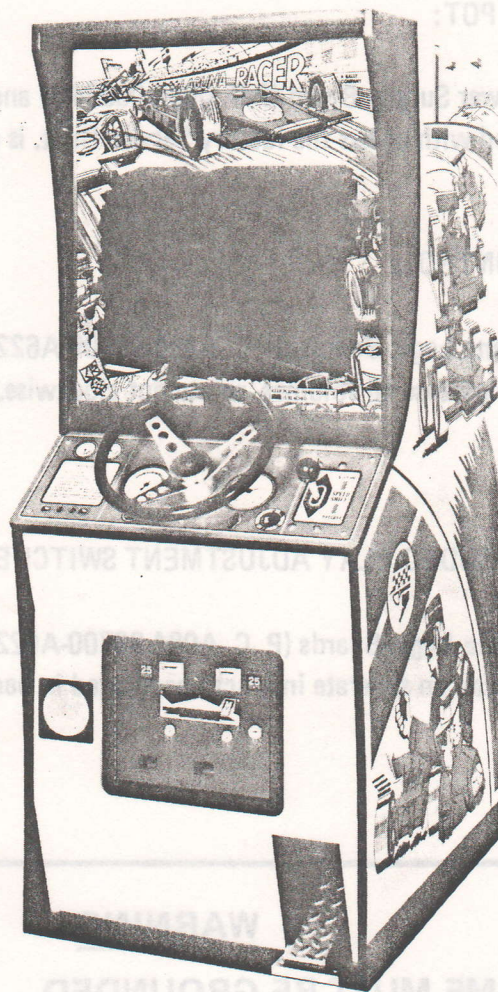


GAME NO. 622
AUGUST, 1977

MIDWAY'S LAGUNA RACER PARTS CATALOG



MIDWAY MFG. CO.

A BALLY COMPANY

10750 WEST GRAND AVENUE
FRANKLIN PARK, ILLINOIS 60131
U.S.A.

PHONE: (312) 451-1360 CABLE ADDRESS: MIDCO TELEX NO.: 72-1596

GENERAL INSTRUCTIONS FOR "LAGUNA RACER"

INSTALLATION:

1. Remove shipping cleats located on the bottom of the cabinet.
2. Install 4 provided leg levelers to bottom of cabinet and level cabinet.
3. The power is controlled by a switch located on top of the cabinet. Plug into A.C. only, 115 volts, 60 cycles. In low line areas (105 volts or less) a boost in the output voltage of the transformer may be obtained by removing the wire from the 115 volt tap of the transformer and re-wiring to the 115 volt position.

VOLTAGE CONTROL POT:

Located on Power Supply Board (P.C. 0080-00904D) and is preset at the factory. This pot should not be tampered with unless the factory Service Dept. is contacted.

MASTER VOLUME CONTROL:

Located on Game Logic Boards (P. C. A084-90700-A622 or A084-90700-B622) and may be varied as desired. To increase all volumes, rotate pot clockwise. Clockwise direction defined as viewed from pot face.

COIN, TIME AND EXTENDED PLAY ADJUSTMENT SWITCHES:

Located on Game Logic Boards (P. C. A084-90700-A622 or A084-90700-B622) and may be adjusted as indicated on separate instructions located in back box area.

WARNING

THIS GAME MUST BE GROUNDED. FAILURE TO DO SO MAY RESULT IN DESTRUCTION TO ELECTRONIC COMPONENTS.

STEERING, ACCELERATOR AND SHIFT ALIGNMENT AND TEST PROCEDURES:

Place test switches 7 and 8 (located on Game Logic Boards P.C. A084-90700-A622 or A084-90700-B622) in test position (switch 7 on, switch 8 off.) Energize tilt switch to make alignment pattern appear.

1. STEERING ALIGNMENT:

With the steering wheel at rest, align steering object dot "B" with steering alignment dot "A". This is accomplished by loosening 2 set screws on the steering pot, then rotate it as positions of dot "A" and "B" indicates. Tighten set screws. See sketch below.

2. ACCELERATOR ADJUSTMENT:

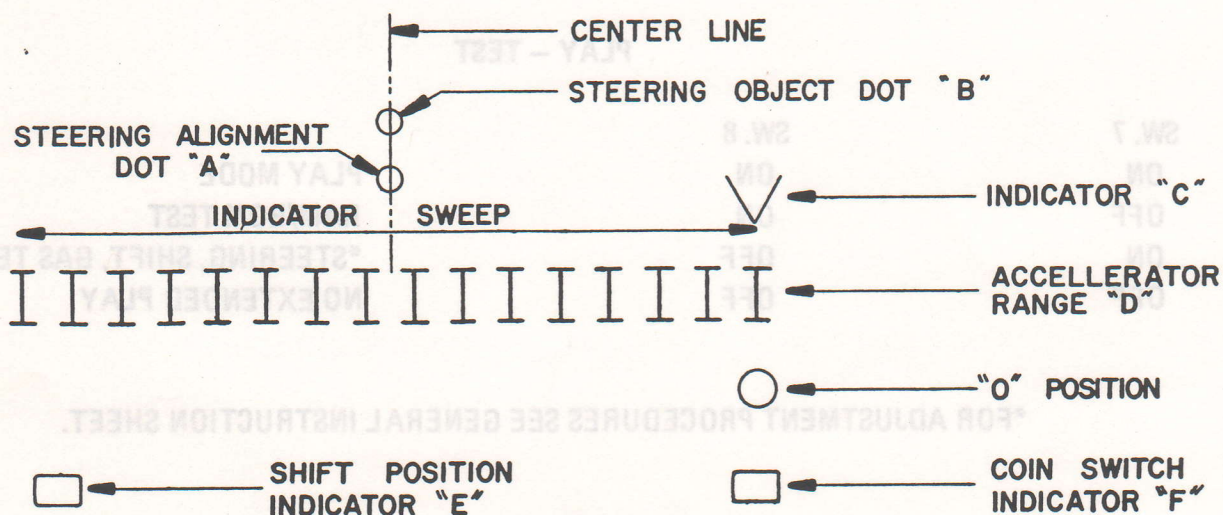
To adjust accelerator travel, loosen 2 set screws on accelerator pot. With the accelerator pedal at rest, rotate pot to align accelerator indicator "C" with position "O" of accelerator range "D". Tighten set screws; depress accelerator fully. The accelerator indicator should sweep from the first to last position of accelerator range "D". See sketch below.

3. SHIFT SWITCH TEST:

To check shift switch, place shift in "Lo" position. If wired properly, shift position indicator "E" will read "Lo". Shift to "Hi" position. Shift position indicator will read "Hi". If the switch is defective, the shift indicator will always read "Hi". See sketch below.

4. COIN SWITCH TEST:

Depress coin switch. Coin switch indicator "F" will read "ON". Release coin switch. Coin switch indicator "F" will read "OFF". If coin switch is shorted, the indicator will read "ON" regardless of switch position. If coin switch is open, the indicator will read "OFF" regardless of switch position. Place adjustment switches in original positions. Energize tilt switch to condition game to play mode.



ADJUSTMENT SWITCHES

METHOD OF PLAY

SW. 1 ON OFF ON OFF	SW. 2 ON ON OFF OFF	1 COIN 1 PLAY 1 COIN 2 PLAYS 2 COINS 1 PLAY 2 COINS 3 PLAYS
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TIME

SW. 3 ON OFF ON OFF	SW. 4 ON ON OFF OFF	45 SEC. PER PLAY 60 SEC. PER PLAY 75 SEC. PER PLAY 90 SEC. PER PLAY
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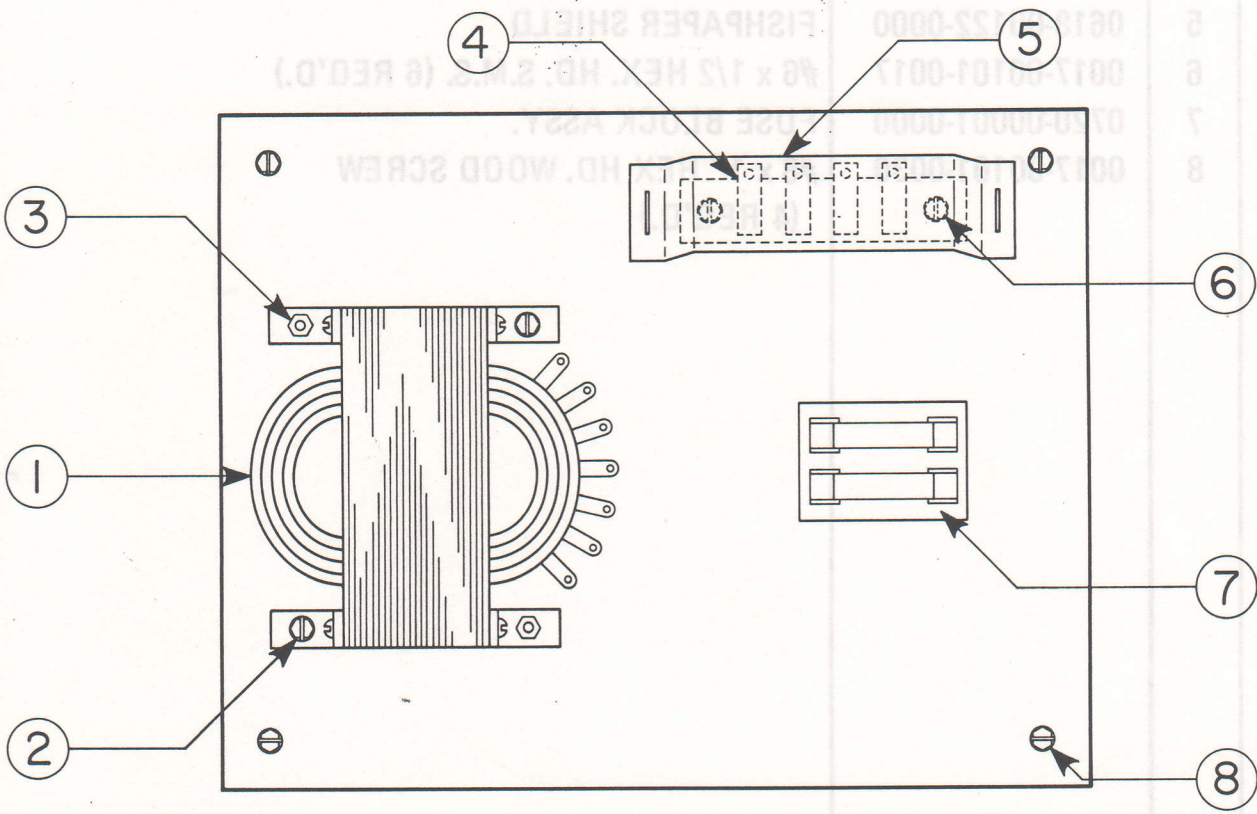
EXTENDED PLAY

SW. 5 ON OFF ON OFF	SW. 6 ON ON OFF OFF	EXTENDED PLAY AT 350 EXTENDED PLAY AT 400 EXTENDED PLAY AT 450 EXTENDED PLAY AT 500
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SW. 7 ON OFF ON OFF	SW. 8 ON ON OFF OFF	PLAY - TEST PLAY MODE RAM/ROM TEST *STEERING, SHIFT, GAS TEST NO EXTENDED PLAY
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*FOR ADJUSTMENT PROCEDURES SEE GENERAL INSTRUCTION SHEET.

NO. 622 - LAGUNA RACER - TRANSFORMER BOARD ASSY.

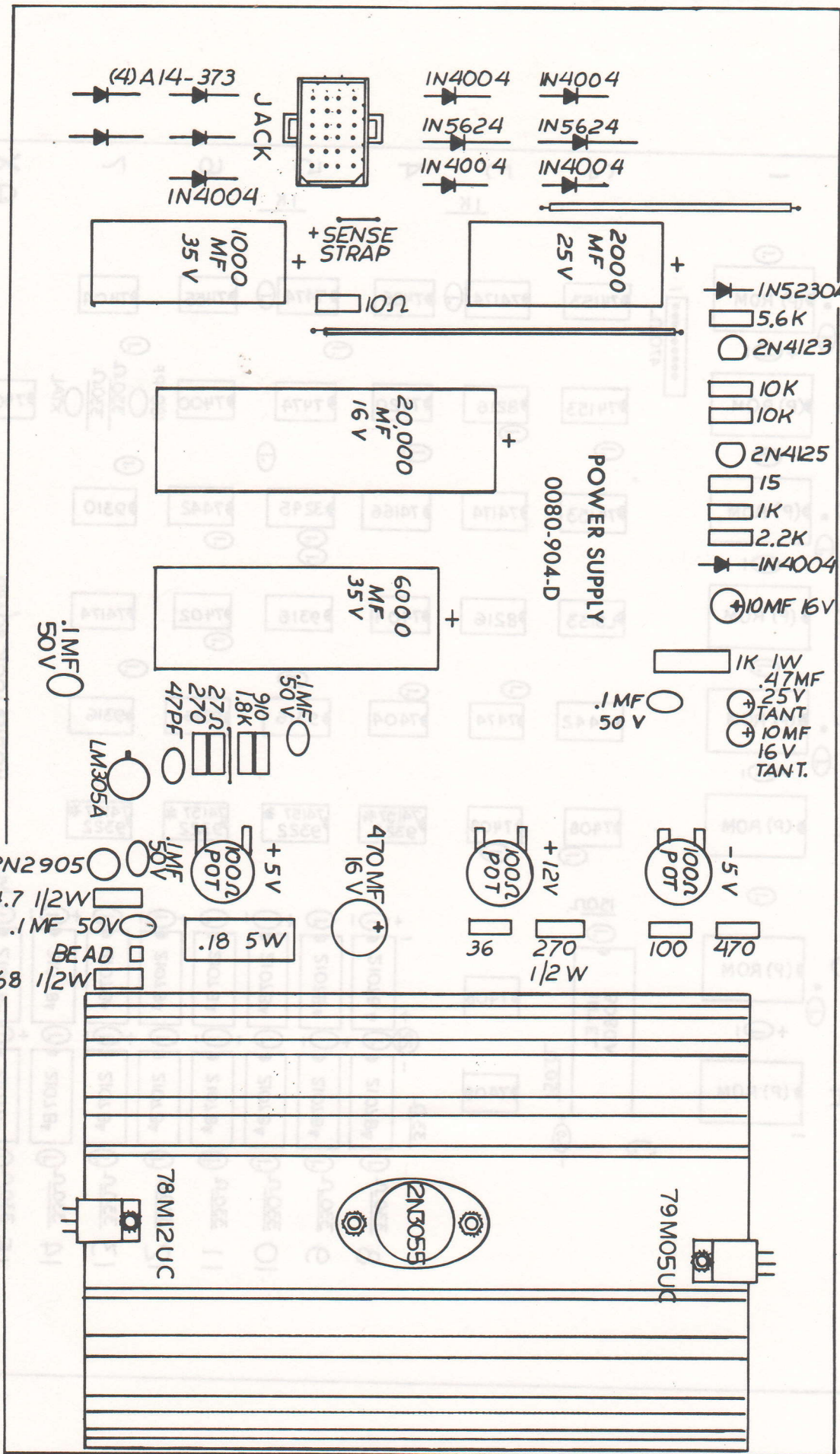


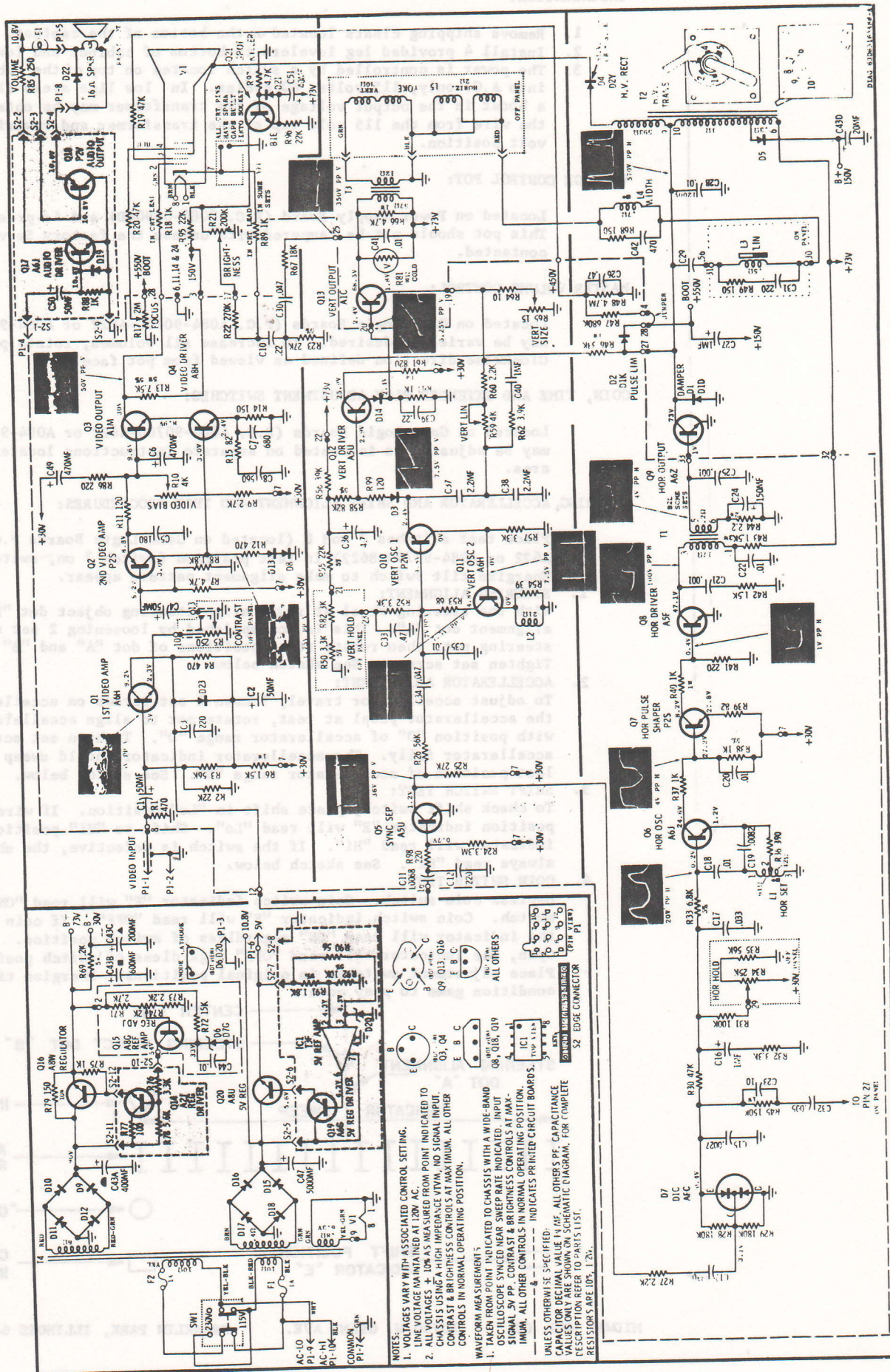
ITEM	PART NO.	DESCRIPTION
1	00MT-0058A-0000	TRANSFORMER - 60 CYCLE OR
2	00MT-0058A-0000	TRANSFORMER - 50 CYCLE - FOREIGN
3	0017-00101-0025	1/8 x 1/2 SLOT HEX HD. S.M.S. (2 REQ'D.)
4	0017-00101-0882	1/8 - 32 x 1/8 CARRIAGE BOLTS (2 REQ'D.)
5	0017-00103-0008	1/8 - 32 HEX NUT (2 REQ'D.)
6	0031-00001-0000	TERMINAL STRIP ASSY.
7	0617-00101-0000	FISHPAPER SHIELD
8	0017-00101-0017	1/8 x 1/2 HEX. HD. S.M.S. (6 REQ'D.)

NO. 622 - LAGUNA RACER - TRANSFORMER BOARD ASSY.

ORDER BY PART NUMBER ONLY

ITEM	PART NO	DESCRIPTION
1	00MT-0058A-0000	TRANSFORMER - 60 CYCLE OR
	00MT-0059A-0000	TRANSFORMER - 50 CYCLE - FOREIGN
2	0017-00101-0025	#8 x 1/2 SLOT HEX HD. S.M.S. (2 REQ'D.)
3	0017-00101-0692	#8 - 32 x 7/8 CARRIAGE BOLTS (2 REQ'D.)
	0017-00103-0008	#8 - 32 HEX NUT (2 REQ'D.)
4	0031-00001-0000	TERMINAL STRIP ASSY.
5	0618-00122-0000	FISHPAPER SHIELD
6	0017-00101-0017	#6 x 1/2 HEX. HD. S.M.S. (6 REQ'D.)
7	0720-00001-0000	FUSE BLOCK ASSY.
8	0017-00101-0030	#8 x 1" HEX HD. WOOD SCREW (4 REQ'D.)





NOTES:

- VOLTAGES VARY WITH ASSOCIATED CONTROL SETTING.
- LINE VOLTAGE MAINTAINED AT 120V AC.
- ALL VOLTAGES $\pm 10\%$ AS MEASURED FROM POINT INDICATED TO CHASSIS USING A HIGH IMPEDANCE $10^6 \Omega$ SIGNAL INPUT. CONTRAST & BRIGHTNESS CONTROLS AT MAXIMUM. ALL OTHER CONTROLS IN NORMAL OPERATING POSITION.

WAVEFORM MEASUREMENTS

- TAKEN FROM POINT INDICATED TO CHASSIS WITH A WIDE-BAND OSCILLOSCOPE SYNCED NEAR SWEEP RATE INDICATED. INPUT SIGNAL 5V PP. CONTRAST & BRIGHTNESS CONTROLS AT MAXIMUM. ALL OTHER CONTROLS IN NORMAL OPERATING POSITION.

UNLESS OTHERWISE SPECIFIED: CAPACITOR DECIMAL VALUE IS μF . ALL OTHERS P.F. CAPACITANCE VALUE IS μF . RESISTOR VALUE IS Ω . FOR COMPLETE VALUES REFER TO PARTS LIST.

RESISTORS ARE 10% \pm .

Schematic Diagram
XM-702-10

INSTALLATION:

1. Remove shipping cleats located on the bottom of the cabinet. "
2. Install 4 provided leg levelers to bottom of cabinet and level cabinet.
3. The power is controlled by a switch located on top of the cabinet. Plug into A.C. only, 115 volts, 60 cycles. In low line areas (105 volts or less) a boost in the output voltage of the transformer may be obtained by removing the wire from the 115 volt tap of the transformer and rewiring to the 115 volt position.

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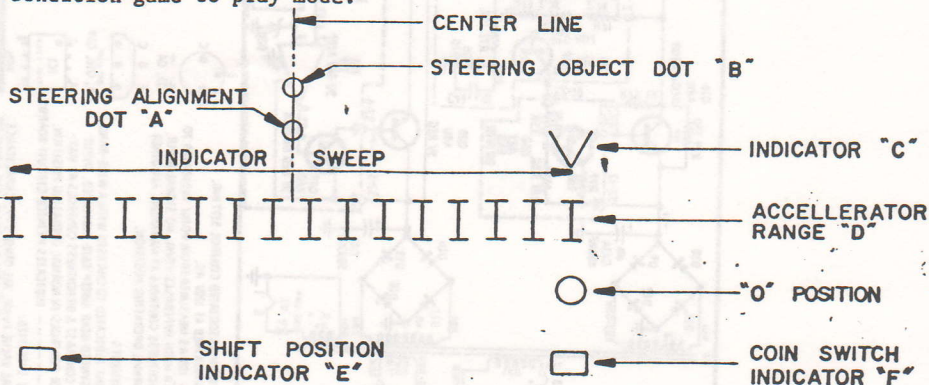
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- Place adjustment switches in original positions. Energize tilt switch to condition game to play mode.



XW-105-10
Electronic Division

PHONE: AREA CODE 312 451-1360

CHICAGO PHONE: 992-2250

MANUFACTURERS OF PALMER ELECTRONIC PRODUCTS
10750 W. GRAND AVENUE • FRANKLIN PARK, ILL. 60131

S E R V I C E B U L L E T I N

GAME: Laguna Racer
SUBJECT: Rams, Proms, and Roms

The Laguna Racer game micro-processor system has been programmed to detect a defective Ram, Prom, and/or Rom. To utilize the test, proceed as follows:

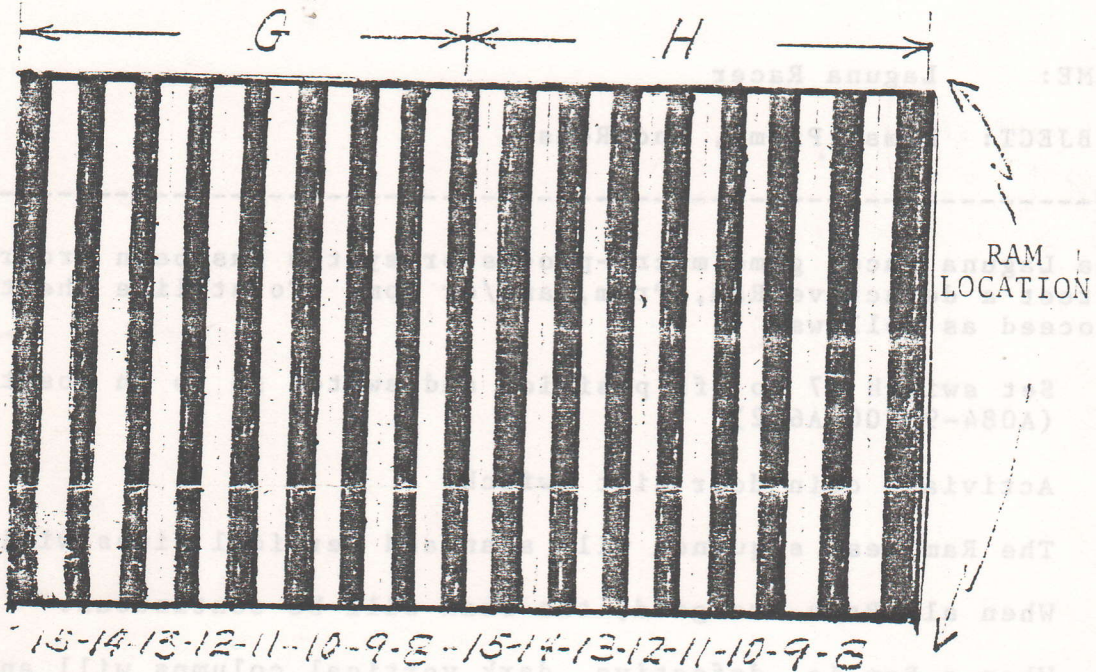
- 1) Set switch #7 to off position and switch #8 to on position (A084-90700-A622)
- 2) Activiate coin door tilt switch.
- 3) The Ram test sequence will scan and vertical lines will appear.
- 4) When all Rams are good, the scan will be continuous.
- 5) When a Ram is defective, dark vertical columns will appear (Refer to figure #1 for method of locating a bad Ram).
- 6) When Ram test is completed and all Rams are good, the T.V. screen will blank out to indicate a bad Prom or Rom by displaying letters locating it.
- 7) When Proms and Roms are good, the Ram scan will be continuous.
- 8) Return switch #7 to on position and switch #8 to off position (A084-90700-A622).
- 9) The Ram scan will stop and game will return to normal when the tilt switch is activated.

NOTE: Rams must be good before Prom and Rom test can be made.

S E R V I C E B U L L E T I N

GAME: Maze, 280 Zzzap, Check Mate, Boot Hill, Double Play,
Road Runner, Guided Missile, Laguna Racer

SUBJECT: Figure One - Method of Locating a Bad RAM



1. When one or more columns are missing or altered, this would indicate a RAM problem.
2. Use Figure One TV display to determine location of faulty RAMs.

AD/r
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AD/r
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