1. Check Slug Rejector Alignment and Coin Switch Adjustment. See "Service Manual" and "Installation and Operation Manual" 2. Check Black Box (DTP1) and Pricing Program Board Operation. A. Insert Digital Tester probe into pin of Black Box (DTP1) coin switch jack of suspect coin wire and ground aligator clip. B. Replace Pricing Program Board if no credit is established and any of the diodes front to back resistance measures open or shorted with an Ohm meter. See service manual. C. Replace Black Box (DTP1) if Pricing Program Board was replaced and trouble persists.
	C. For all Coins and Manual Credit Switch or Credit established when Power is turned on.	1. Check Control Center Voltages, –27VDC, –13VDC and Reset Voltage (main power off and on 2 second delayed –27VDC). A. Measure with a DC Voltmeter or Digital Tester between ground and the –27V and –13V Test Points on Control Center chassis TB3100. B. Replace Control Center if the difference between –27VDC and –13VDC is greater than 15.5 VDC. C. Connect Aligator Clip of Digital Tester to ground and insert Probe in pin 8 of the wire side of the green plug. D. Replace Control Center if there is no delay in lightning the Digital Tester Lite when main power is turned on. 2. Check the Black Box (DTP1) and Pricing Program Board. A. Replace Pricing Program Board if any of the diodes are defective as above. B. Replace Black Box (DTP1) if Pricing Program Board was replaced and trouble persists.
2. FAILURE TO SUBTRACT CREDIT PROPERLY (Reset Lamp May or May Not Light)	A. On Singles, on Albums, or on Both.	1. Check the Control Center –27VDC and –13VDC. A. Measure voltages in Control Center as above. B. Replace Control Center if difference of –27VDC and –13VDC is greater than 15.5VDC as above. 2. Check the Key Board – Main Trigger Switch, Number Button Contacts and Album Single Switches if used. A. Adjust Main Trigger Switch if 1st and 2nd Digit Light comes on with one button push or if main trigger switch closes early turning on Reset Light. B. Replace Key Board or Clean and Lubricate Button Contact Printed Circuit Board if Main Trigger Switch is closing properly and the Reset Light comes on. Special Contact Lubricant, Part No. 53042. C. Replace Album Single Switch Board (if used) or Clean and Adjust Switches or Reset Light comes on when pushing 2nd Digit or Extra Credit is accumulated when making a selection. 3. Check the Black Box (DTP1) or Pricing Program Board. A. Replace the Pricing Program Board if any diode is defective as above. B. Replace Black Box (DTP1) if Pricing Program Board was replaced and trouble persists.
3. FAILURE TO PICKUP SELECTED RECORD. (Always check plugs and cables for pin alignment and broken wires)	A. Credit is subtracted but mechanism does not scan. Mechanism does not scan when service is operated.	1. Check Motor Power, Control Power and Play Control Assembly. A. Service Motor Power– 117 VAC if Play Control add coil pulls in and sets ratchet two teeth. 1. Motor On/Of Switch, Play Control Assembly in Control Center. 2. Reversing Switch, Mechanism. 3. Auto Speed Relay Contacts or Dummy Plug (if used). B. Service Control Power – 25VAC if Play Control Add Coil fails to pull in. 1. 15 Amp Fuse – Control Center. 2. Bind in Play Control Assembly.

TROUBLE	SYMPTOM	CORRECTION PROCEDURE
3. FAILURE TO PICKUP SELECTED RECORD **CONTINUED –**	B. Credit is subtracted but mechanism does not scan. Mechanism scans and selected records are picked up when service switch is operated.	1. Check Scan Board Operation, by inserting Probe of Digital Tester in wire side of pin 15 of Blue Plug on Control Center and ground Aligator Clip. A. Replace Scan Board if Mechanism fails to Scan. B. Replace Gray Box (DRD1) if Mechanism scans.
	C. Credit is subtracted but mechanism does NOT scan. Mechanism scans but selected record is NOT picked up when service switch is operated.	1. Check Selection Data Transmission System. A. Divide System, insert Digital Tester Probe in pins 4, 5, 6 and 7 of wire side of Green Plug and scrape Aligator Clip on ground. B. Make Four Standard Selections. Check to see if Proper selections were made in sequence. 1) Pin 7 D Data Line Selects 100. NOTE: Additional selections 2) Pin 6 C Data Line Selects 111. may be obtained. 3) Pin 5 B Data Line Selects 222. 4) Pin 4 A Data Line Selects 233. C. Replace Black Box (DTP1) if Standard Selections are picked up. 2. Check remaining Selection Data Transmission System. A. Divide remaining System, insert Digital Tester Probe in pins 4, 5, 6 and 7 of wire side of Blue Plug and scrape Aligator Clip on ground. B. Make Four Standard Selections, check to see if proper selections were made as above. C. Replace Control Center, if all selections were picked up. D. Replace Grey Box (DRD1), if any selections were missed. E. Replace Control Center, if all selections were missed.
	D. Credit subtracted but mechanism scans twice and stops.	1. Check Write In, Read Out, Sense, and Trip. A. Charge Memory Unit with 1–1/2 Volt battery, tip of Sense Loop to negative case of battery, positive post of battery to ground. B. Re-insert Sense Loop Plug into Control Center and scan Mechanism. 2. Write In Trouble, if all selections are picked up. A. Replace Grey Box (DRD1), if Write In voltage is less than 105 V measured at test point 4 on Control Center with a DC voltmeter. 3. Sense or Trip Trouble if no record is picked up. A. Service 2M1 Contact (if used) when no record is picked up with Aligator Clip of Digital Tester is grounded and Probe placed on Trip Relay Test Point of Control Center and Mechanism is scanned. B. Replace Control Center if no record is picked up when probe of Digital Tester is inserted into Sense Socket of Control Center, Aligator Clip on Positive Post of 1–1/2 volt battery, Negative Case Grounded and Mechanism scanned. 4. Read Out Trouble if no or only a few records are picked up. A. Replace Control Center if Mechanism picks up all Records with Read Out Link Pivoted to Trip Relay Test Point. B. Service Detent Switch (7M1) or Contact Block if Mechanism fails to pick up all Records with Read Out Link Pivoted to Trip Relay Test Point. (Inspect Read Out wiring on Mechanism)
4. PICKS UP WRONG SELECTIONS (Make Standard Selections to develop Symptom Pattern–100, 111, 222, 233, 144, 155, 166, 177, 178, 179, 101, 102, 103, 110).	A. Group 1 Failure – 100, 111, 222, 233.	1. Check Selection Data Transmission System. (Trouble procedure 3, Symptom C). 2. Replace Grey Box (DRD1) if more than the Standard Selections play.
	B. Group 2 Failure – 144, 155, 166, 177, 178, 179.	1. Repair or Replace Keyboard if one or more Number Buttons causes repeated wrong Selections (such as when 177 is selected, 100 plays). 2. Replace Grey Box (DRD1) if more than the Standard Selections play or if any are missed.
	C. Group 3 failure –101, 102, 103, 110.	1. Replace Black Box(DTP1) if any Standard Selections fail to play. (See Trouble procedure 3, Symptom C).

SEEBURG

PRICE-SETTING INSTRUCTIONS

(PART 3)

BY RON NICHOLSON

SEEBURG CREDIT UNIT PRICING BOARD SETTINGS
NOTE:

If the album level is not set on the pricing board, the pricing will default to a level of one step. So if an album selection is made, it will be allowed if there is any credit on the machine at all.

Moreover, no subtractions will be made if an album is selected, EVEN IF THE ALBUM DEBIT SETTINGS ARE PROPERLY SET!

So if the pricing board is to be used in a machine with album switches, even if albums are not used, set the album level and album debits on the pricing board. Otherwise, if a bank of records is thrown accidently to the album position, the machine may jackpot.

The album level and album debits may be set to the same values as the corresponding settings for singles. Then all selections will be vended at the same price.

ALSO NOTE:

In the pricing example given, the price of play is 2/25¢.

Since the single level was set at 1, no credit was given on individual nickels and dimes until 25¢ was deposited.

The customer must deposit a minimum of 25¢ and play at least 2 records; he may not play one for 15¢.

If the following settings are used instead, he can. This illustrates the minor gain in flexibility we mentioned previously.

single level	3	
album level	6	
50¢ switch	15	(5 singles or 2½ albums)
25¢ switch	6	(2 singles or one album)
Bonus 2 (50¢)	3	(increases 2 x 6 = 12 to 15)
dime	2	
nickel	1	
Bonus 1 (25¢)	1	(increases 5 credits to 6)
Single debit	3	
Album debit	6	

If the customer deposits 15¢, he will receive 3 steps, enough for a single. If he deposits an additional ten cents, bonus 1 will award the additional step needed for two singles or one album.

(3) dH

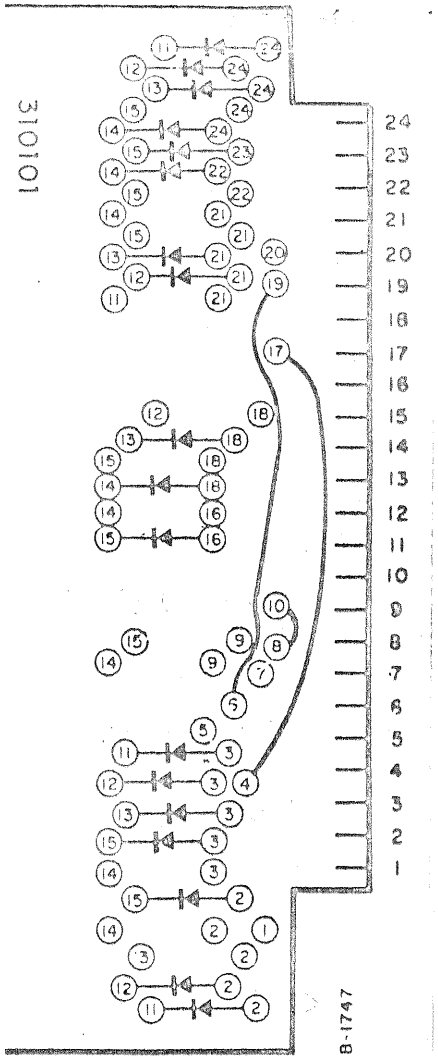
SPECIFIC PRICING EXAMPLES

PRICING			50¢	25¢	50¢ B-2	10¢	05¢	25¢ B-1	A-1 SGL	A-2	A-3	NOTES	
6/25¢	15/50¢	5¢ play	15	6	3	2	1	1	1	2	3	Max 30/$1	
3/25¢	7/50¢	10¢ play	14	6	2	2	1	1	2	n/a	6	Max 15/$1	Albums ≠ 2
	6/50¢	10¢ play	12	6	0	2	1	1	2	n/a	6	Same	
	7/50¢	25¢ min.	7	3	1	0	0	3	1	2	3	Max 30/$1	
	6/50¢	25¢ min.	6	3	0	0	0	3	1	2	3	Same	
STRAIGHT 10¢ PLAY			10	5	0	2	1	0	2	n/a	6	Max 15/$1	Albums ≠ 2
2/25¢	6/50¢	15¢ play	18	6	6	2	1	1	3	6	n/a	Max 10/$1	Albums ≠ 3
	5/50¢	15¢ play	15	6	3	2	1	1	3	6	n/a	Same	
	6/50¢	25¢ min.	6	2	2	0	0	2	1	2	3	Max 30/$1	
	5/50¢	25¢ min.	5	2	1	0	0	2	1	2	3	Same	
STRAIGHT 15¢ PLAY			10	5	0	2	1	0	3	6	n/a	Max 10/$1	Albums ≠ 3
STRAIGHT 2/25¢ PLAY			4	2	0	0	0	2	1	2	3	Max 30/$1	
1/25¢	4/50¢		4	1	2	0	0	1	1	2	3	Max 30/$1	
	3/50¢		3	1	1	0	0	1	1	2	3	Same	
	2/50¢		2	1	0	0	0	1	1	2	3	Same (STRAIGHT 25¢ PLAY)	
1/50¢	4/75¢	********	0	0	0	1	0	5	2	n/a	6	Album ≠ 2	
	3/75¢	See Note	0	0	0	1	0	3	2	n/a	6	Same	
	2/75¢	********	0	0	0	1	0	1	2	n/a	6	Same	
STRAIGHT 50¢ PLAY			0	0	0	1	0	0	2	n/a	6	Same	

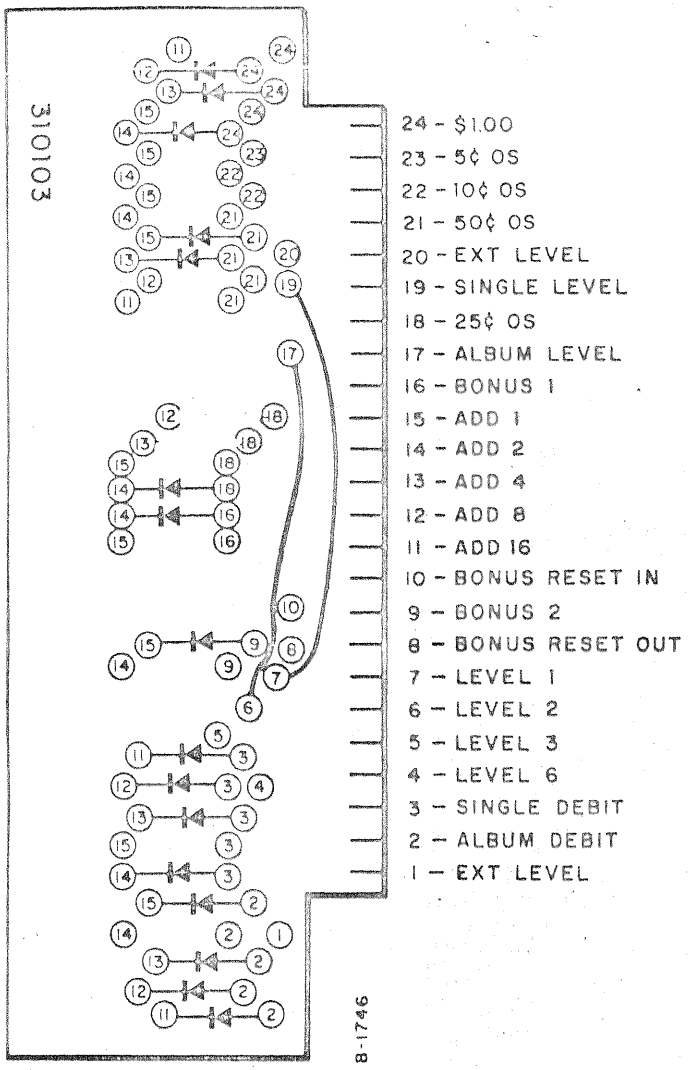
*****NOTE: In all 50¢ play settings, all coins but QUARTERS are disabled. Quarters trip 10¢ switch.

« IN ALL CASES » If B-2 is 0, jump terminals (8) and (10) on the pricing board.
If albums equal one single, use SGL listing; or else use A-2 or A-3 listing.
Set single debit equal to a single setting; album debit equal to album setting.
$1 bill setting is (credits for $1) times (SGL listing shown).

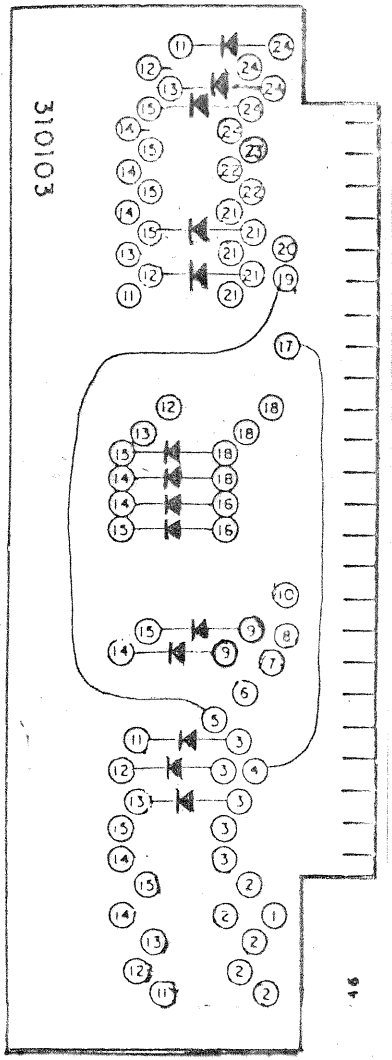
This concludes the series on Seeburg price setting instructions.



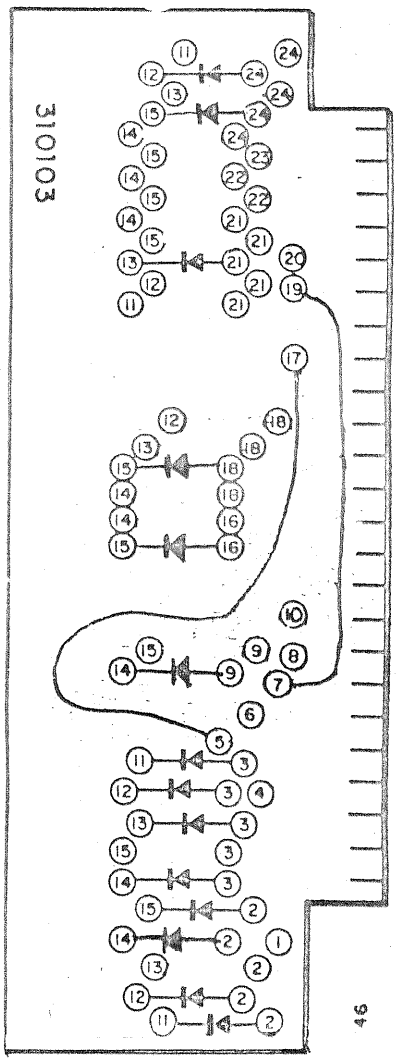
3/25¢
7/50¢
14/$1.-



2/25¢
5/50¢
10/$1.-

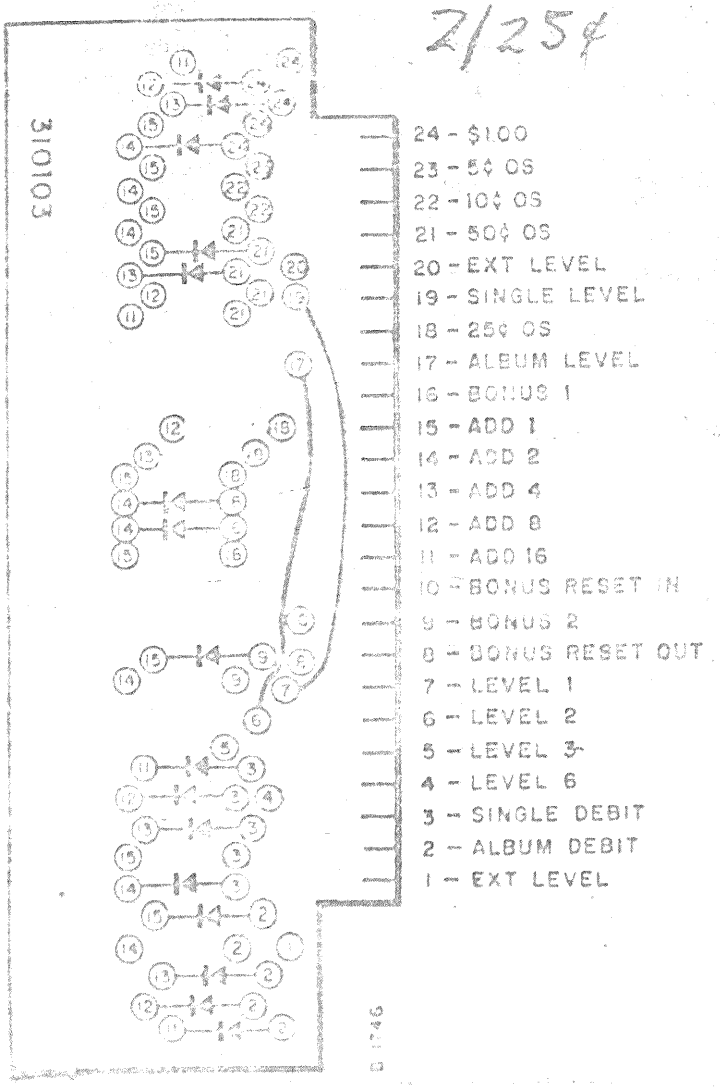


1/25¢
3/50¢
6/$1.-

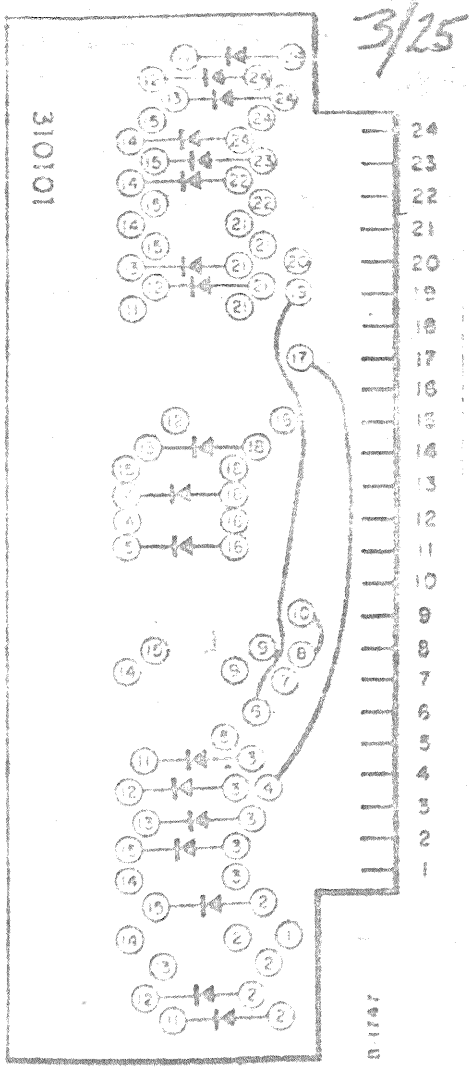


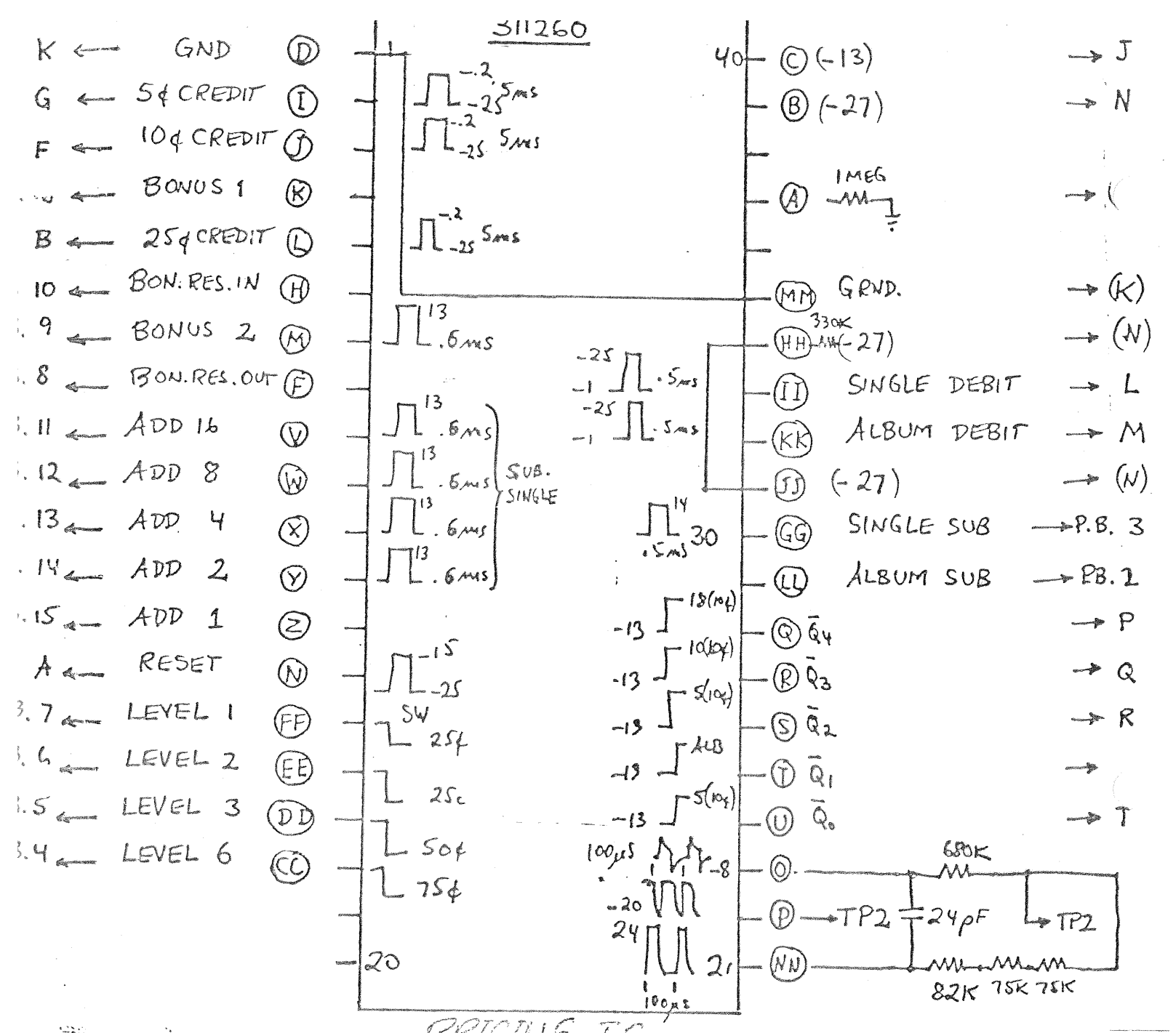
1/25¢
4/50¢
8/$1.-

2/25¢

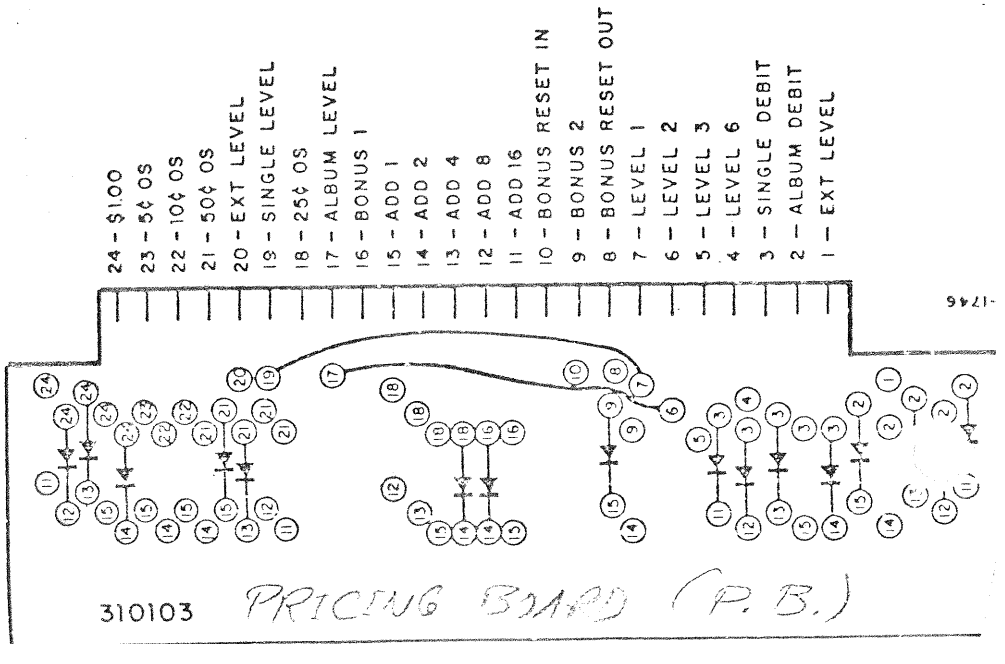

310103
24 - $1.00
23 - 5¢ OS
22 - 10¢ OS
21 - 50¢ OS
20 - EXT LEVEL
19 - SINGLE LEVEL
18 - 25¢ OS
17 - ALBUM LEVEL
16 - BONUS 1
15 - ADD 1
14 - ADD 2
13 - ADD 4
12 - ADD 8
11 - ADD 16
10 - BONUS RESET IN
9 - BONUS 2
8 - BONUS RESET OUT
7 - LEVEL 1
6 - LEVEL 2
5 - LEVEL 3
4 - LEVEL 6
3 - SINGLE DEBIT
2 - ALBUM DEBIT
1 - EXT LEVEL

3/25


310101

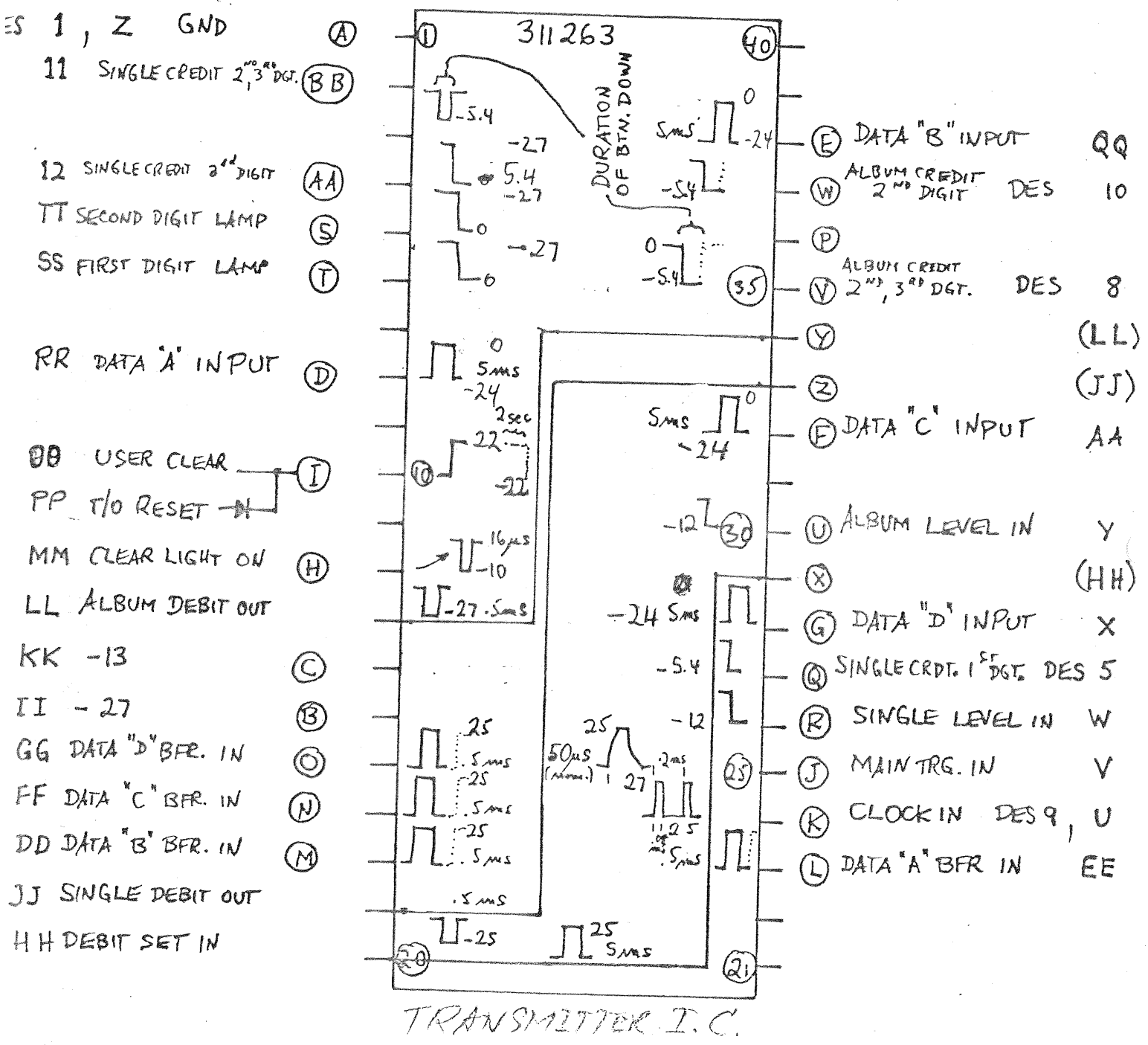


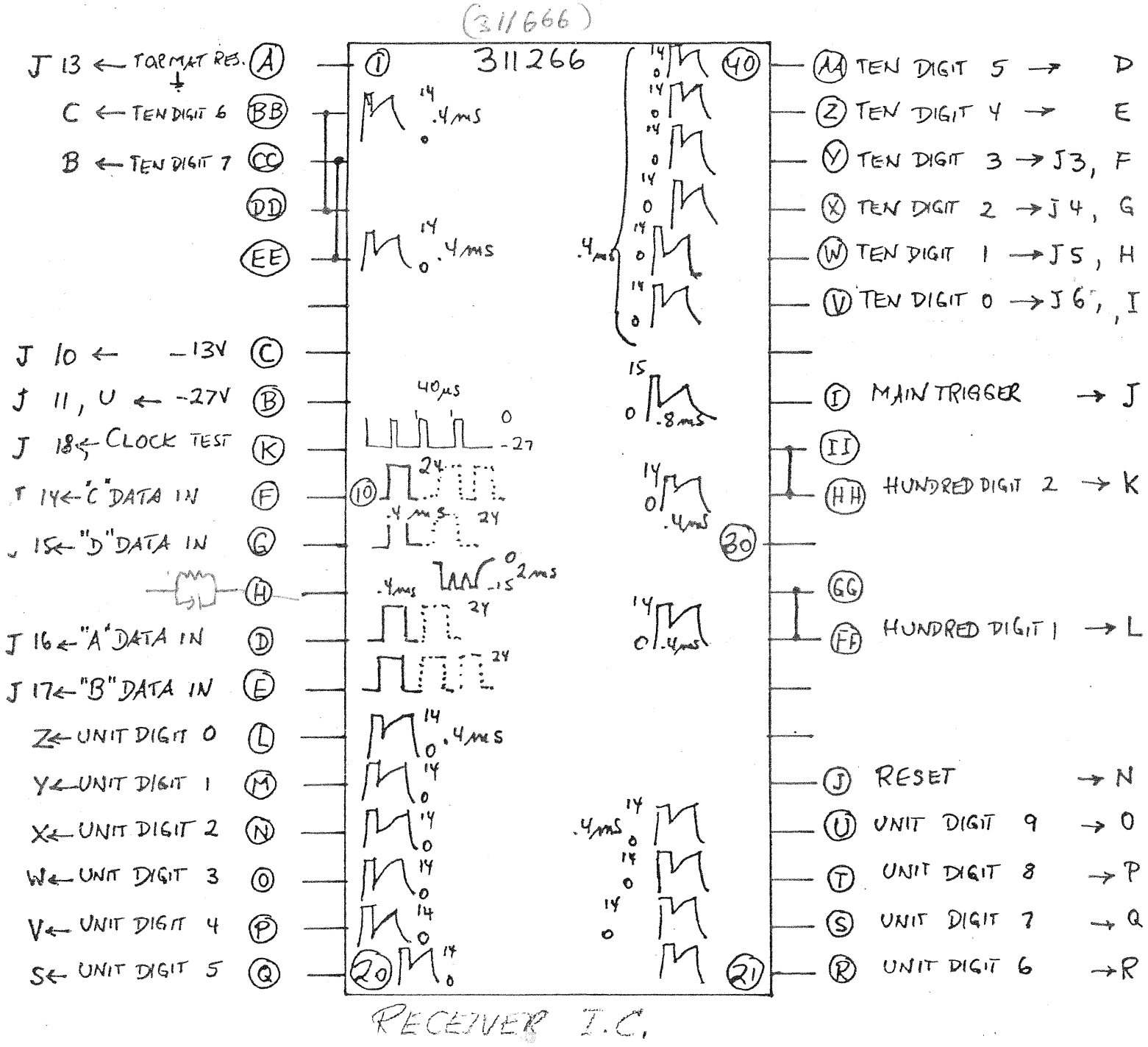
PRICING I.C.



2-25¢

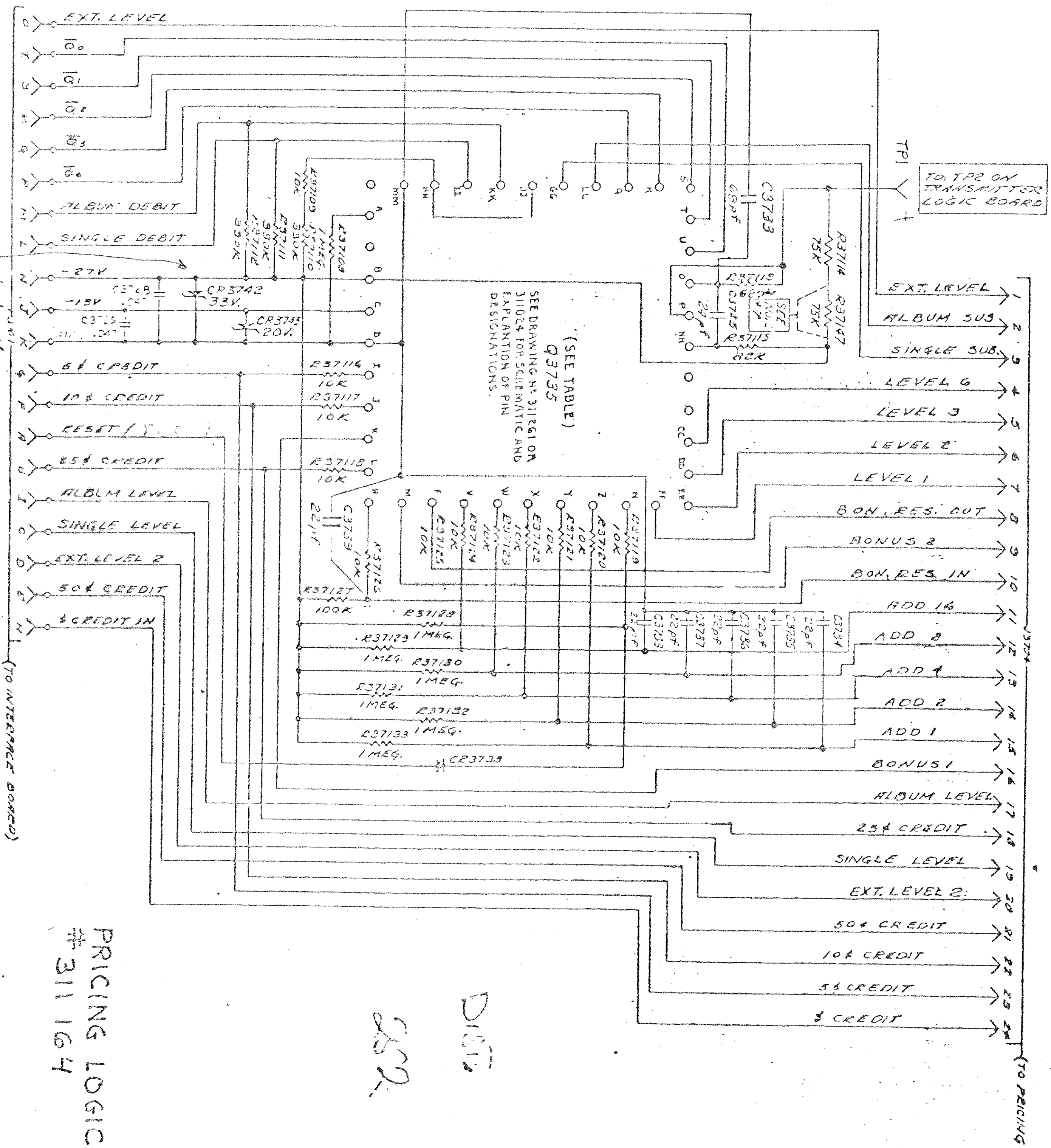
310103 PRICING BOARD (P.B.)


ES 1, Z GND A
11 SINGLE CREDIT 2ND, 3RD DGT. BB
12 SINGLE CREDIT 2ND DIGIT AA
TT SECOND DIGIT LAMP S
SS FIRST DIGIT LAMP T
RR DATA "A" INPUT D
BB USER CLEAR
PP T/O RESET
I
MM CLEAR LIGHT ON H
LL ALBUM DEBIT OUT
KK -13 C
II -27 B
GG DATA "D" BFR. IN O
FF DATA "C" BFR. IN N
DD DATA "B" BFR. IN M
JJ SINGLE DEBIT OUT
HH DEBIT SET IN
311263
DURATION OF BTN. DOWN
E DATA "B" INPUT QQ
W ALBUM CREDIT 2ND DIGIT DES 10
P
V ALBUM CREDIT 2ND, 3RD DGT. DES 8
Y (LL)
Z (JJ)
F DATA "C" INPUT AA
U ALBUM LEVEL IN Y
X (HH)
G DATA "D" INPUT X
Q SINGLE CRDT. 1ST DGT. DES 5
R SINGLE LEVEL IN W
J MAIN TRG. IN V
K CLOCK IN DES 9, U
L DATA "A" BFR IN EE
TRANSMITTER I.C.



RECEIVER I.C.

J IS J3203, LETTERS ARE P3201



PRICING LOGIC
#311164

DIST
252

PP 72 - 12

-15v / -2v	10 ms 2d	①	X	X	ALB.DEB. set in	
-2v		②	ω	ω	M. TRIGGER in	#6-J3700
-15v / -6v	8 ms #3d	③	V	V	"A" IMP. TRIGGER	
-15v / -5v	8 ms #2d	④	U	U	"B" IMP. TRIGGER	
-25v	-2v 2nd d	⑤	T	T	"SECOND DIGIT IMP.	
-25v	-2v 1st d	⑥	S	S	FIRST DIGIT IMP.	
-25v	8 ms #3d	⑦	R	R	"A" DATA 1-$ OUT	
-25v	8 ms #2d	⑧	C	C	"B" DATA 1-$ OUT	
-15v	-15v 5v (R)	⑨	P	P	TO RESET	
-20v	5v (R)	⑩	O	O	USER CLEAR	

M	M	①	-15v / -2v 10 µs	CLEAR "ON"
L	L	②	-1v -25v 5 ms	ALB. DEB. "OUT" #6-J3700
K	K	③	-13v	-13 volts
J	J	④	-1v -25v 5 ms	SINGLE DEB. "OUT"
I	I	⑤	-25v	-27 volts
H	H	⑥	-25v -15v 8 ms	DEB. SET * IN Q3719 OUTput.
G	G	⑦	-25v -15v 5 ms ⓐ	"D" BUFFER IN
F	F	⑧	-25v -2v "	"C" BUFFER IN
E	E	⑨	-25v "	"A" BUFFER IN
D	D	⑩	-25v "	"B" BUFFER IN

100 / 111 / 233 / 222

H .1ms/cm
V .5V/cm

-13v ALB. CREDIT

I	①	ALB. LEV. CR2725	
J	②	* -13 volts	
K	③	GROUND	

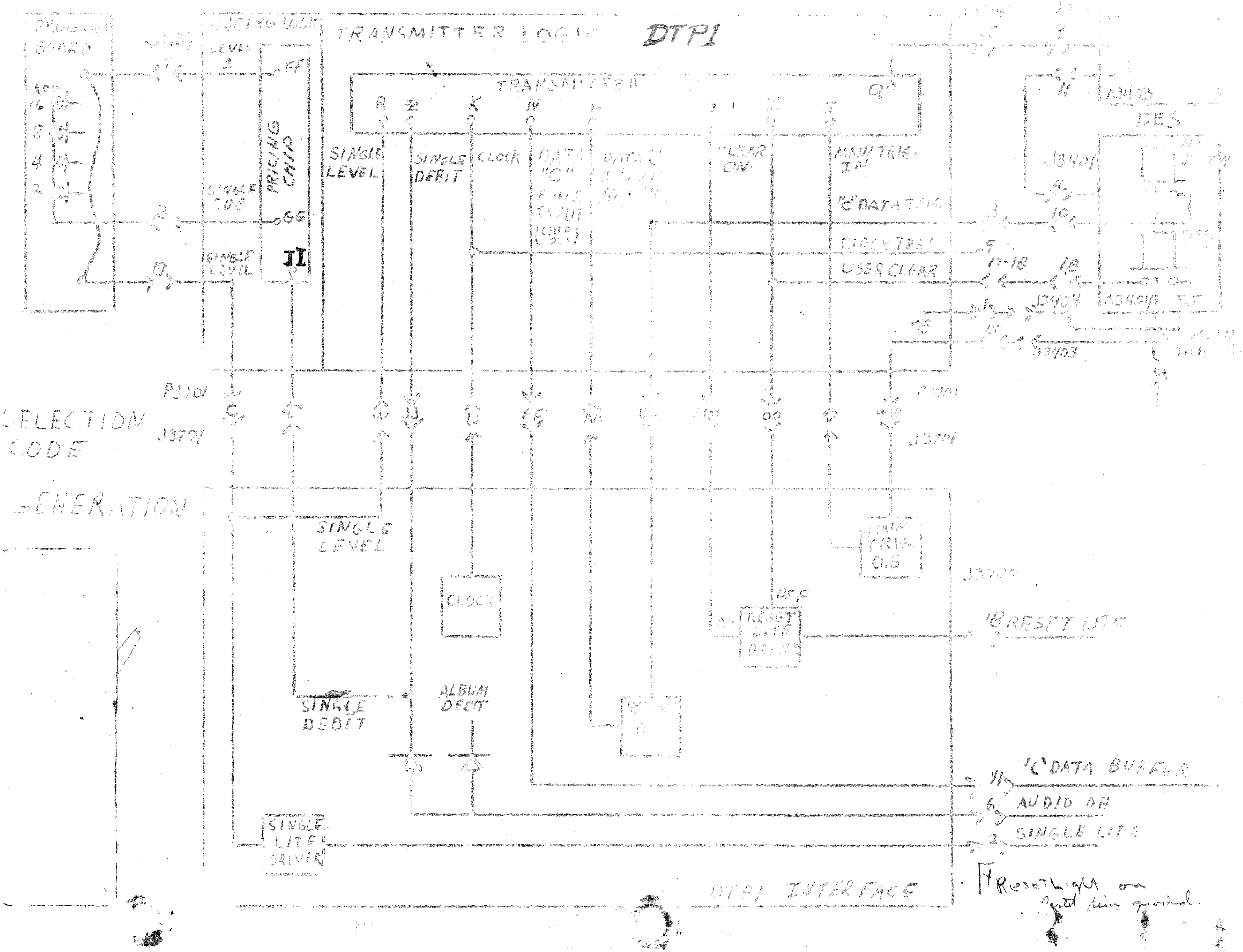
①	A	RESET-CR-3709	-25v	-15v	sw
②	B	25¢ CREDIT (out)	-25v	-2v	5 ms
③	C	SING. LEVEL	-.5v	-18v	
④	D	EXT LEV. "	-.1v		
⑤	E	50¢ CREDIT Q3707 out	-25v	-8v	8 ms.
⑥	F	10¢ CREDIT Q3703 out	-25v	-2v	5 ms.
⑦	G	5¢ CREDIT Q3701 out	-25v.	-2v	5 ms.
⑧	H	1¢ Credit in Q3702	-13v.	-2v	.8 ms.

"C" IMP. TRIG.	C	C	①	-6v	8 ms	ⓐ di "C"
"D" IMP. TRIG.	B	B	②	-6v	8 ms	ⓐ di "D"
DATA "C" IN	A	A	③	-25v	8 ms	ⓐ di "C"
GROUND		Z	④			
ALBUM IN J3701 "I"		Y	⑤	-1v.	-13v (ALB)	
DATA "D" IN Q3709		X	⑥	-27v	8 ms	
SINGLE IN J3701 C		ω	⑦	-1v	-13v (SINGLE)	
M TRIG. IN (output)		V	⑧	-27v.	50 µs	ⓐ di
CLOCK IN (output)		U	⑨		8 µs .27v	5KC

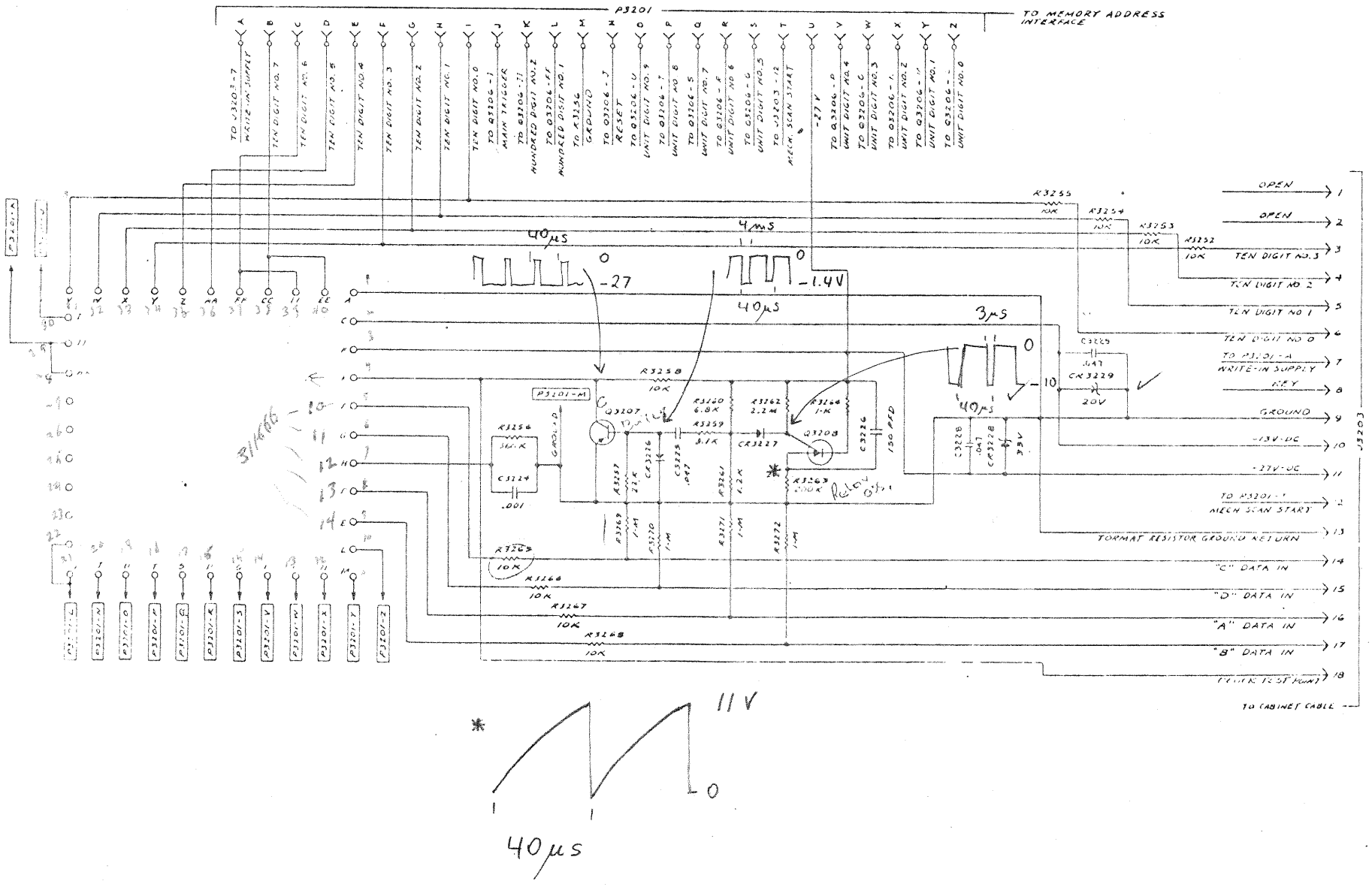
①	SINGLE DEB. CR3735	L	-1v -25v .5 ms
②	ALBUM DEB. CR3736	M	-1v -25v .5 ms
③	* -27 volts	N	
④	EXT. LEVEL J3702 #11	O	

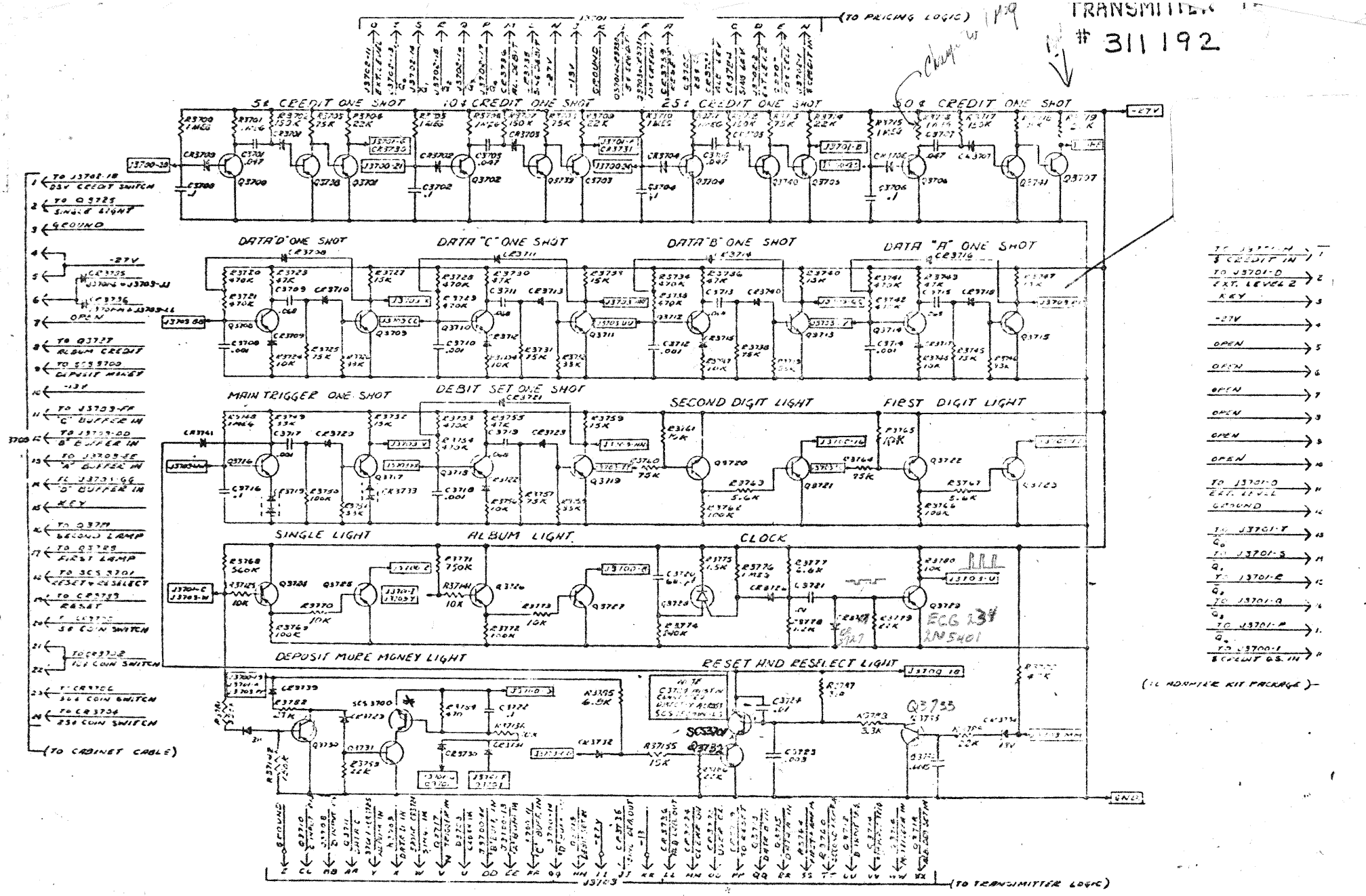
J-3702 #17	$\bar{Q}_1$	P	①	-13v	10 (10¢)
J-3702 #16	$\bar{Q}_3$	O	②	-13v	10 (10¢)
J-3702 #15	$\bar{Q}_2$	R	③	-13v	5 (10¢)
J-3702 #14	$\bar{Q}_1$	S	④	-13v	(ALB)
J-3702 #13	$\bar{Q}$	T	⑤	-13v	5 (10¢)

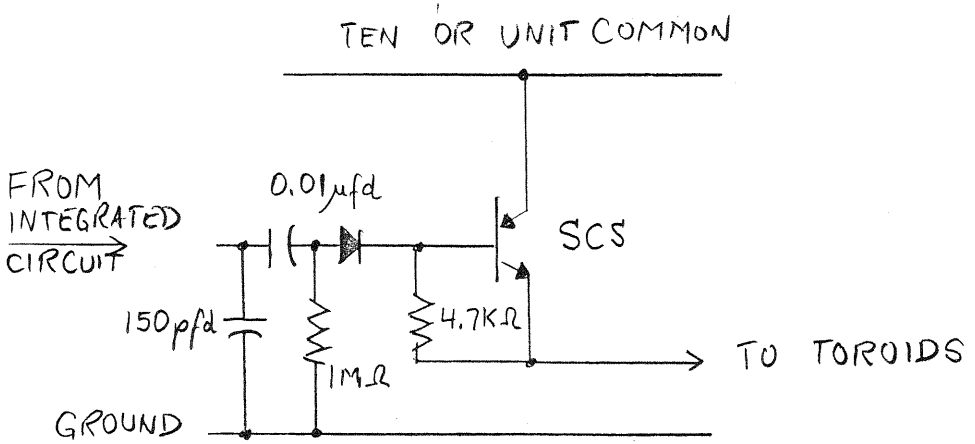
10 (10¢) 20 15 5 33


DTPI
TRANSMITTER LOGIC
PROGRAM BOARD
TRANSMITTER
PRICING CHIP
SINGLE LEVEL
SINGLE DEBIT
CLOCK
CLEAR ON
MAIN TRIG IN
'C' DATA TRIG
CLOCK TEST
USER CLEAR
DES
J3401
J3404
J3403
P3701
J3701
SELECTION CODE GENERATION
CLOCK
MAIN TRIG. O.S.
RESET LITE DRIVER
OFF
RESET LITE
ALBUM DEBIT
'C' DATA BUFFER
AUDIO ON
SINGLE LITE
SINGLE LITE DRIVER
DTPI INTERFACE
Reset Light on

RECEIVER LOGIC
#311167

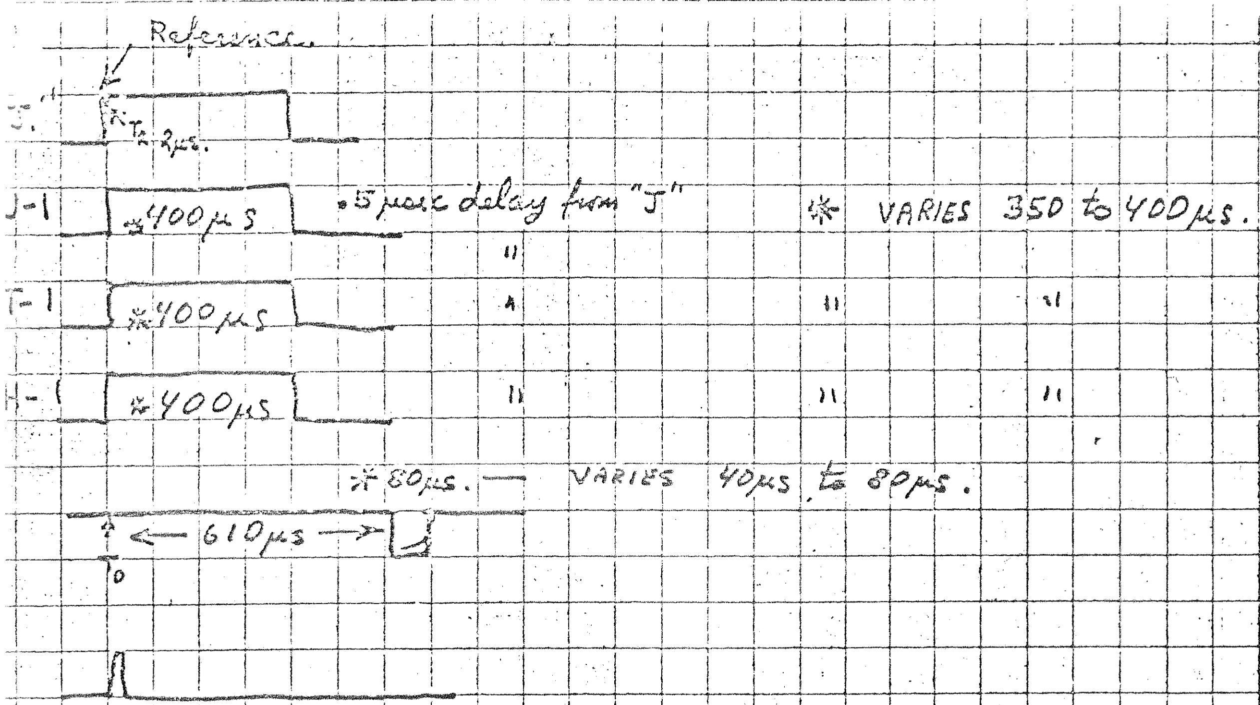



TRANSMITTER
311192
(TO PRICING LOGIC)
5¢ CREDIT ONE SHOT
10¢ CREDIT ONE SHOT
25¢ CREDIT ONE SHOT
50¢ CREDIT ONE SHOT
DATA "D" ONE SHOT
DATA "C" ONE SHOT
DATA "B" ONE SHOT
DATA "A" ONE SHOT
MAIN TRIGGER ONE SHOT
DEBIT SET ONE SHOT
SECOND DIGIT LIGHT
FIRST DIGIT LIGHT
SINGLE LIGHT
ALBUM LIGHT
CLOCK
DEPOSIT MORE MONEY LIGHT
RESET AND RESELECT LIGHT
(TO CABINET CABLE)
(TO TRANSMITTER LOGIC)
(TO ADMIRAL KIT PACKAGE)



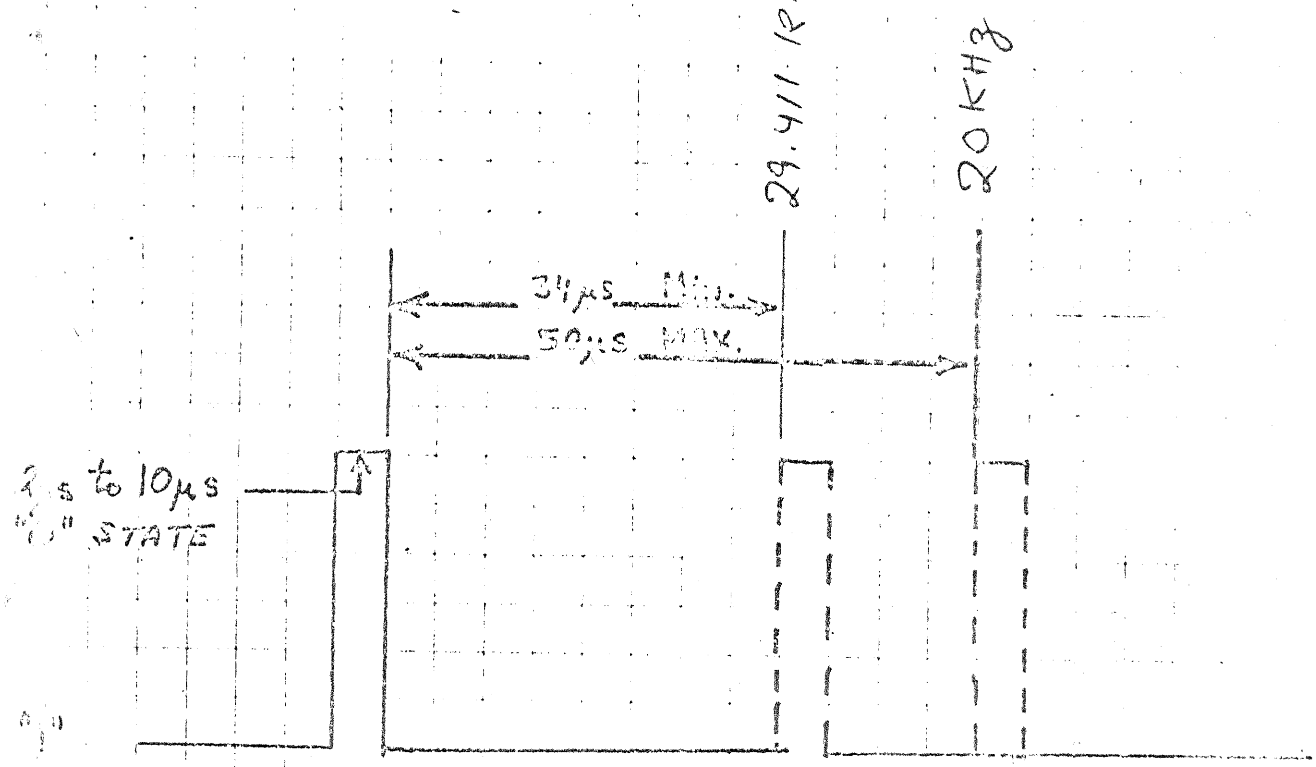
TYPICAL SCS CIRCUIT

DRD-1 TIMING


Reference
J
T_R 2µs.
J-1
*400µs
.5 µsec delay from "J"
* VARIES 350 to 400µs.
I-1
*400µs
H-1
*400µs
*80µs. — VARIES 40µs to 80µs.
← 610µs →
T_0

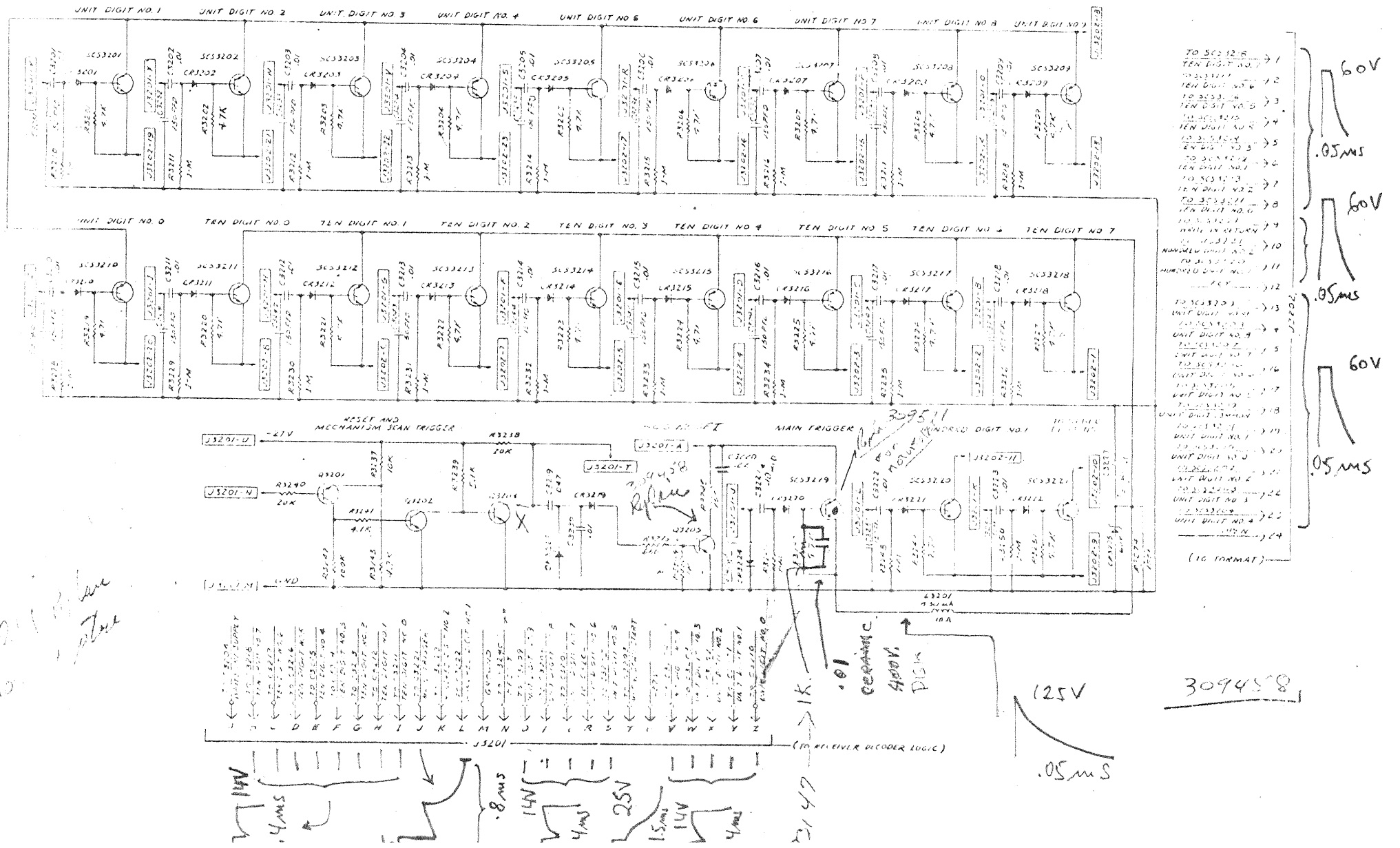
RECEIVER CLOCK SPECS.

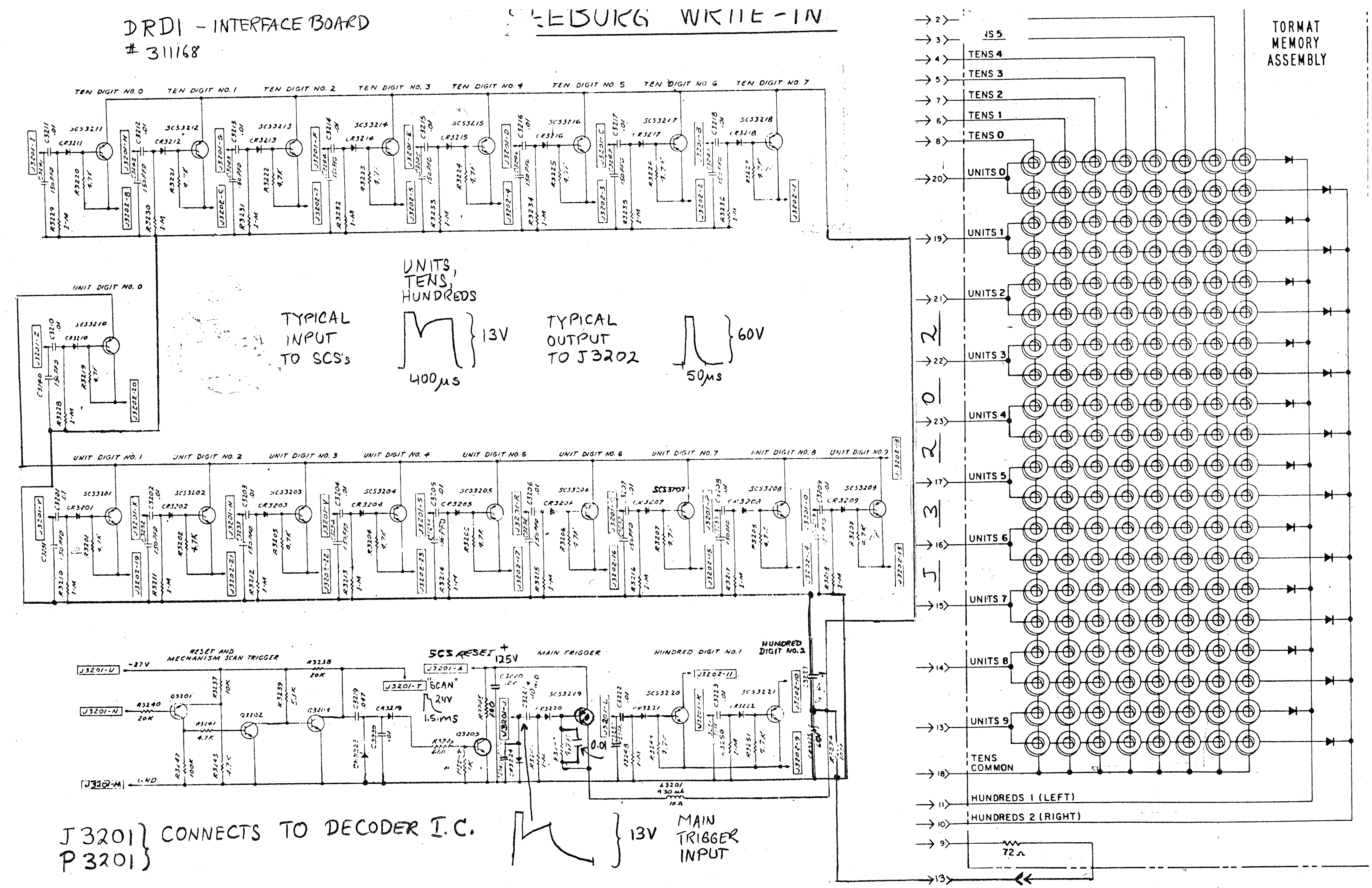
8-17-71

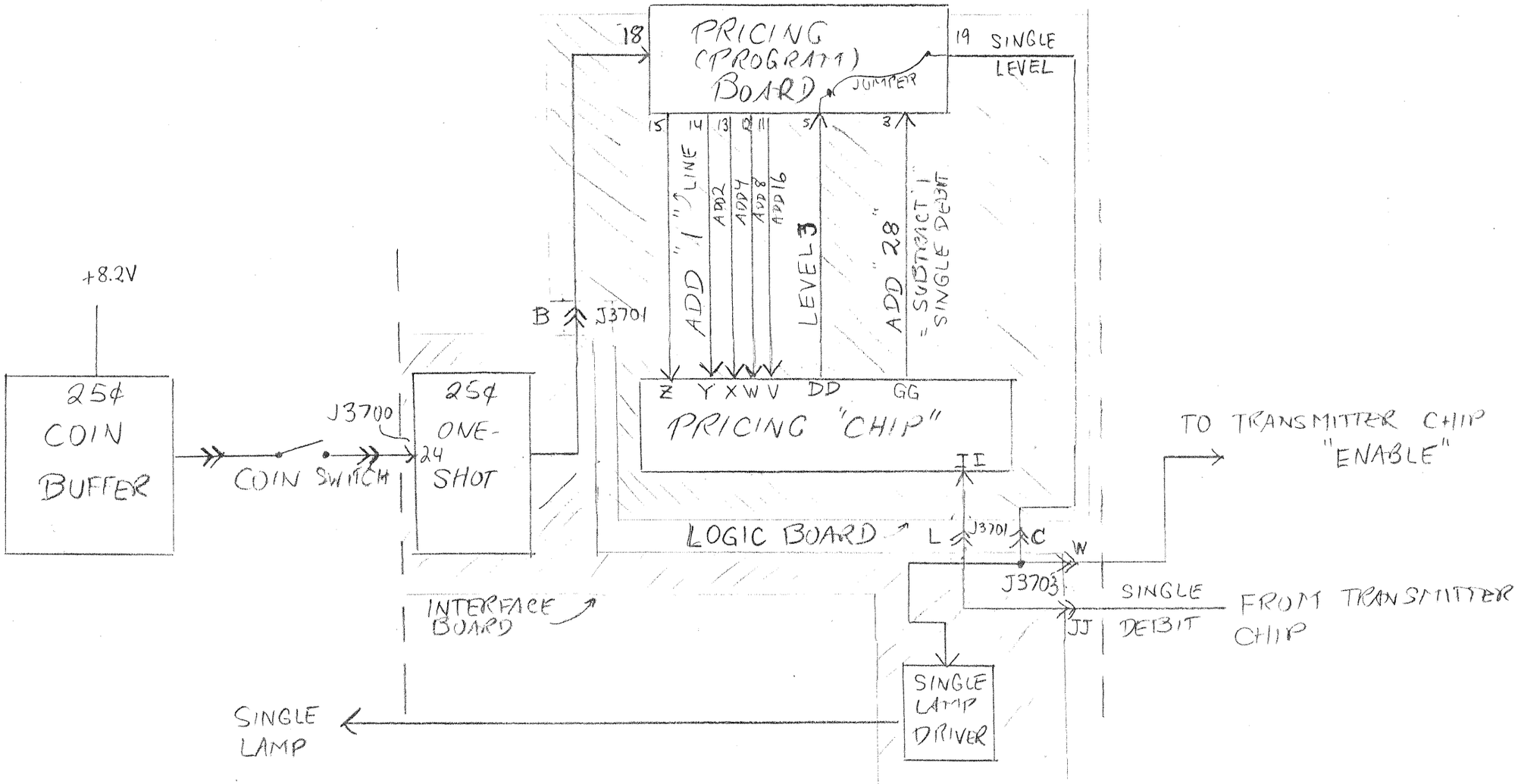


AMI PH II & III

RECEIVER I.F
311 168




DRDI - INTERFACE BOARD
311168
SEEBURG WRITE-IN
TEN DIGIT NO. 0
TEN DIGIT NO. 1
TEN DIGIT NO. 2
TEN DIGIT NO. 3
TEN DIGIT NO. 4
TEN DIGIT NO. 5
TEN DIGIT NO. 6
TEN DIGIT NO. 7
UNIT DIGIT NO. 0
UNIT DIGIT NO. 1
UNIT DIGIT NO. 2
UNIT DIGIT NO. 3
UNIT DIGIT NO. 4
UNIT DIGIT NO. 5
UNIT DIGIT NO. 6
UNIT DIGIT NO. 7
UNIT DIGIT NO. 8
UNIT DIGIT NO. 9
TYPICAL INPUT TO SCS's
UNITS, TENS, HUNDREDS
13V
400µs
TYPICAL OUTPUT TO J3202
60V
50µs
RESET AND MECHANISM SCAN TRIGGER
SCS RESET
125V
MAIN TRIGGER
HUNDRED DIGIT NO. 1
HUNDRED DIGIT NO. 2
"SCAN"
24V
1.5MS
J3201 } CONNECTS TO DECODER I.C.
P3201 }
13V
MAIN TRIGGER INPUT
J 3 2 0 2
TORMAT MEMORY ASSEMBLY
TENS 4
TENS 3
TENS 2
TENS 1
TENS 0
UNITS 0
UNITS 1
UNITS 2
UNITS 3
UNITS 4
UNITS 5
UNITS 6
UNITS 7
UNITS 8
UNITS 9
TENS COMMON
HUNDREDS 1 (LEFT)
HUNDREDS 2 (RIGHT)
72Ω



SINGLE CREDIT BLOCK DIAGRAM