

# **UFO CHASE INSTRUCTION MANUAL**

ELECTRA GAMES, INC.  
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## INTRODUCTION

UFO Chase employs a totally new concept in games. It is an excitingly fast competitive combat game in which two simulated UFO's attack each other. The excitement is in the alternating attack capability. The game is divided into six time intervals; during each interval only one of the UFO's can attack, the other must evade. This action starts with the Black UFO and alternates between the two UFO's. During his interval, the attack UFO can score points by firing missiles or ramming the evading UFO. Two random motion Asteroids moving about the screen subtract points from the attacking UFO if they hit him. Simulated Sounds add realism to a very fast and exciting game.

UFO is easy to service. The electronics consists of one highly reliable Logic Board, a Power Supply board and a plug-in modular Sound Simulator System. The cabinet is attractive, durable, and is designed to provide convenient access to all areas. A Two Coin Rejector front door is standard on UFO Chase.

Every UFO Chase undergoes hours of testing. Thorough component testing, 24 hour minimum operational testing of the Logic Board and a 24 hour test for the complete game.

Despite all testing and precautions taken, malfunctions sometimes occur. Refer to the trouble-shooting guide in this instruction manual to isolate the problem, and contact the distributor from whom the game was purchased for repair or replacement instructions. "Do not attempt to perform repairs on any in-warranty printed electronics boards, as the warranty will be voided."

## WARRANTY

Except as hereinafter stated, Electra Games, Inc., warrants the video monitor and the modular electronic printed circuit boards used in UFO Chase to be free from defects in material or workmanship under normal use. Our obligation under this warranty is limited to making good at our factory any parts thereof which shall within:

90 days - video monitor

1 year - modular electronic printed circuit boards

after delivery of such product be returned to us, and which our examination shall disclose to our satisfaction to have been thus defective will be exchanged or repaired without charge to the owner; however, transportation costs incidental to replacement or exchange of such parts shall be borne by the owner.

This warranty does not extend (1) to any of our products which have been subject to misuse, neglect, accident, incorrect wiring not our own, improper installation or to use in violation of instructions furnished by us, (2) to units which have been repaired or altered by anyone other than us, (3) to cases where the manufacturer's date code or the serial number of the product has been removed, defaced, or changed.

This warranty is in lieu of all warranties expressed or implied, and no representative or person is authorized to assume for us any other liability in connection with the sales of our products.

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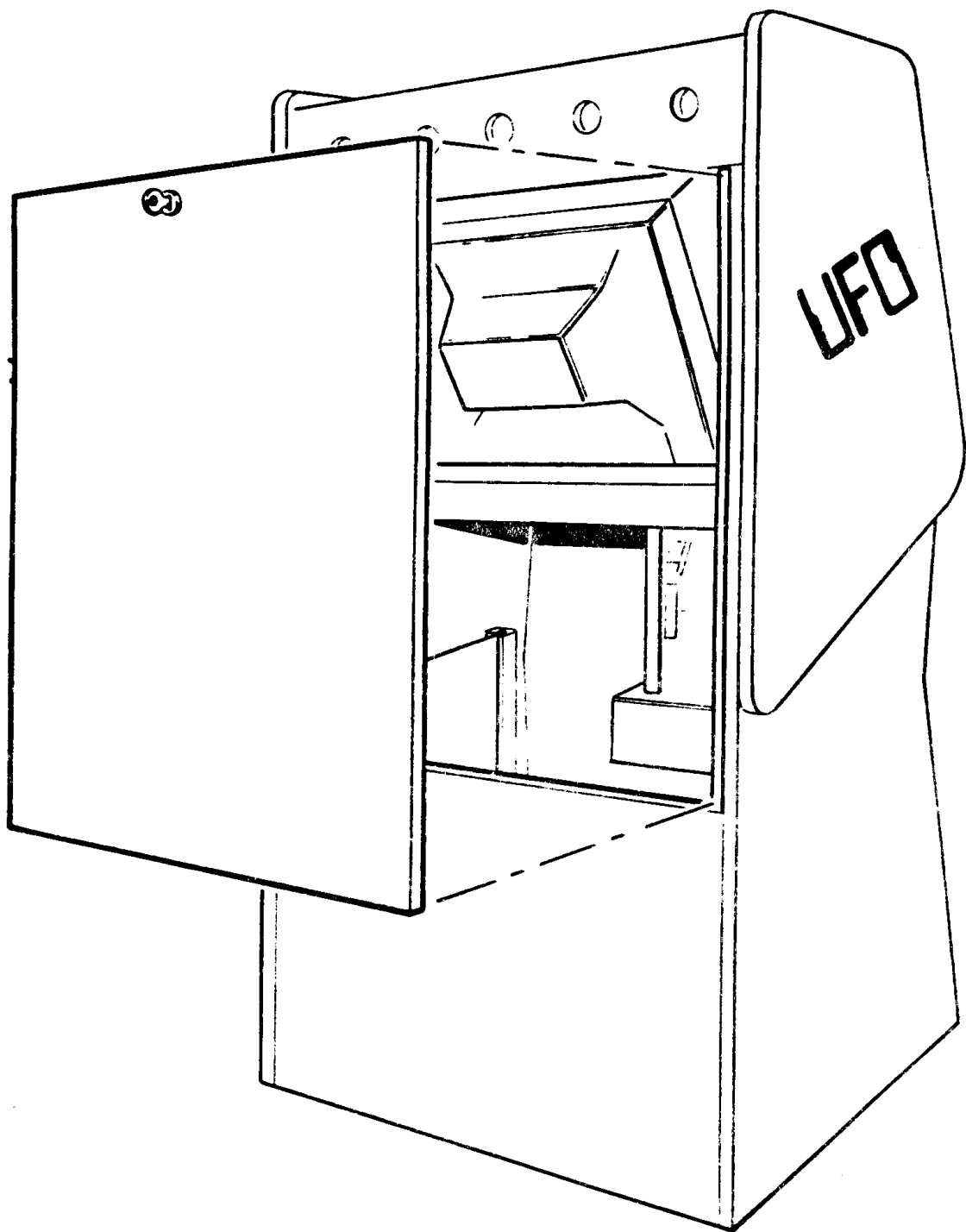


FIGURE 1  
BACK DOOR REMOVAL

## CABINET ACCESS INFORMATION

- . Access into the back of the Cabinet is gained by removal of the Back Door (Refer to Figure 1); the key for this door is in the Instruction Manual Envelope. The Monitor Adjustments, the type EG-1010 Logic Board, the type PS-3 Power Supply Board, the AC Power Supply, and the Sound Simulator Chassis may be reached by removal of the Back Door.
- . Removal of the Front Control Panel allows access to both "Joystick" Controls, all three Front Panel Switches, and the Video Monitor.
- . **TO REMOVE THE FRONT CONTROL PANEL:**
  - . Remove the Back Door (See Figure 1).
  - . Unloosen and remove the two Wing Nuts which secure the Front Panel. (See Figure 2.)
  - . Grip the Front Panel at the lower edge and PULL OUT SLOWLY. Then pull down so that the Front Panel is free.
  - . Disconnect the Control Cable. DO NOT ALLOW FRONT PANEL TO HANG BY CABLE.
  - . Access to the Dual Coin Equipment is thru the Front Door. The keys are located in the Instruction Manual Envelope.

## INSPECTION AND PRELIMINARY SET-UP

With the Back removed, a thorough inspection for shipping damage should be made.

- . Inspect complete Cabinet (Base, Sides, Control Panel) for obvious damage. If any damage is discovered, contact the Freight Carrier immediately.
- . Inspect the Video Monitor for obvious damage; then inspect the Power Supply unit in the Base. (Refer to Figure 3.) The PS-3 Power Supply Board should be connected and secured in position.
- . Inspect the EG-1010 Logic Board. The board should be in its card guide with the edge connector fully seated. (One screw in the upper left hand corner locks the board in place, refer to Figure 3.)
- . Inspect the Sound Simulator Chassis. All Printed Circuit Modules should be fully seated.
- . Open the Front Door and check the Coin Mechanisms to see that both are properly mounted. Operate rejector mechanism and check for any "binding". Use WD-40 Silicone Lubricant to lubricate any binding parts.

The Game is now ready to be set-up!

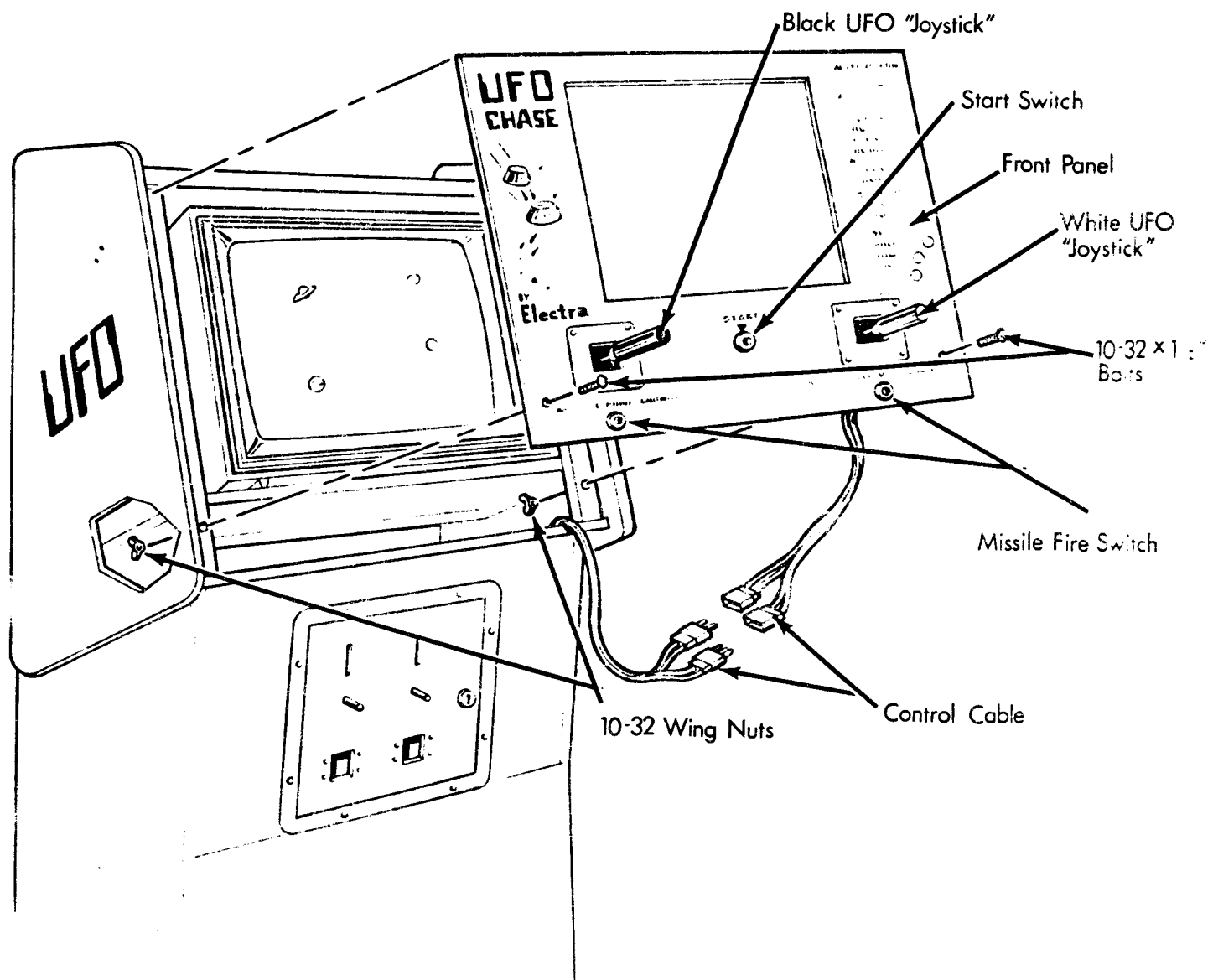


FIGURE 2

### DISASSEMBLING SHIPPING PALLET:

- . Unbolt the Game from the shipping pallet by removing four 3/8" bolts from inside base of Cabinet.

### SETTING UP THE GAME:

- . Install the Four Adjustable Legs (located in Cash Box) into threaded "T" nuts in Cabinet Base.

NOTE: These Legs must be installed so that the Cabinet will be properly ventilated. If the Game is to be operated on a carpeted floor, adjust Legs to a height sufficient to allow air circulation into the vent holes in the bottom of the Cabinet.

- . Locate the Power Cord inside the Game and push plug thru hole provided in the lower back. (Strain Relief on the Cord restricts the Cord from being pulled entirely out of the Game.)
- . Plug into a 120 volt 60 hertz receptacle and turn on Power Switch located at the lower back of the Cabinet. After approximately a 15 second warm-up period, the Display shown in Figure 4 will appear on the Cathode Ray Tube.

### GAME OPERATION AND SEQUENCE:

- . Definitions:
  - . Standby Condition - Game Power On, no Credits established.
  - . Credit Condition - One or more Credits established. One Credit = One Quarter deposited.
  - . Play Condition - Start Button activated - Game in progress.

### GENERAL - REFER TO FIGURE 4:

The UFO's (one Black and one White) are the two opponents; each UFO has three time intervals to chase the other after the Game has started. (The Black UFO is first.) The chase UFO and its Score Counter are continuously flashing during the interval. The time intervals alternate between Black and White, and are displayed as short black and white "hash" marks at the bottom of the screen. When each time interval is completed, one mark is deleted, a tone sounds, and the screen flashes.

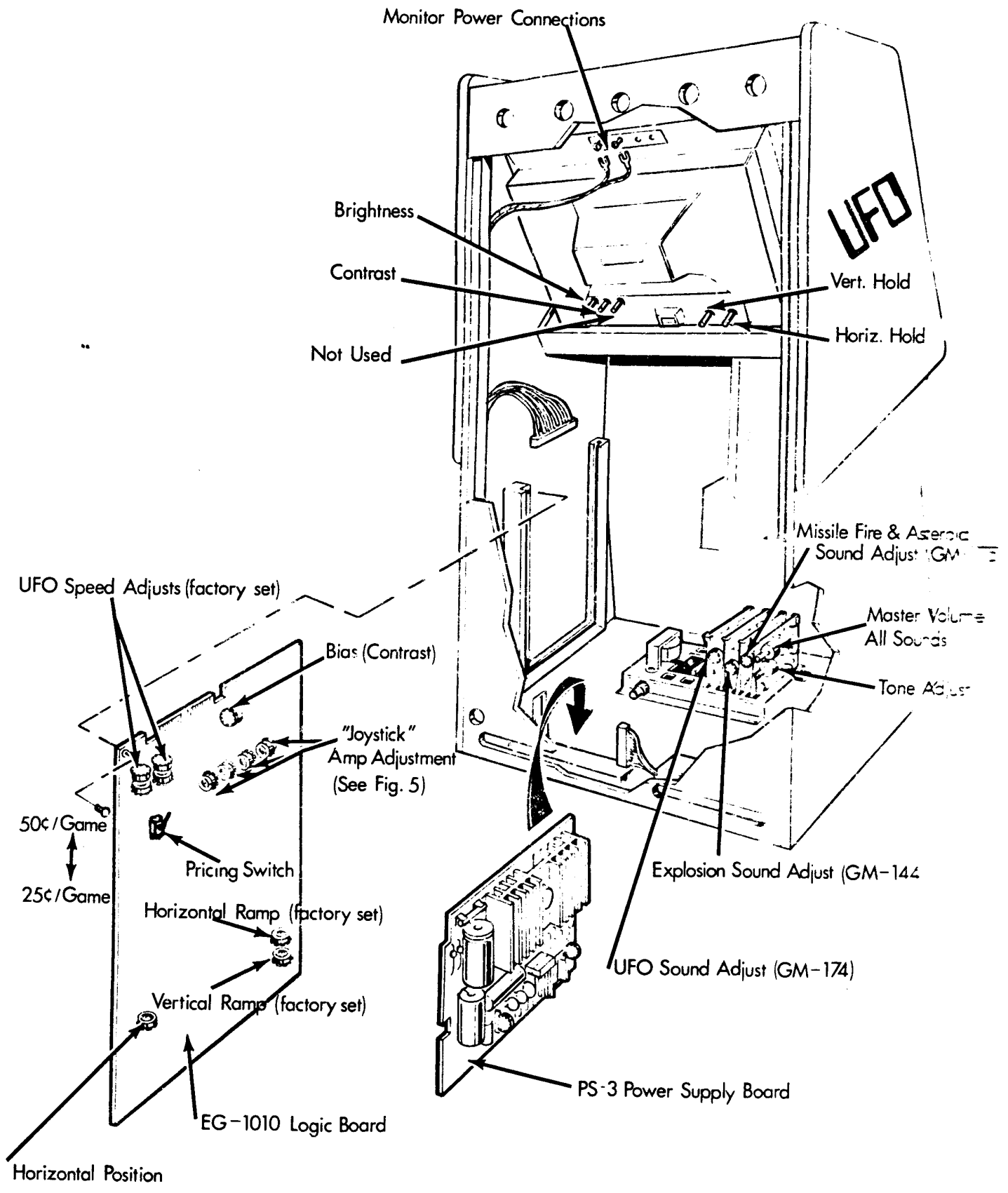


FIGURE 3



## GENERAL - CONT'D.:

During each interval as the aggressor, the chase UFO can RAM the defender for 5 points; or for 10 points, he may "bomb" the defender by pressing the Missile Launch Button. The Missiles drop from the bottom of the UFO; therefore the chase UFO must be above the defending UFO.

Two random asteroids (small white dots) are moving about the screen during the Game. If either hit the chase UFO, 3 points are deducted from his score for each hit. Under certain conditions, if the chase UFO is moving in the same direction as the asteroid, more points may be deducted as the asteroid moves thru the UFO.

The "Joysticks" control the movement of the UFO's in any direction. The "Joystick" movement is directly related to the UFO movement on the screen; i.e. if the "Joystick" is moved to the right, the UFO moves to the right.

There are sounds for each of the UFO's (slightly different in pitch); these sounds vary as the UFO picks up speed or slows down. There are individual sounds for the firing of a Missile, for an asteroid hit, and for a Missile hit or UFO ramming.

## STANDBY CONDITION:

The Black UFO is moving about the screen at various angles, firing missiles at random.

The White UFO is stationary on the upper right hand side of the screen.

One (white) Asteroid is also randomly moving about the screen.

The two Score Counters indicate the results of the previous game.

The Black and White Time Interval Marks are not displayed in Standby.

## CREDIT CONDITION:

### 1 Quarter per Player (50¢ per Game)

#### First Quarter Deposited -

Conditions remain unchanged from Standby, except that the Black and White Time Interval Marks are now displayed.

#### Second Quarter Deposited -

The Black UFO is now stationary on the upper left side of the screen.

One (white) Asteroid is randomly moving about the screen.

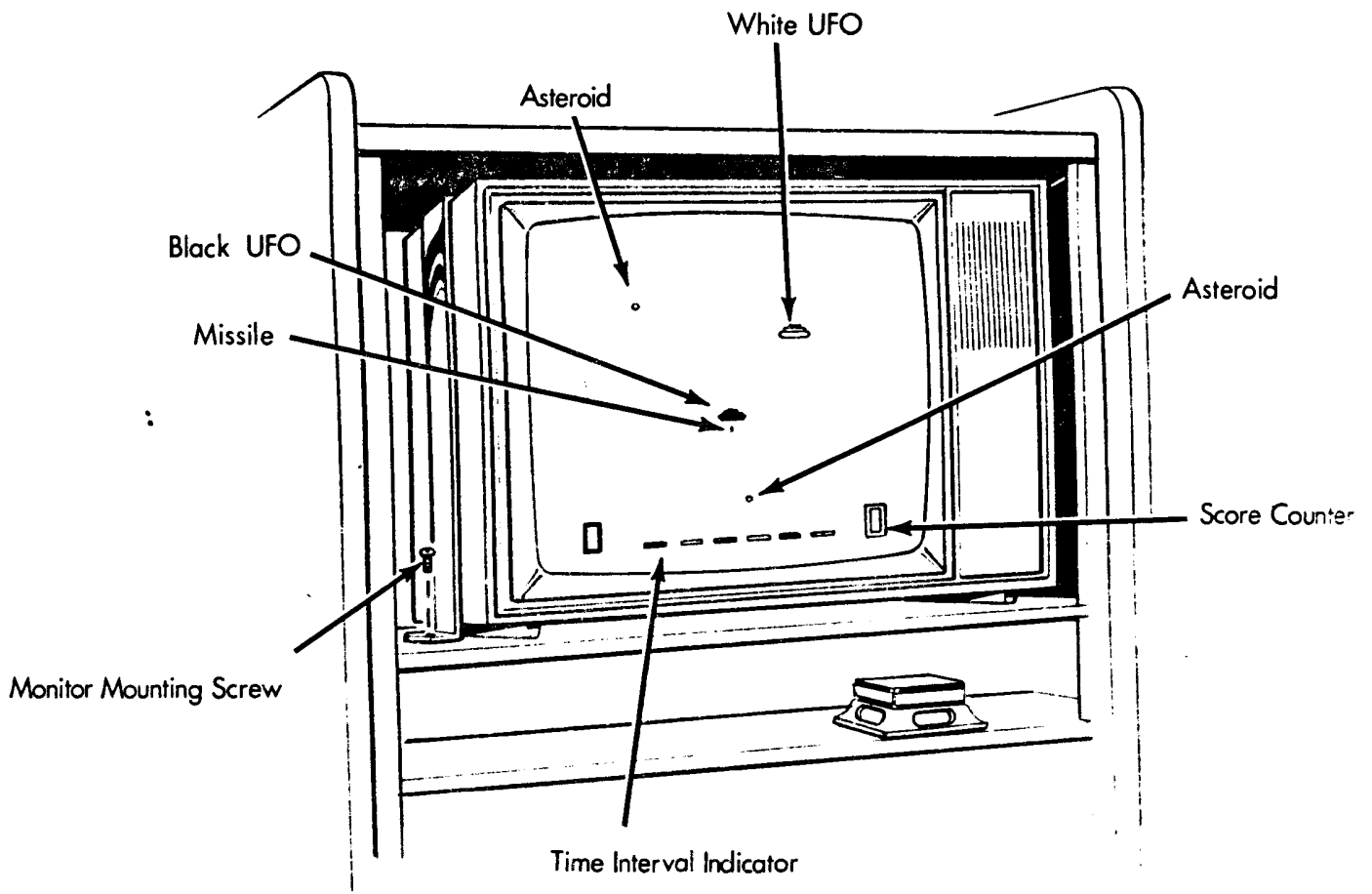


FIGURE 4

## CREDIT CONDITION - CONT'D.:

The two Score Counters are reset to Zero.

The UFO sounds are activated.

## 1 Quarter per Game (25¢ per Game)

The conditions are the same as for Second Quarter Deposited (50¢ per Game), except the Black and White Time Interval Marks are also displayed.

## PLAY CONDITION:

Start Button Depressed -

The Black UFO and score are flashing.

Two Asteroids now move about the screen.

The "Joysticks" now control the movement of the UFO's around the entire screen.

The Black UFO should be moved in an attempt to RAM and Missile Bomb the White UFO. After approximately 15 seconds, a tone is heard, the screen is blanked, the first Black Mark is erased, and the White UFO and score begin flashing. The White UFO is now the Chase UFO. After approximately 15 seconds, the procedure is repeated and the Black UFO and score again begin flashing. This alternate action continues every 15 seconds until the Game ends, and resets to Standby Condition.

## PRICING AND ADJUSTMENTS:

"UFO CHASE" is shipped with the following factory settings:

- . Pricing - Quarter per Player (50¢ per Game)
- . Game Time - 90 seconds
- . Scoring - Missile Bomb = 10 points  
Ramming = 5 points  
Asteroid Hit - deduct 3 points

### Pricing:

The Game is shipped with two Coin Mechanisms, Inc. - Single Quarter Rejectors.

## PRICING AND ADJUSTMENTS - CONT'D.:

There are two pricing options -

1 Quarter per Game, or

2 Quarters per Game

The Pricing Switch on the EG-1010 Logic Board is shown set for Two Quarters per Game. (See Figure 3.) By setting the pricing switch to One Quarter per Game, pricing is automatically changed.

Two Pricing Labels are supplied with the Game to correspond with the setting of the pricing switch.

### Adjustments:

NOTE: Study Figure 3 before making any adjustments.

#### Logic Board (EG-1010)

Bias (Contrast) Adjust - The Game Display Bias Adjust Controls horizontal and vertical sync input to the Video Monitor. This control should not normally require adjustment.

Horizontal Position Adjust - Controls Horizontal Centering Position of the entire Game Display.

Joystick Amplifier Adjustment - (Refer to Figure 5.) The "Joystick" Amplifier Adjustments are factory set and do not normally require readjustment; except when the EG-1010 Logic Board is changed, or if either of the "Joysticks" are replaced. There are two controls for each UFO. The adjustments equalize the output voltage of the "Joystick" amplifiers. When properly adjusted, the UFO's will not drift horizontally or vertically with the "Joysticks" in the upright (rest) position, in Play Condition. This drift condition does not normally affect game play unless the "Joystick" amps are considerable out of adjustment. The adjustments are relatively simple and are performed using a DC voltmeter.

#### To Perform the Adjustments:

1) Both "Joysticks" must be in the upright "rest" position. "Snap" the "Joystick" to return it to center "rest" position. The "Joysticks" should not be moved while making these adjustments.

### Joystick Amp Adjustment

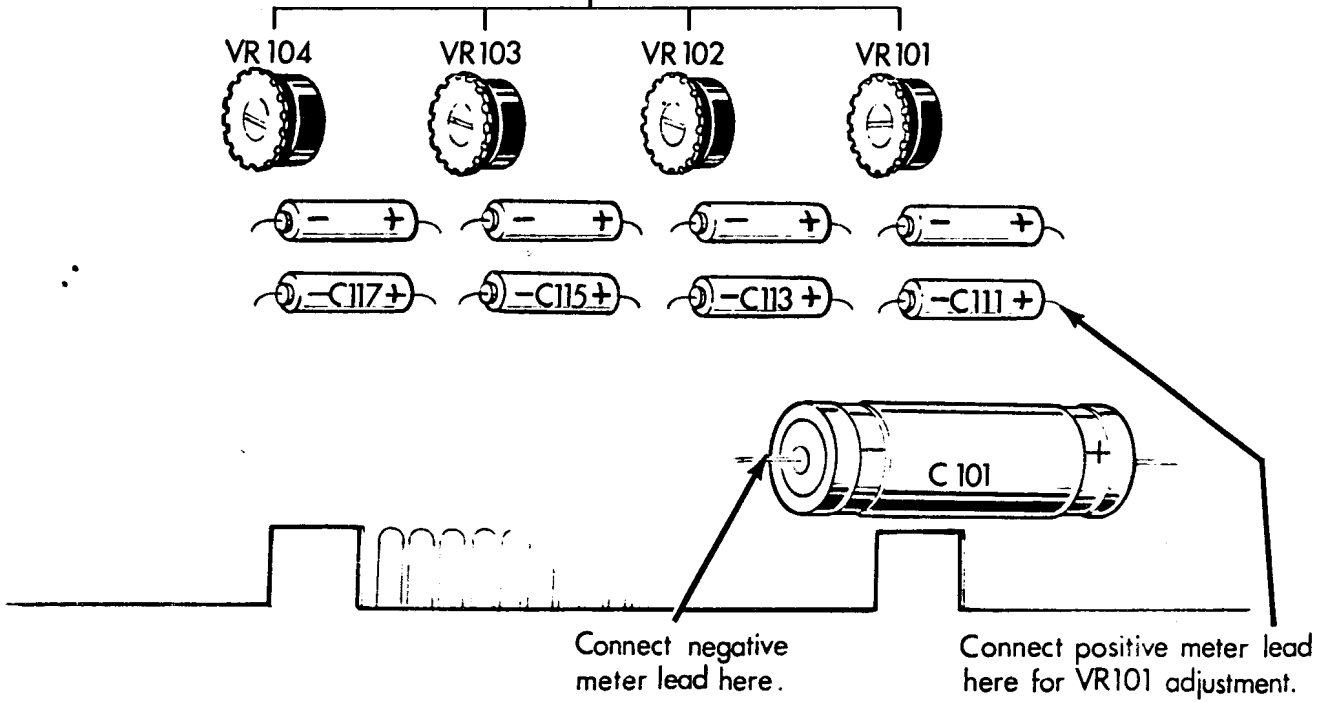


Figure 5

## PRICING AND ADJUSTMENTS -CONT'D:

- 2) Game Power must be "on", game in "Standby Condition".
- 3) Observing correct polarity, connect the negative meter lead to the negative side of C101 (500 mfd capacitor), as shown in Figure 5.

Note: All of the following adjustments will be made with the negative meter lead connected as described above.

- 4) Switch voltmeter to a range which will accurately read 10 VDC. Connect the positive voltmeter lead to the positive side of C111 (1 mfd capacitor). Adjust VR101 for a 10 VDC meter reading.
- 5) Move the positive meter lead to the positive side of C113 (1 mfd capacitor). Adjust VR102 for a 10 VDC meter reading.

The Black "Joystick" Amplifiers are now adjusted.

- 6) Move the positive meter lead to the positive side of C115 (1 mfd capacitor). Adjust VR103 for a 10 VDC meter reading.
- 7) Move the positive meter lead to the positive side of C117 (1 mfd capacitor). Adjust VR104 for a 10 VDC meter reading.

The White "Joystick" amplifiers are now adjusted.

Horizontal Ramp (Factory Adjustment) - Adjusts the peak voltage of the horizontal ramp. This control is factory set and locked. Readjustment is not necessary.

Vertical Ramp (Factory Adjustment) - Adjusts the peak voltage of the vertical ramp. This control is factory set and locked. Readjustment is not necessary.

UFO Speed (Factory Adjustment) - Four Adjustments: Vertical Speed - Black UFO, Vertical Speed - White UFO, Horizontal Speed - Black UFO, Horizontal Speed - White UFO. The adjustments provide equalization of UFO speeds in all directions. These controls are factory set and locked. Readjustment is not necessary.

### Sound Simulator System

Individual level controls are provided on each Sound Module. In this way the individual sounds can be adjusted for a combination that works best in a particular location.

## PRICING AND ADJUSTMENTS - CONT'D.:

Master Volume and Tone (UA-10A 8 watt Amplifier) - Both controls are located on the type UA-10A amplifier module. Master Volume controls the level of all sounds and is adjusted after individual sound levels are set. Tone module is a treble cut control and should also be adjusted after the sound levels are set.

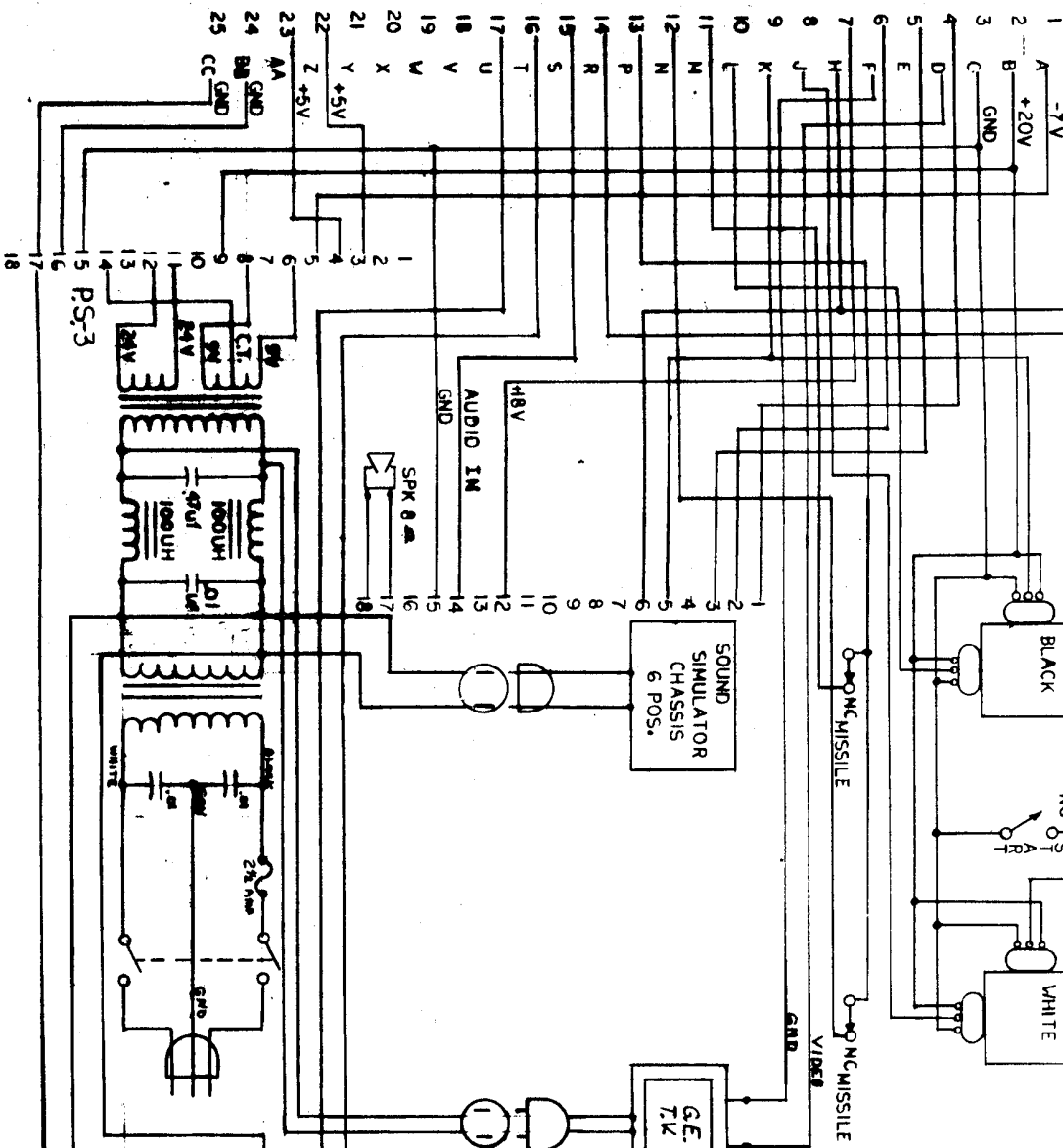
Missile Fire and Asteroid Sound Adjust - (GM 175 Sound Module) Both the Missile Fire and Asteroid sound levels are simultaneously adjusted by this control. This sound should be slightly lower in level than the explosion sound.

: Explosion Sound Adjust - (GM 144 Sound Module) Controls the explosion sound and should be set to maximum.

UFO Sound Adjust - (GM 174 Sound Module) Controls the level of both UFO sounds simultaneously. The UFO sounds accelerate and decelerate when the "Joystick" control is moved from center position. This sound should be set at a slightly lower level than the Missile and Asteroid sound.

# EG1010

LOGIC BOARD



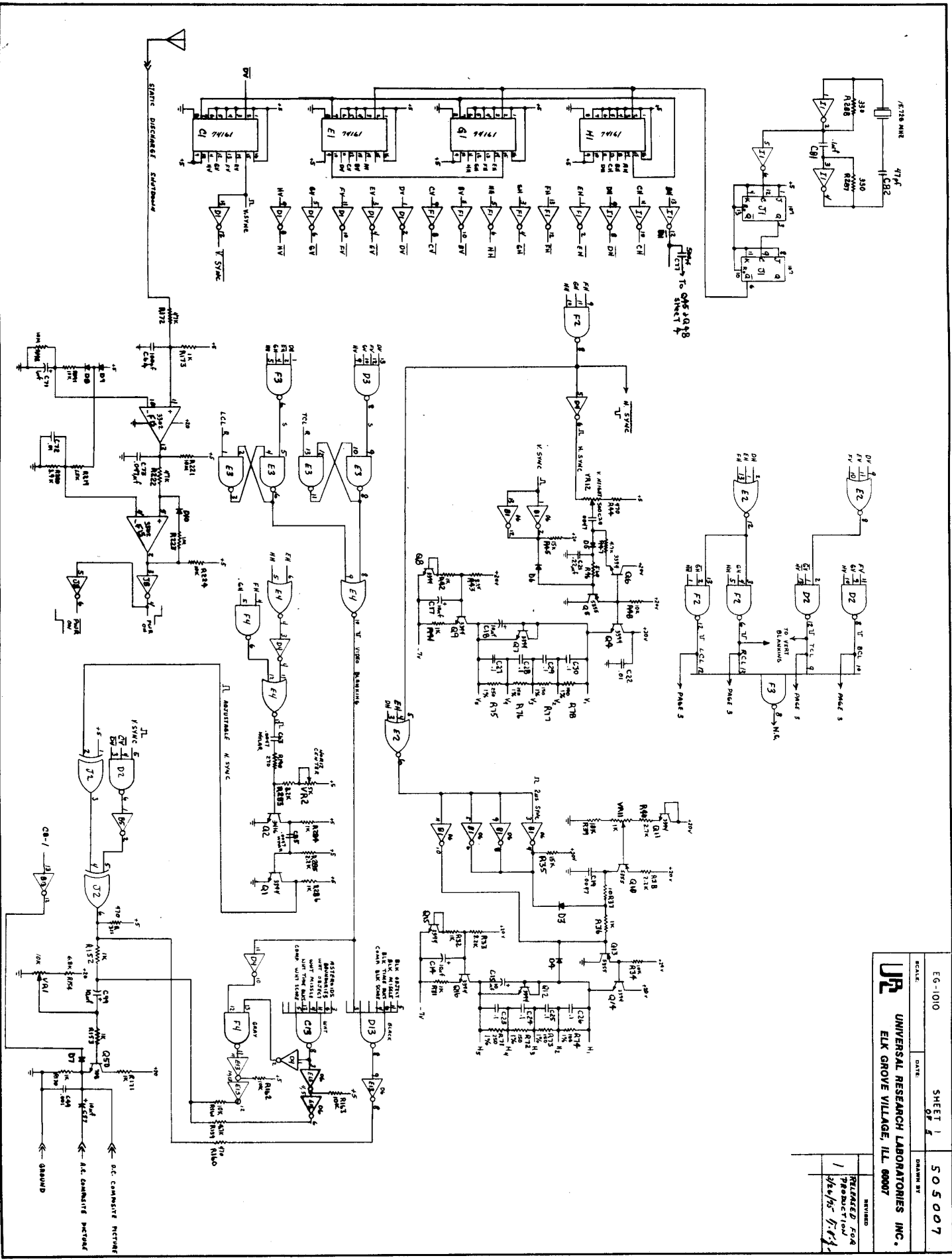
EG1010 HOOKUP

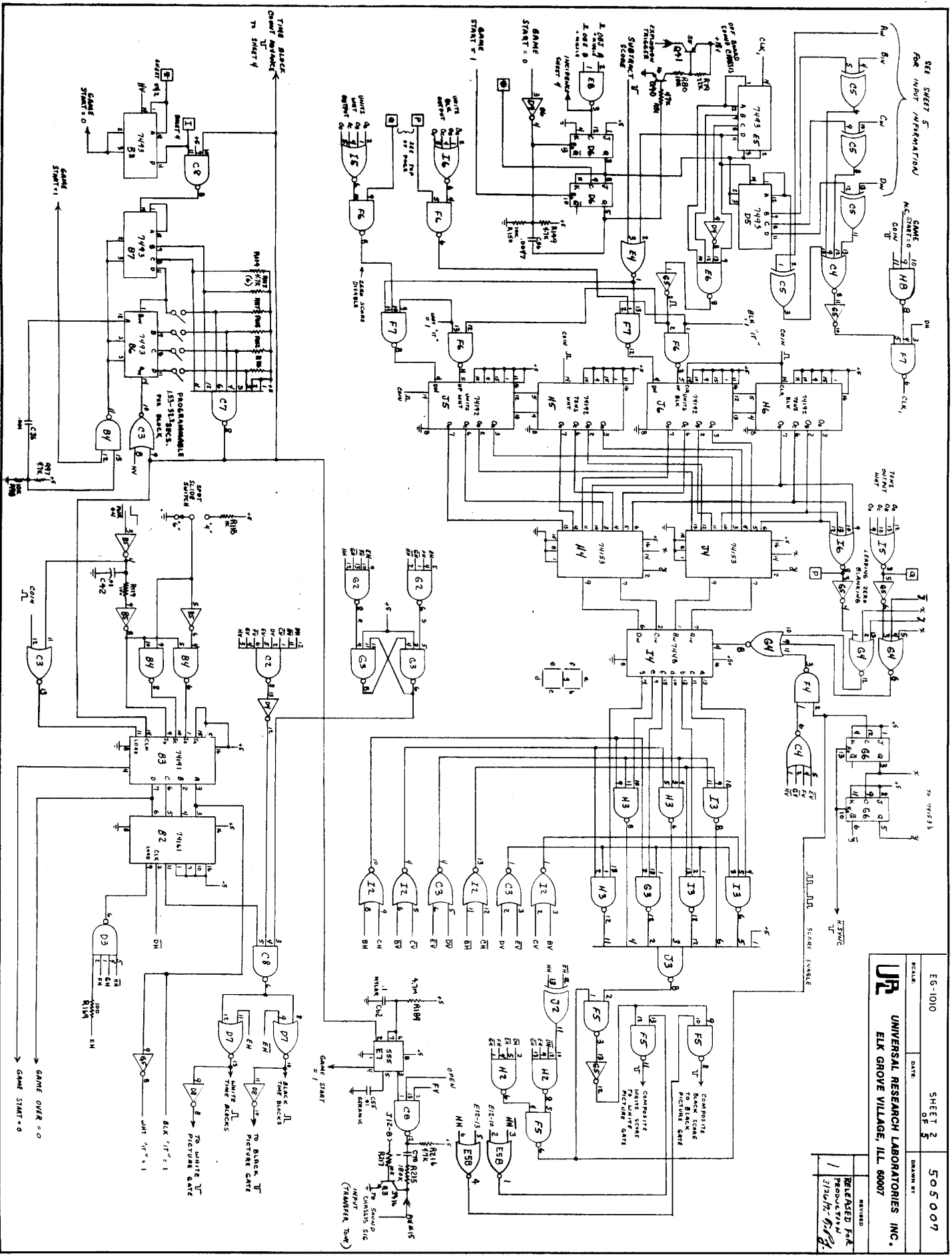
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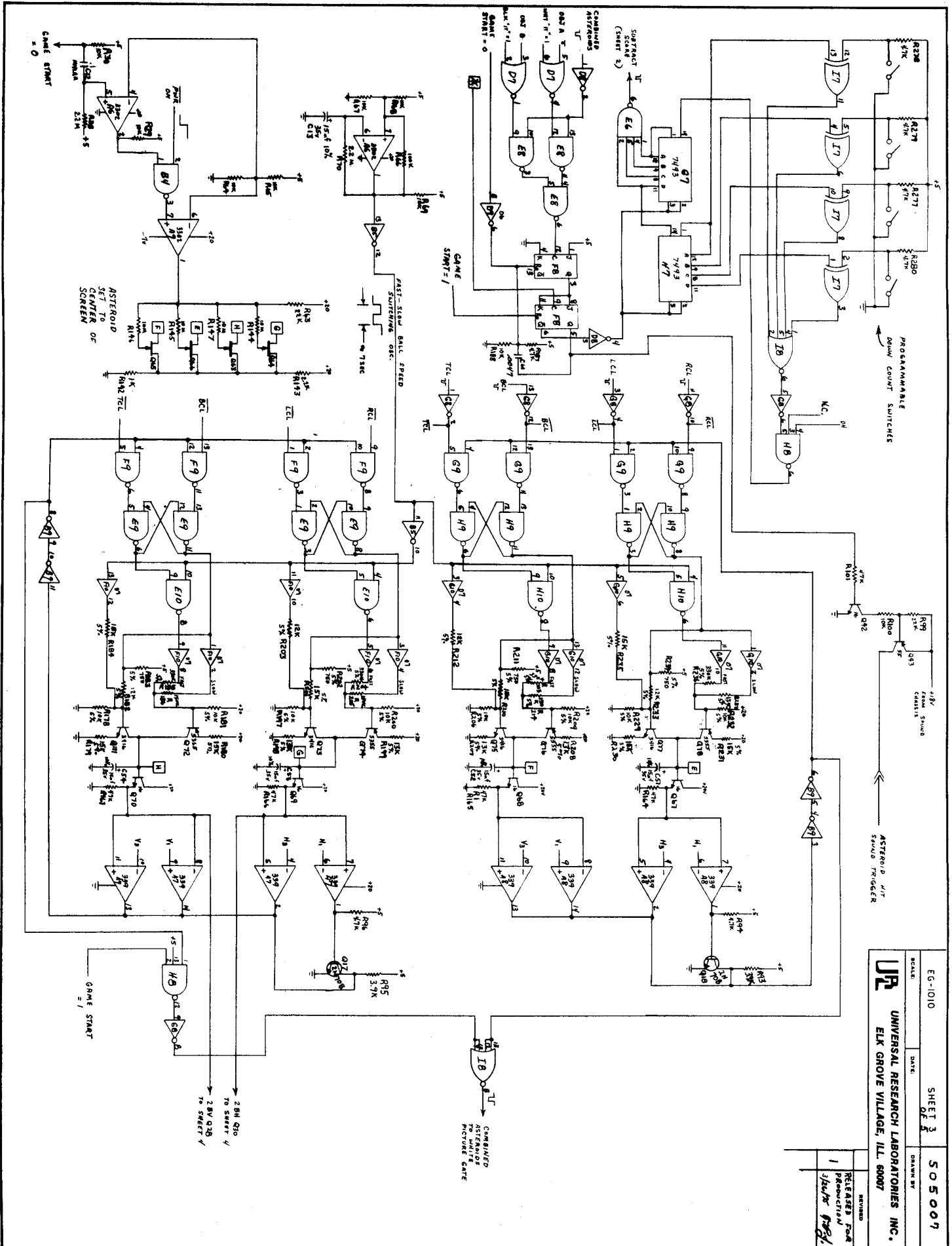
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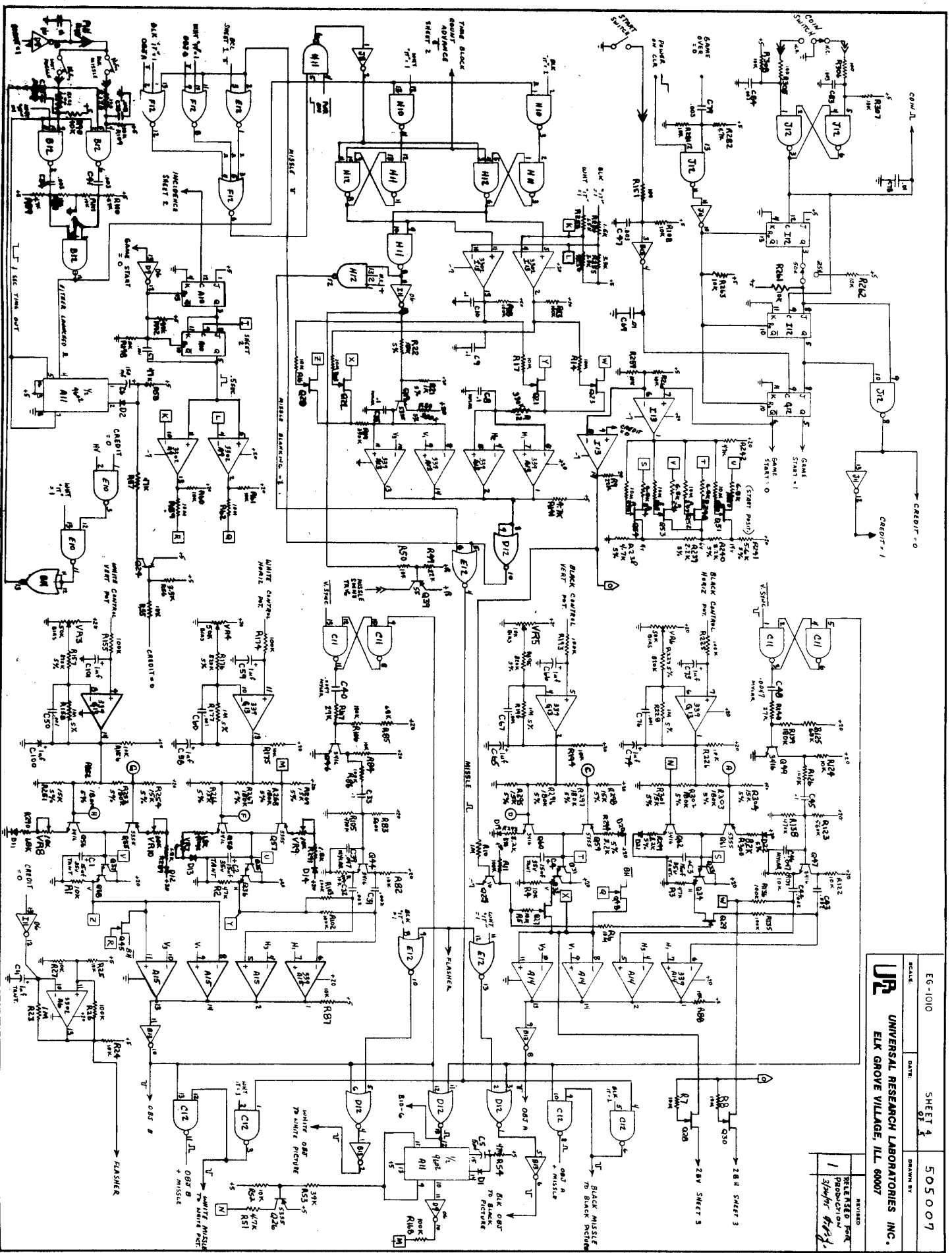






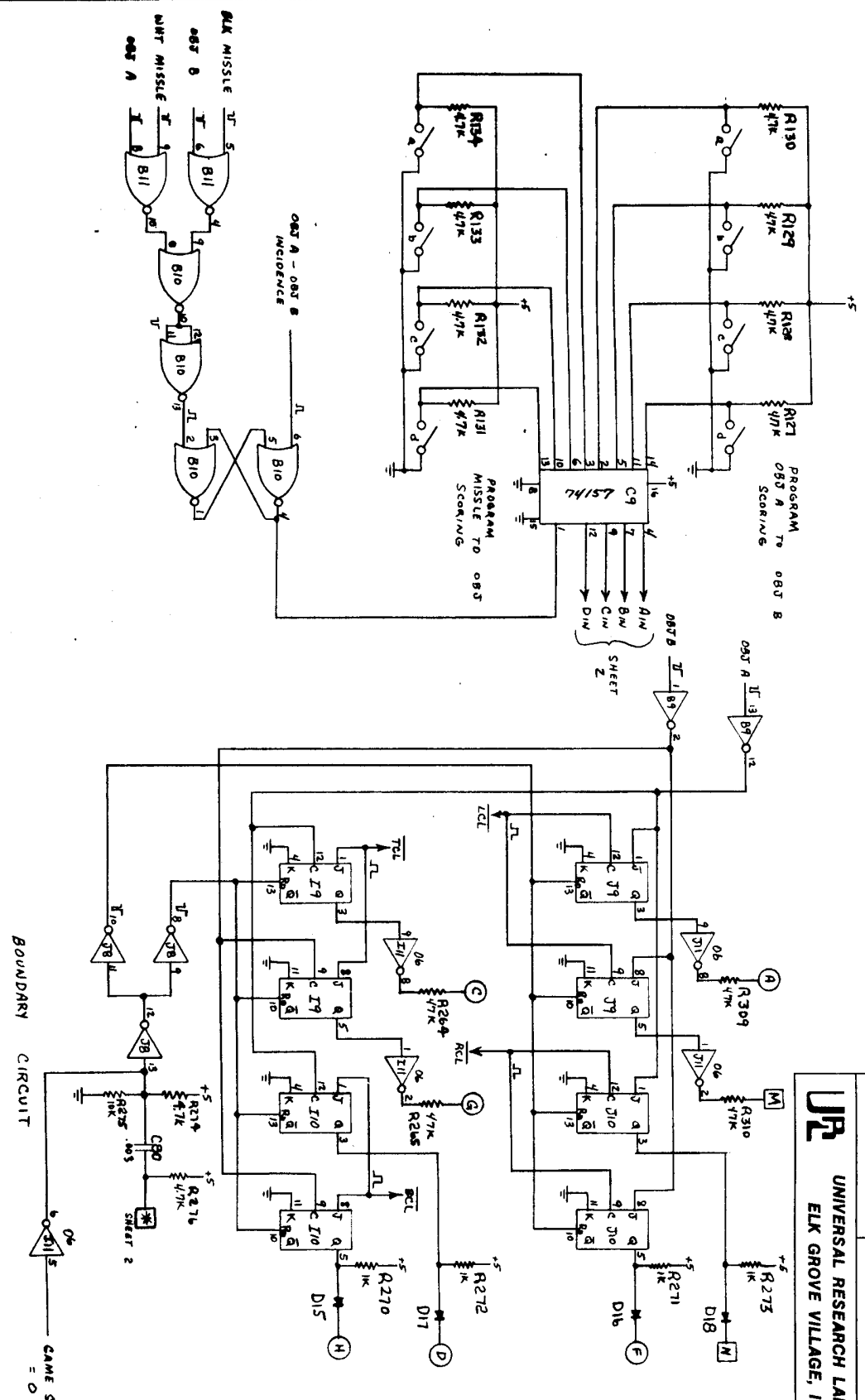
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REVISIONS  
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 PRODUCTION  
 3/10/57  
 J. H. HAY

REVISION  
 1 PRODUCED FOR SHEETS 10/1/54



BOUNDARY CIRCUIT

GAME START = 0

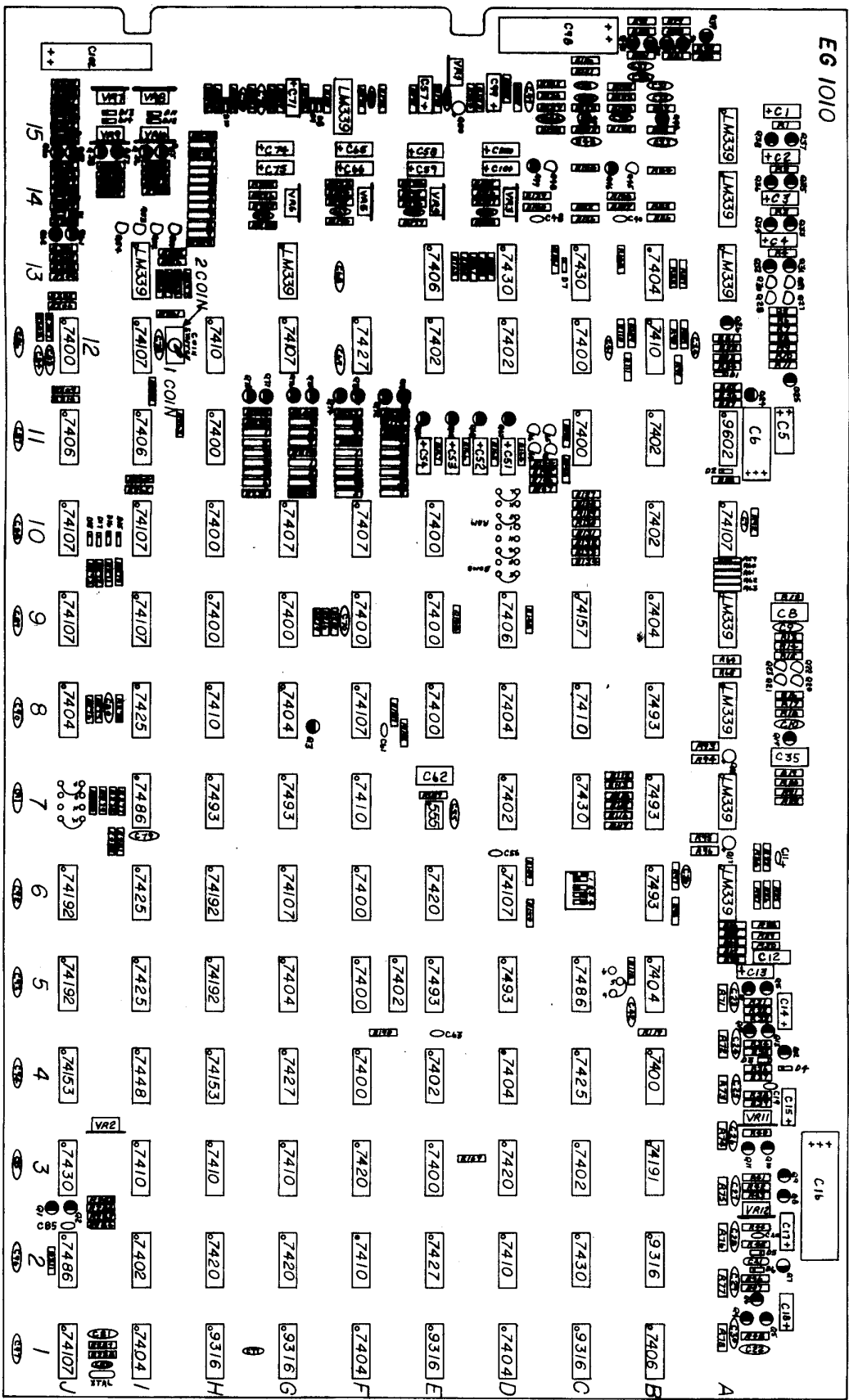
Eg 1010

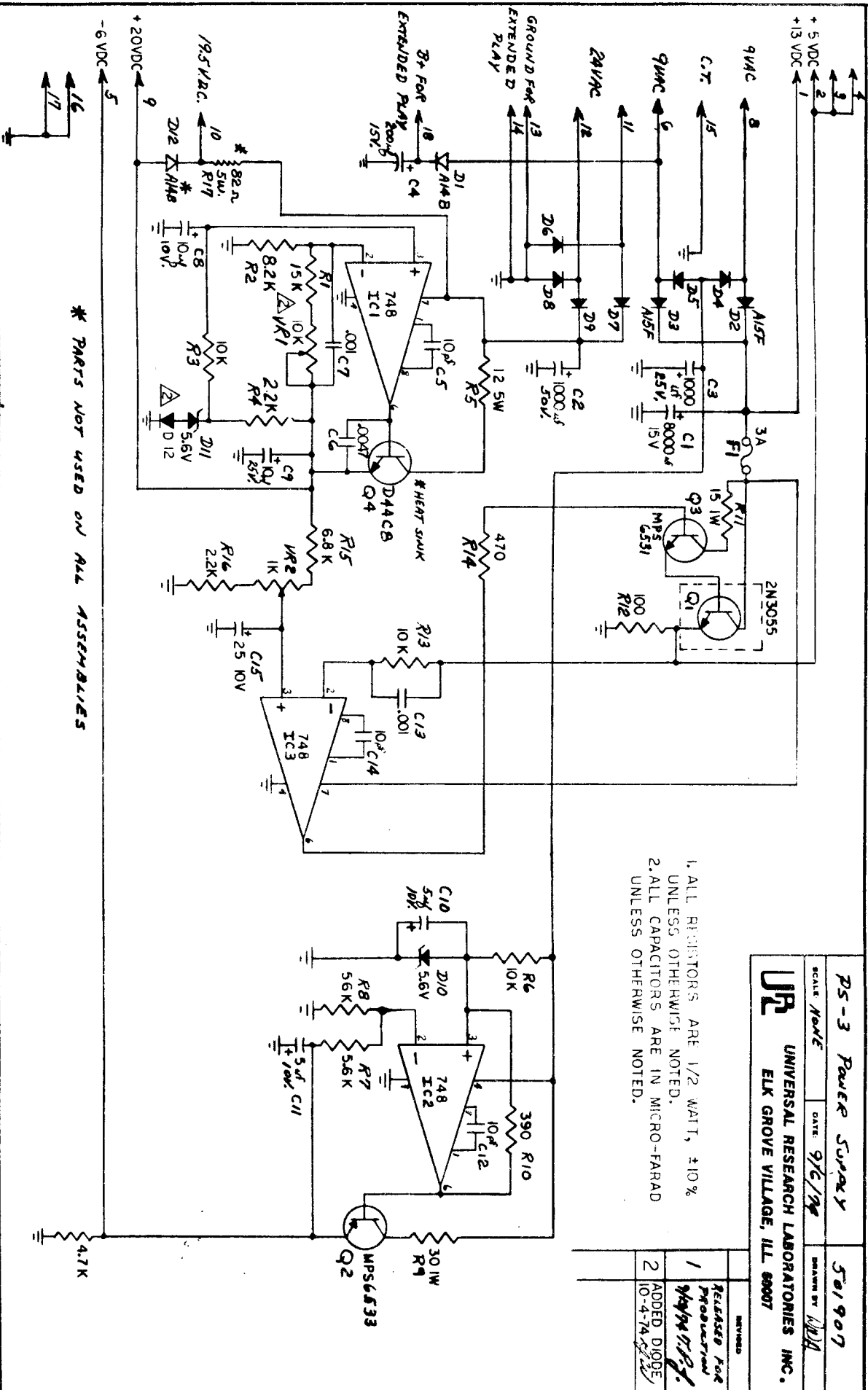
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\* PARTS NOT USED ON ALL ASSEMBLIES

1. ALL RESISTORS ARE 1/2 WATT, ±10% UNLESS OTHERWISE NOTED.
2. ALL CAPACITORS ARE IN MICRO-FARAD UNLESS OTHERWISE NOTED.

DS-3 Power Supply		501907
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REVISED	1	Released for Production
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