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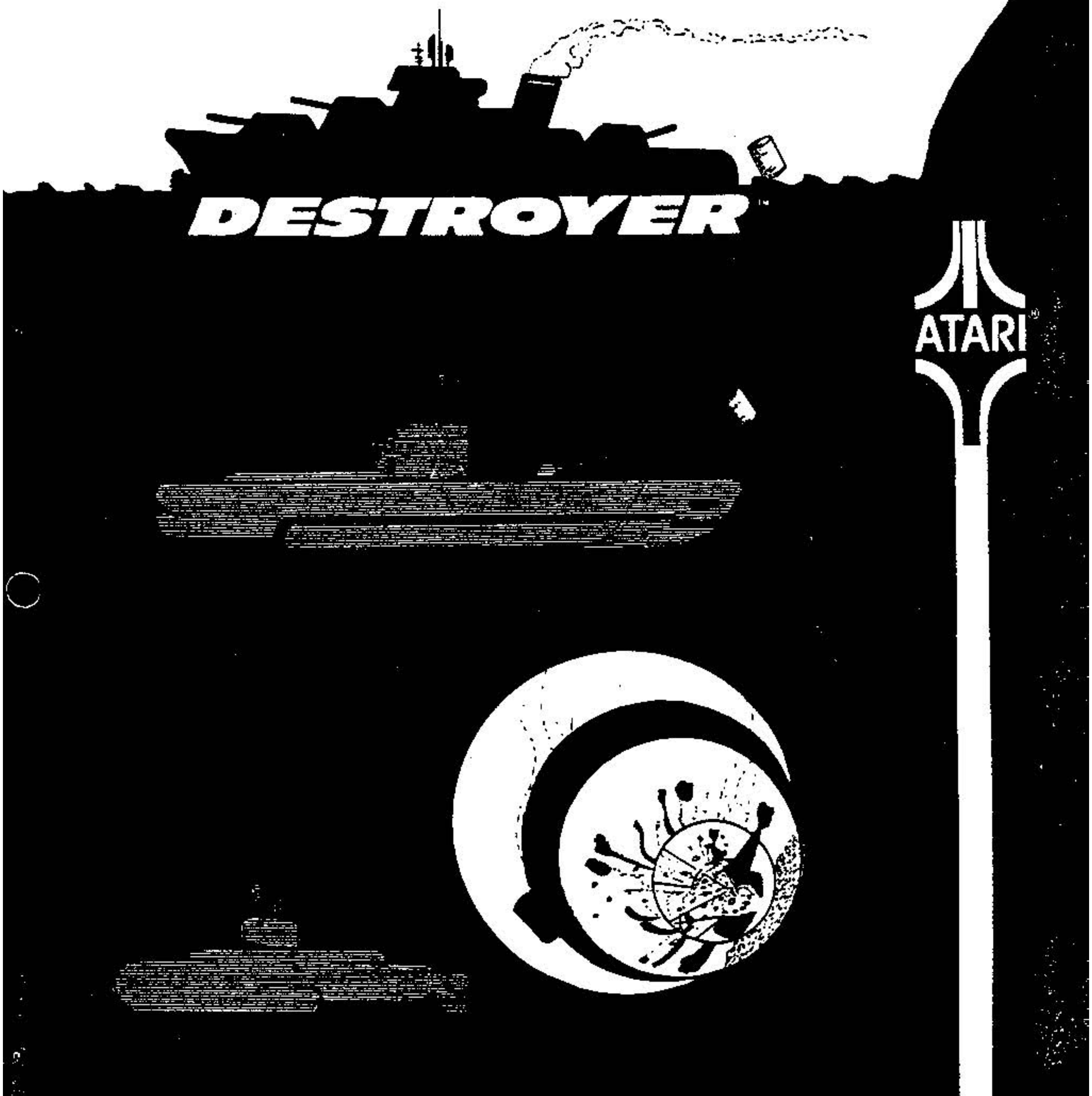
DESTROYER™



ATARI®

Operation, Maintenance and Service Manual

Complete with Illustrated Parts Catalog

DESTROYER™

Operation, Maintenance and Service Manual

Complete with Illustrated Parts Catalog

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408/745-2000 • TELEX 35-7488

ATARI®

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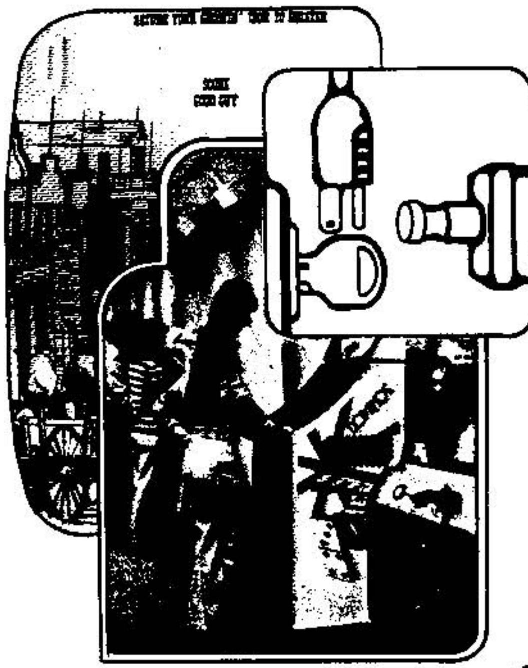


1

LOCATION SETUP

A. INTRODUCTION

Atari's Destroyer™ is a one player computer controlled game that simulates anti-submarine warfare. The object of the game is to sink as many submarines as possible. A player controls the speed of the destroyer, the time at which the depth charges are released, and the depth at which depth charges explode. Point value of submarines depends on both the speed and the depth at which the submarines travel.

As the owner of Destroyer, you have certain options available in the game. The options include: the number of coins necessary to play the game, how long the game will last, and whether or not extended play is awarded. These options are selected by removing the game printed circuit board from the metal RF box and setting the desired switches.

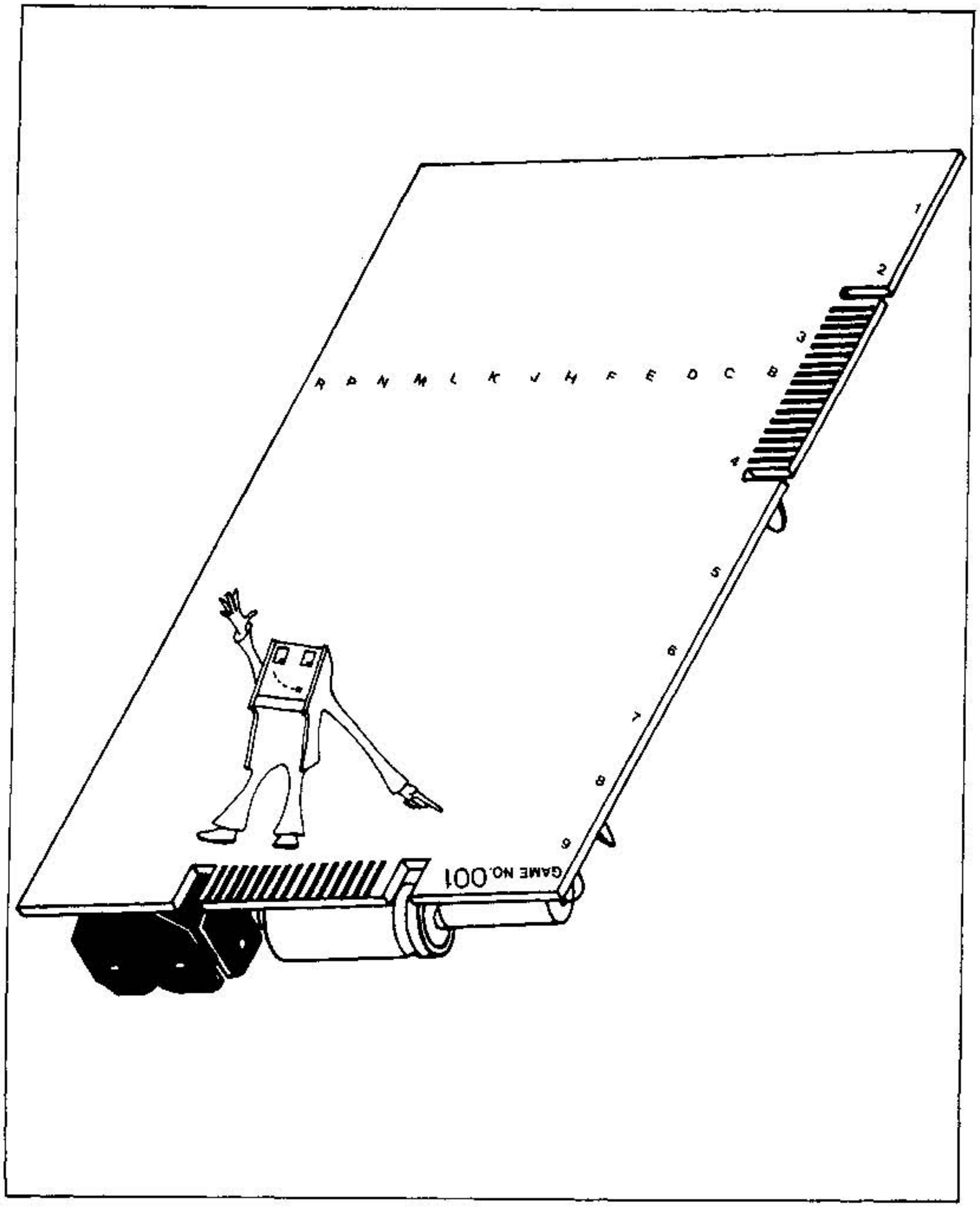


Figure 1-1 Location of Serial Number on Game PCB

Destroyer, like all recent Atari video games, has a self-test feature that tests approximately 75% of the game's circuitry. By energizing the self-test feature, you can determine whether the game is operating properly.

B. GAME INSPECTION

Your new Destroyer game is manufactured by Atari with the intent of being ready to play right out of the shipping carton. However, we need your cooperation in supplying the last touch of quality control. Therefore, please follow the procedures below to ensure that you are getting the quality of game that you expect from Atari.

1. Examine the external parts of the game cabinet for dents, chips, or broken parts. If you have purchased this game as a new unit, make sure that it looks new.

2. Unlock and open the rear access door. Examine the inside of the game cabinet for anything that appears broken or out of place.

C. LOCATION OF SERIAL NUMBER

The serial number for Destroyer is located on a metallic label in the upper left-hand corner of the back of the game cabinet. This serial number also appears in the corner (common to both edge connectors) on the back of the PCB inside the game cabinet. See Figure 1-1.

D. INSTALLATION REQUIREMENTS

All special requirements for installing the game are listed as follows:

Power Requirements:

Atari ships Destroyer for domestic operation on 110 VAC, rated at approximately 150 watts. The game can be changed to operate at 95 VAC, 205 VAC, or 220 VAC by unplugging the Molex connector plug (see Figure 1-2 for location of plug), and plugging in another Molex connector plug.

LINE VOLTAGE	VOLTAGE-CHANGING PLUG WIRE COLOR
95 VAC	BLACK
110 VAC	ORANGE
205 VAC	GREEN
220 VAC	RED

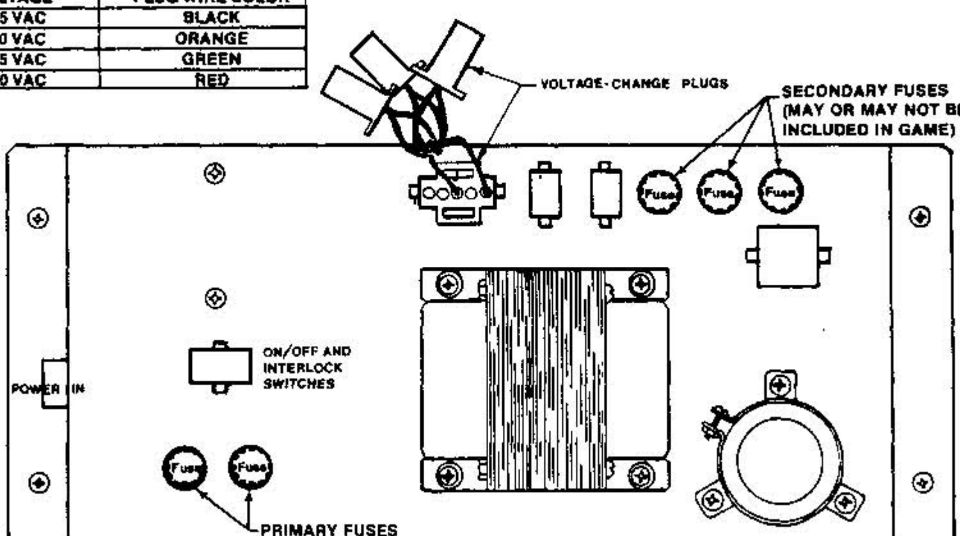


Figure 1-2 Location of Voltage-Changing Plugs on the Power Supply

Temperature Range:

Location and storage temperature ranges should be no lower than zero degrees Celsius (32 degrees Fahrenheit), and no higher than 49 degrees Celsius (120 degrees Fahrenheit).

Humidity Range:

Relative humidity at the game location or storage area should not exceed 95%.

Location Space Required:

Destroyer requires a minimum of 185 centimeters (73 inches) of vertical clearance, a minimum of 75 centimeters (29.5 inches) of width clearance, and 152 centimeters (60 inches) of depth clearance. Depth clearance includes a minimum of 61 centimeters (24 inches) of player space.

Type of Power Cord:

Atari has added a strain relief power cord to Destroyer. The advantage of the strain relief cord is that, if tripped over, the cord will break off. Tripping over a non-strain relief cord may result in ripping out the inside of the game.

E. INTERLOCK AND POWER ON/OFF SWITCHES

To minimize the hazard of electrical shock while you are working inside the game cabinet, an interlock switch has been installed at the rear access door. This switch removes all power from the game while the access door is open.

To help you conserve energy, a power on/off switch has been installed on the right side of the top panel, near the front of the game cabinet. See Figure 1-3 for location of switches.

Please check for the proper operation of the rear access interlock switch by performing the following:

1. Unlock and open the rear access door.
2. Plug the AC power cord into a 110-volt source. (If the voltage is less than 100 VAC, make sure that the voltage plug is changed to the black plug.)
3. Set the power on/off switch to the on position by flipping the toggle switch toward the front of the game cabinet.
4. Close the rear access door. Within approximately thirty seconds the TV monitor should display a picture.
5. Slowly open the rear access door until the TV monitor picture disappears. The TV monitor picture should disappear when the rear access door is opened to less than one-inch at the top of the door.
6. Close and lock the rear access door. If the results of Step 5 are satisfactory, then the interlock switch is operating properly. If not satisfactory, check to see if the switch is broken from its mounting or stuck in the on position.

F. SELF-TEST PROCEDURE IN TABLE 1-1

Destroyer will test itself and provide data to communicate with you that the game's circuitry and controls are working properly. We suggest that you do the Destroyer self-test procedure each time you empty the coins from the game's cash box.

There are two tests performed with the self-test switch on. The first test is done completely by the Destroyer computer. In this test, the computer displays the alpha-numeric character set, determines if its memory is ok, and then displays a code for the game time setting. The second test requires you to activate each switch to determine if they are operating properly. A third test is performed with the self-test switch off. In this test, you determine if the depth control and cursor are operating properly.

Perform the self-test by following the instructions in Table 1-1.

G. OPERATOR OPTIONS IN TABLE 1-2

At this time, decide what options are best suited for your location of the Destroyer game. The coinage options on Destroyer are free play, 2 games per coin, 1 game per coin, or 2 coins per game. Destroyer also has a time option for a 50-second, a 75-second, a 100-second, or a 125-second game. A free play mode may also be set for demonstration.

Set the options of the game as described in Table 1-2. Refer to Table 1-2 for the location of the option controls.

H. FOREIGN LANGUAGE TRANSLATION

Translation of the English language, used on the TV monitor display, is easily accomplished by adding two read-only memories (ROMs). These ROMs provide translation into German, French, and Spanish. After adding these ROMs, the option

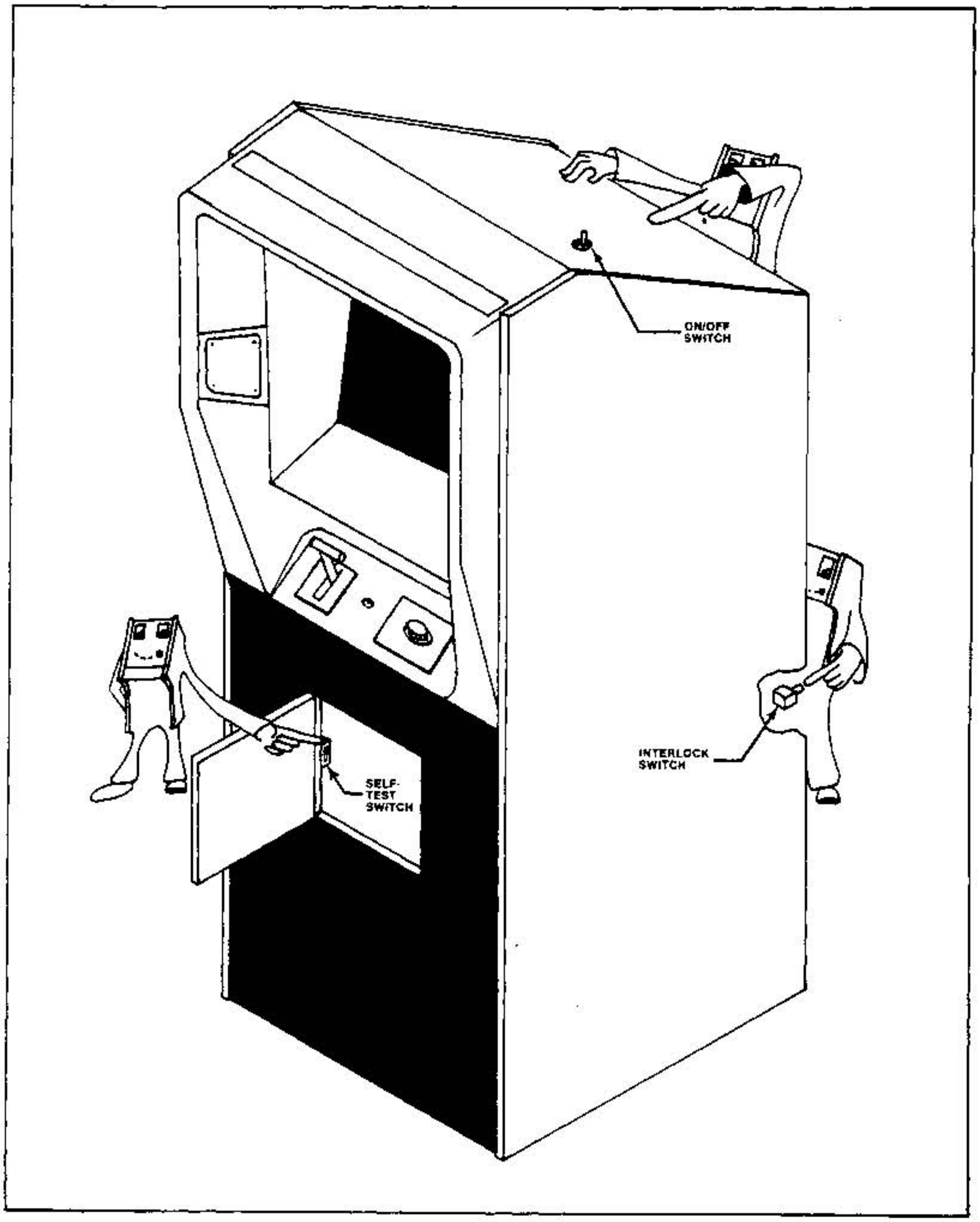


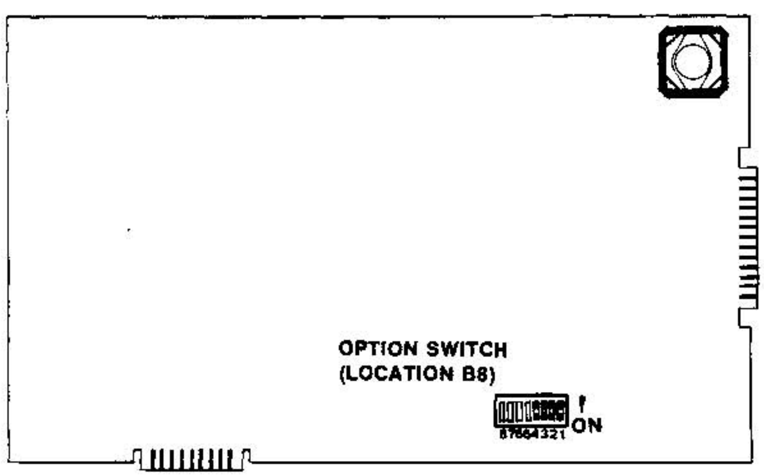
Figure 1-3 Location of Power On/Off and Interlock Switches

Table 1-1 Destroyer Self-Test

Test	Instruction	Results if Test Passes	Results if Test Fails
1	Unlock and open the coin door. Set self-test slide switch (located inside and to the left of the coin door) to the *on* position.	Top displayed line on TV monitor is numeric characters 0 through 9, displayed twice.	One or more numeric character is missing.
		Second displayed line on TV monitor is Alphabetic characters A through Z.	One or more alphabetic characters is missing.
		Third displayed line on TV monitor is RAM OK ROM OK.	Third displayed line on TV monitor is BAD RAM and/or BAD ROM.
		Fourth displayed line on TV monitor is a single digit indicating the setting of the game timer as follows: 0 = 50 second game 1 = 75 second game 2 = 100 second game 3 = 125 second game	
2	Press START pushbutton.	Sonar ping sound is heard each each time the START pushbutton is pressed.	No sound is heard.
	Move DESTROYER SPEED CONTROL from one position to the other and back again.	Sonar ping sound is heard each time the DESTROYER SPEED CONTROL is moved to FAST and each time it is moved to SLOW.	No sound is heard.
	Press the DEPTH-RELEASE CONTROL.	Sonar ping sound is heard each time the DEPTH-RELEASE CONTROL is pressed.	No sound is heard.
	Trip the left then the right coin acceptor trip wire.	Sonar ping sound is heard each time a coin acceptor trip wire is tripped.	No sound is heard.
	Close contacts of the coin door slam switch.	Sonar ping sound is heard each time the slam switch contacts are closed.	No sound is heard.
3	Set self-test slide switch to off position. Trip one of the coin acceptor trip wires for a game credit. Rotate knob marked ROTATE TO SET DEPTH OF CHARGE fully clockwise, then fully counterclockwise.	Dashed horizontal line moves up when knob is rotated in one direction and down when rotated in the other direction.	Dashed horizontal line does not move or is not present at all.

Table 1-2 Option Switch Settings

Option	Option Switch Settings					
	1	2	3	4	7	8
Free Play			ON	ON		
2 Plays per Coin			ON	OFF		
1 Coin Per Play			OFF	ON		
2 Coins Per Play			OFF	OFF		
50-Second Game	ON	ON				
75-Second Game	ON	OFF				
100-Second Game	OFF	ON				
125-Second Game	OFF	OFF				
No Extended Play					ON	ON
Extended Play for 1500 points					OFF	ON
Extended Play for 2500 points					ON	OFF
Extended Play for 3500 points					OFF	OFF



switches must be set for the proper language translation. See Table 1-3 for the proper option switch settings.

Table 1-3 Language Option Switch Settings

Language	Option Switch Setting	
	5	6
German	OFF	OFF
French	ON	OFF
Spanish	OFF	ON
English	ON	ON

The translation ROMs are available through Atari Customer Service. In your order, please include the serial number of your Destroyer game. Contact Atari Customer Service at the following address:

Atari Customer Service
2175 Martin Avenue
Santa Clara, California 95050

I. VOLUME CONTROL

If volume is incorrect for your location, remove the game PCB and adjust the volume to your desire. See Figure 1-4 for the location of volume control.

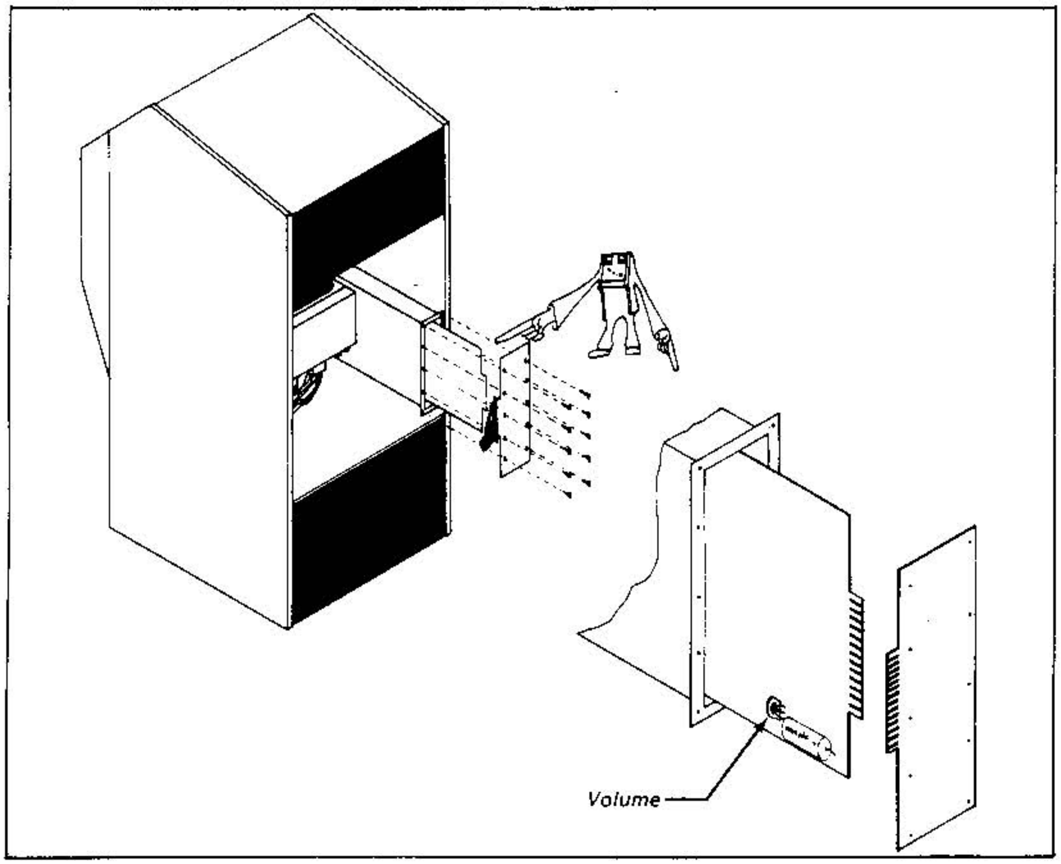


Figure 1-4 Location of Volume Adjustment

2 GAME PLAY

During game play, Destroyer operates in one of four modes: attract, ready-to-play, play mode, or game over mode.

A. ATTRACT MODE

The attract mode begins with the application of power and ends when the proper amount of coins are accepted. During this mode the most recent score appears in the upper left, the high score since power on appears in the upper right. The appropriate coin and extended play messages appear in the middle of the screen, according to the options you have selected. All controls and sounds are inactive during this mode. The submarines and the destroyer appear as in game play.

B. READY-TO-PLAY MODE

This mode begins when the proper number of coins are accepted, and ends when the START button is pressed. During this mode, the message PRESS START appears, coin messages disappear, the ships freeze on the screen and the depth control is enabled so that the player is familiar with it before the game starts.

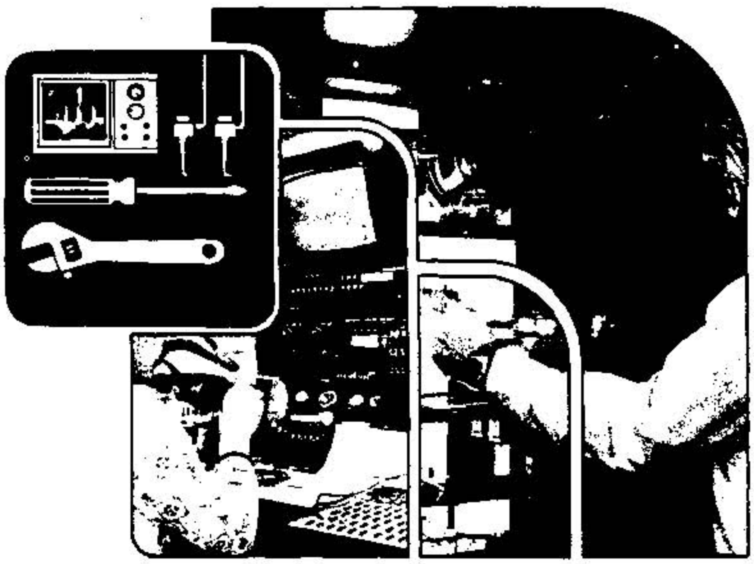
C. PLAY MODE

This mode begins when the START button is pressed and ends when the game is over. During this mode all controls and sounds are active. The player sets the depth at which charges explode by rotating the DEPTH-RELEASE CONTROL. Depth is indicated on the screen by a dashed horizontal line (called "the cursor"). Depth charges are released by pushing the DEPTH-RELEASE CONTROL. Once the depth charges are released, the depth cannot be reset. In other words, the charges always explode at whatever depth the cursor was set at when the charges were released. A direct hit is not necessary since the shock wave from a near miss will crush the submarine's hull. The speed of the destroyer may be controlled by the DESTROYER SPEED CONTROL lever. The control has a SLOW and a FAST position that result in a distinctive change in the rate at which the Destroyer moves across the TV monitor. The engine sound changes accordingly.

When a depth charge explodes without hitting a submarine, a low "boom" sound is heard. When a sub is hit the explosion quality changes to cue the player (along with the explosion scene) that a submarine has been hit. Sonar pings are heard any time explosions aren't active. Points are displayed where the submarine was hit, after each explosion scene.

D. GAME OVER MODE

When the game ends, the words GAME OVER appear on the screen for approximately four seconds. Then, if there is credit, the machine enters the ready-to-play mode. If there is no credit the machine enters the attract mode.



MAINTENANCE AND ADJUSTMENTS

Due to its solid-state electronic circuitry, this Atari unit should require very little maintenance and only occasional adjustment. Information given in this chapter and elsewhere in this manual is intended to cover most servicing situations that may be encountered at the game site. The procedures given are in sufficient detail to be understood by a person with moderate technical background.

If reading through this manual does not lead to solving a specific maintenance problem, you can reach Atari's Customer Service Department by telephone Monday through Friday, from 7:30 a.m. to 4 p.m. Pacific Time. From California, Alaska and Hawaii, call (408) 984-1900; from the remaining 47 states call (800) 538-6892 (toll-free).

If you are interested in gaining more information on video game technology, especially the electronics, we recommend reading the Video Game Operator's Handbook, manual number TM-043. This book is available from Atari, Inc., Attn. Customer Service Department, 2175 Martin Avenue, Santa Clara, CA 95050 for $5 each, or from your distributor.

3

A. CLEANING

The exteriors of game cabinets and plex panels may be cleaned with any non-abrasive household cleaner. If desired, special coin machine cleaners that leave no residue can be obtained from your distributor. Do *not* dry-wipe the plex panels because any dust can scratch the surface and result in fogging the plastic.

B. COIN MECHANISM

Components On Coin Door

Figure 3-1 shows the back side of the coin door assembly where the game's two coin mechanisms are mounted. Included is the lock-out coil assembly; the lock-out wires are connected to this assembly but are hidden behind the coin mechanisms. During the attract mode the microcomputer energizes the lock-out coil, causing the lock-out wires to retract far enough to allow genuine coins to reach the coin box. But during the ready-to-play mode when the LED is lit, and during the play mode (and also when AC power to the game has been turned off), the lock-out coil is de-energized, causing the lock-out wires to move out far enough to divert coins over to the return chute.

Directly below each coin mechanism is a secondary coin chute and a coin switch with a trip wire extending out to the front edge of the chute. When the trip wire is positioned correctly, a coin passing down the secondary chute and into the coin box will momentarily push the trip wire down and cause the switch contacts to close.

Also shown in the photograph is a slam switch assembly. It has been included to discourage any players who might try to obtain free game plays by violently pounding on the coin door to momentarily close the contacts on a coin switch. The slam switch contacts connect to the microcomputer system, which will ignore coin switch signals whenever the slam switch contacts are closed.

Access to Coin Mechanisms

To remove jammed coins, and for maintenance cleaning, each magnet gate assembly can be hinged open without removing it from the door, as shown in Figure 3-2. Or, if necessary, each coin mechanism can be entirely removed from the door merely by pushing down on a release lever and simultaneously tilting the mechanism back, then lifting it up and out. This is shown in Figure 3-3.

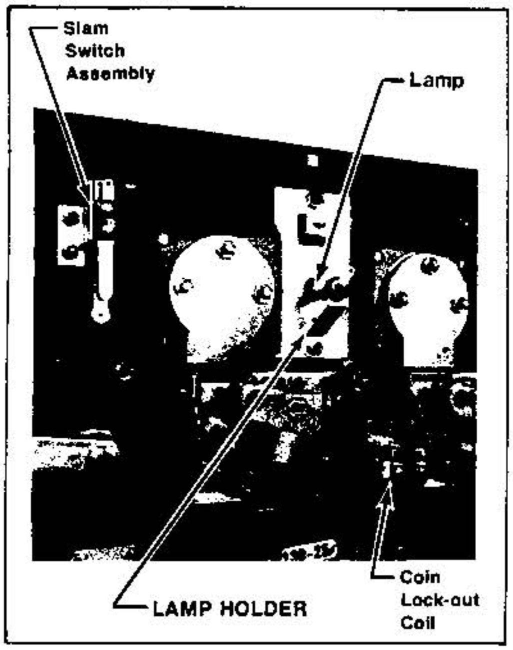


Figure 3-1 Coin Door Assembly

Figure 3-2 Hinging Open the Magnet Gate Assembly

Figure 3-3 Removal of Coin Mechanism

Cleaning of Coin Paths

CAUTION

The use of an abrasive (such as steel wool or a wire brush) or a lubrication on a coin mechanism will result in a rapid buildup of residue.

By talking to many operators, we have found that the best method of cleaning a coin mechanism is by using hot or boiling water and a mild detergent. A toothbrush may be used for those stubborn buildups of residue. After cleaning, flush thoroughly with hot or boiling water, then blow out all water with compressed air.

Figure 3-4 shows the surfaces to clean inside the coin

(Clean both surfaces where coin enters the mechanism, as well as the magnet)

Figure 3-4 Surfaces to Clean Inside the Coin

mechanism. These include the inside surface of the mainplate, and the corresponding surface of the gate assembly. There may also be metal particles clinging to the magnet itself. To remove these you can guide the point of a screwdriver or similar tool along the edge of the magnet.

If coins are not traveling as far as the coin mechanisms, you will need to clean the channel beneath the coin slot. To gain access to this channel, use a ⅜-inch wrench and remove all three nuts that secure the cover plate (refer to Figure 3-5). Removing the plate will provide access to the entire channel.

Also clean the inside surfaces of the secondary coin chutes, but when doing this be careful not to damage or bend the trip wires on the coin switches.

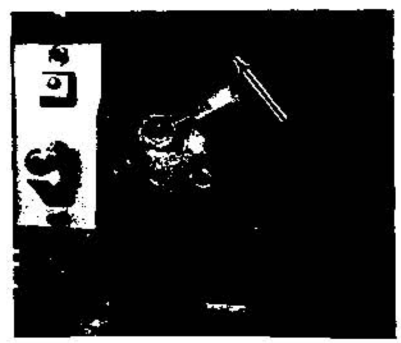


Figure 3-5 Removal of Plate Covering Rear of Coin Slot

Lubrication

Do *not* apply lubrication to the coin mechanisms. The only points that may need lubrication (and only rarely) are the shafts of the scavenger buttons (coin rejection buttons) where they pass through the coin door. Apply only one drop of light machine oil, and be positive that no oil drops down onto a coin mechanism. Figure 3-6 shows this lubrication point.

Adjustment of Coin Switch Trip Wire

In order for a coin switch to operate reliably when a coin travels down the secondary coin chute, the rest position of its trip wire should be as shown in Figure 3-7. Use e

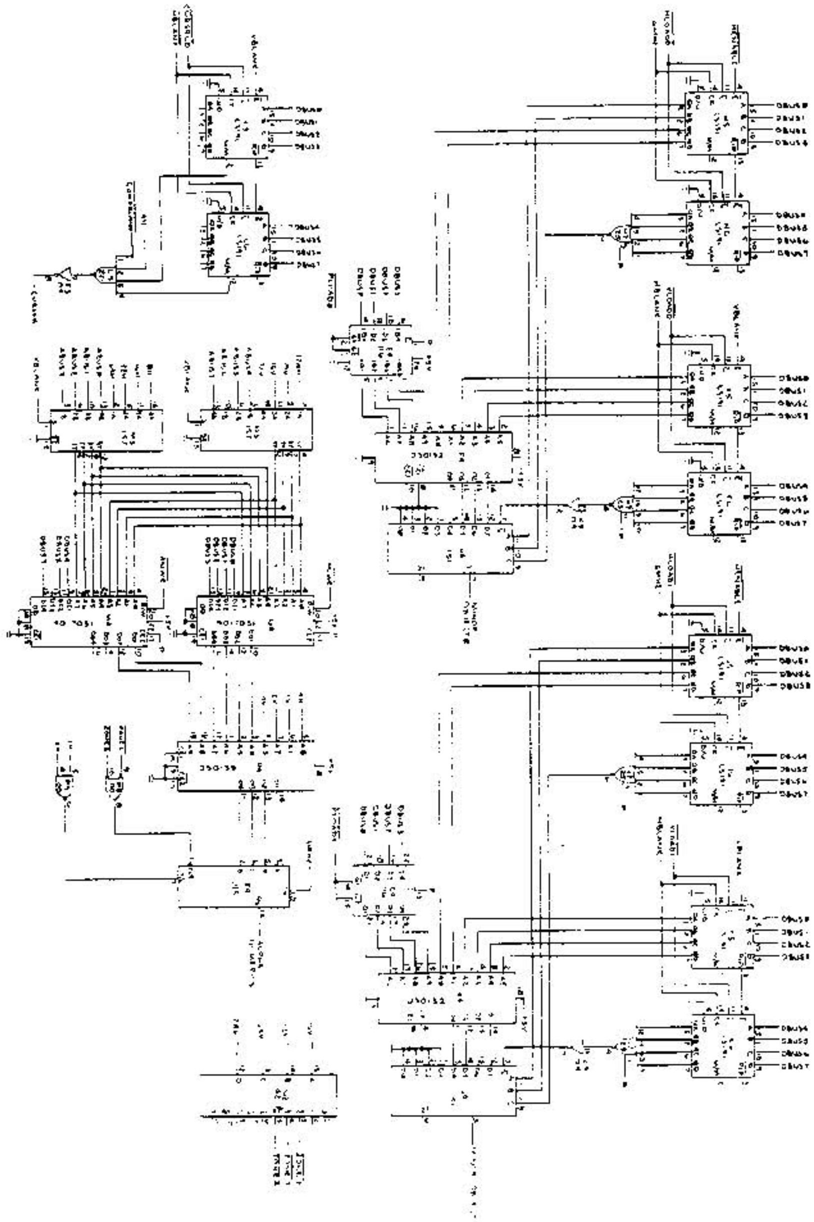


Figure 4-5 Destroyer PCB Schematic Diagram
Sheet 3 of 5

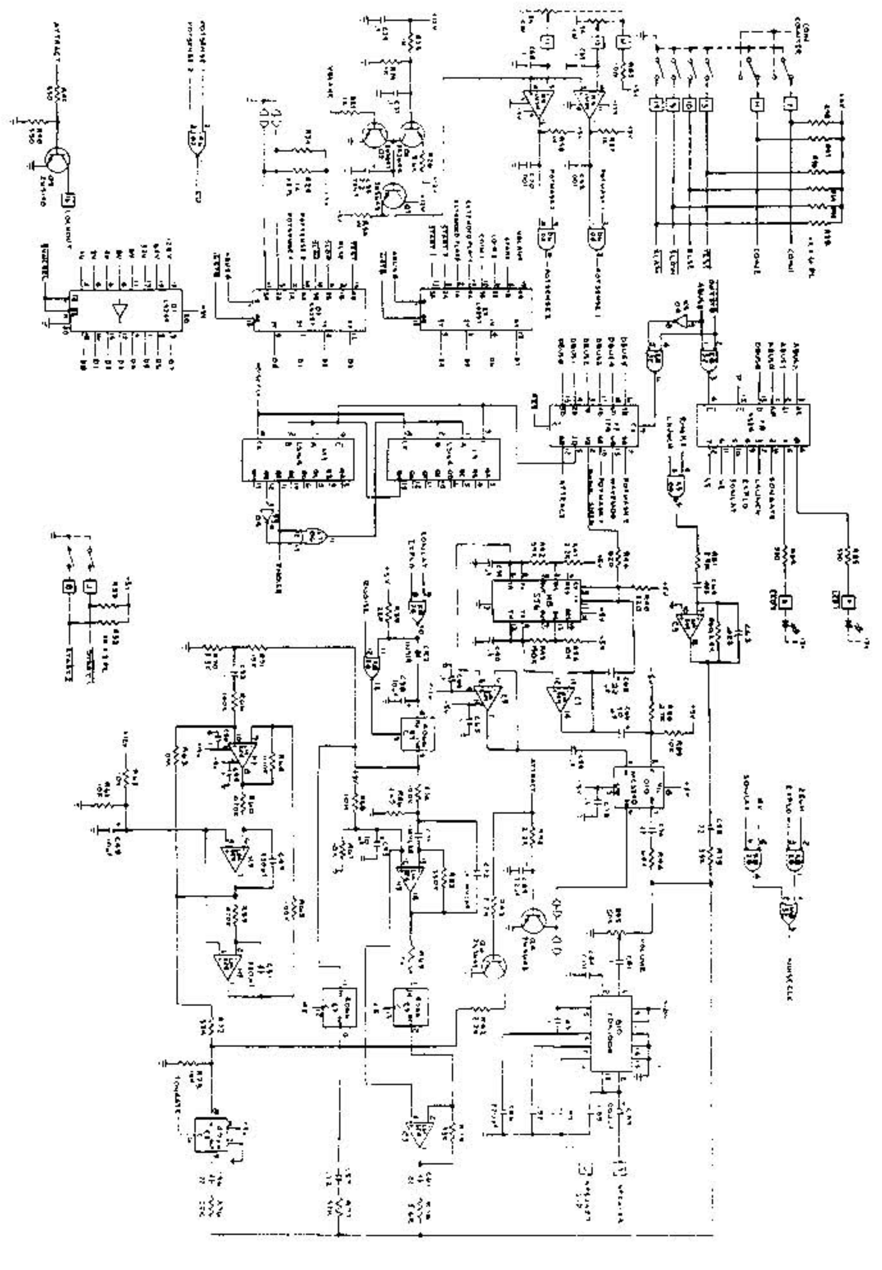


Figure 4-5 Destroyer PCB Schematic Diagram
Sheet 4 of 5

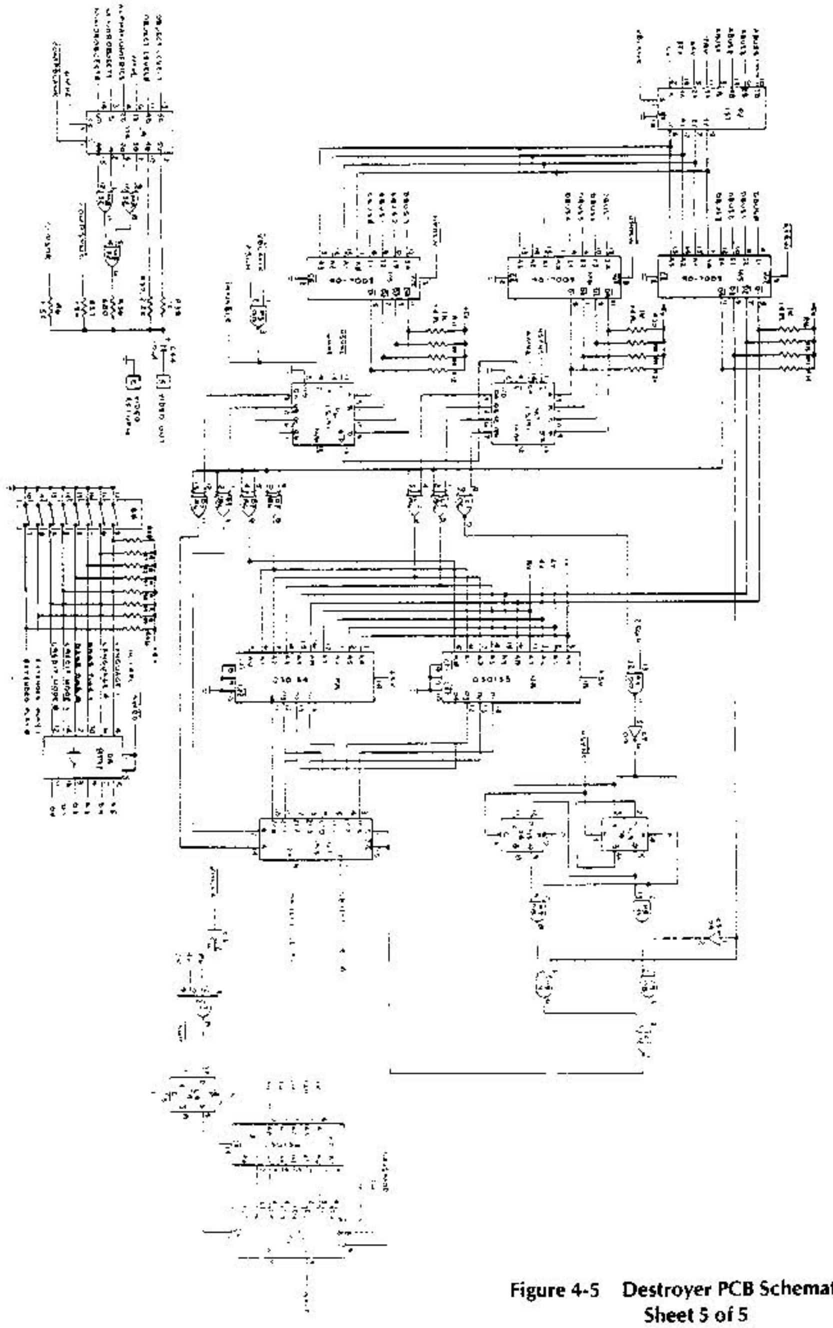


Figure 4-5 Destroyer PCB Schematic Diagram
Sheet 5 of 5

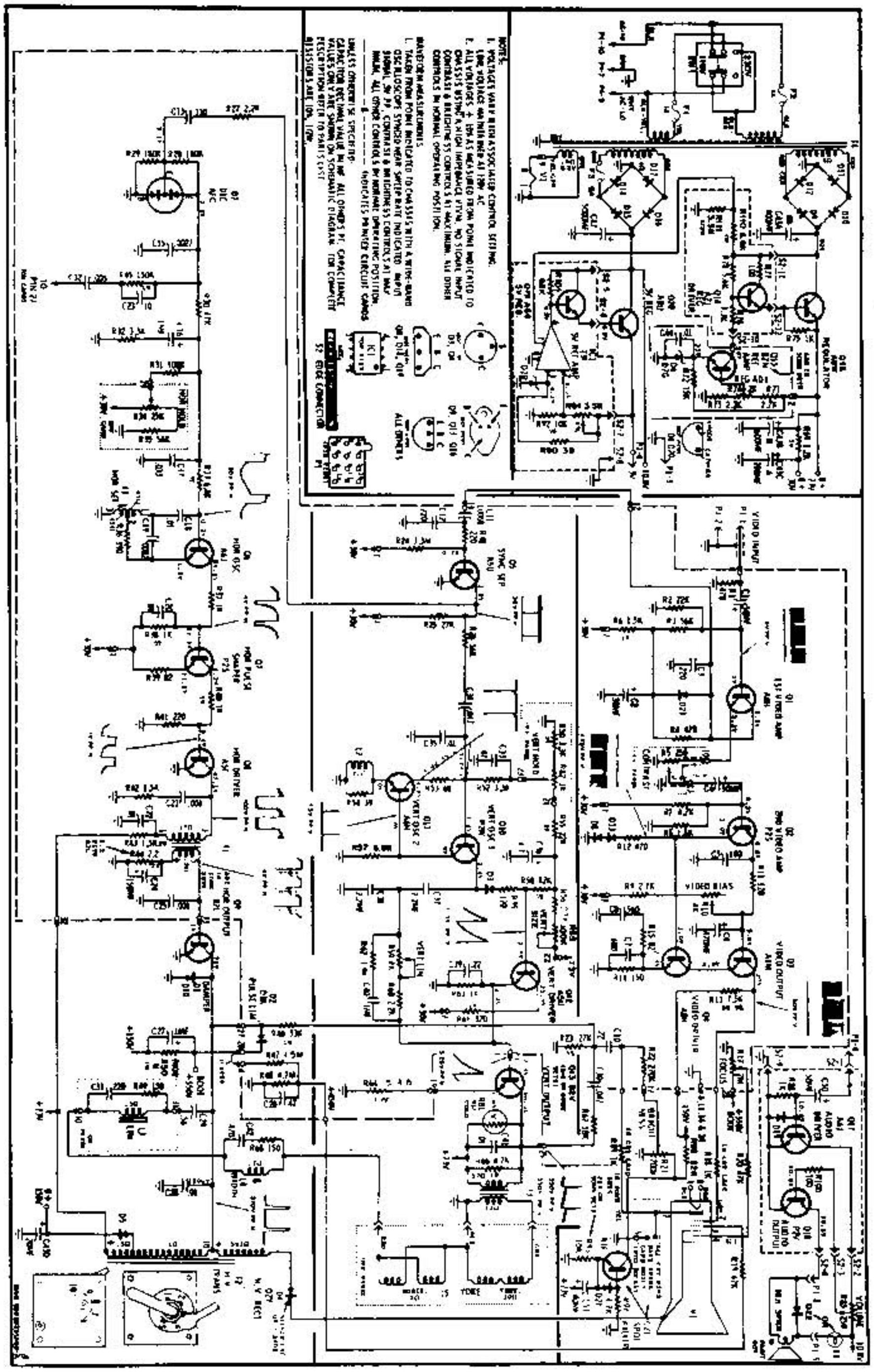


Figure 4-6 Motorola TV Monitor Schematic

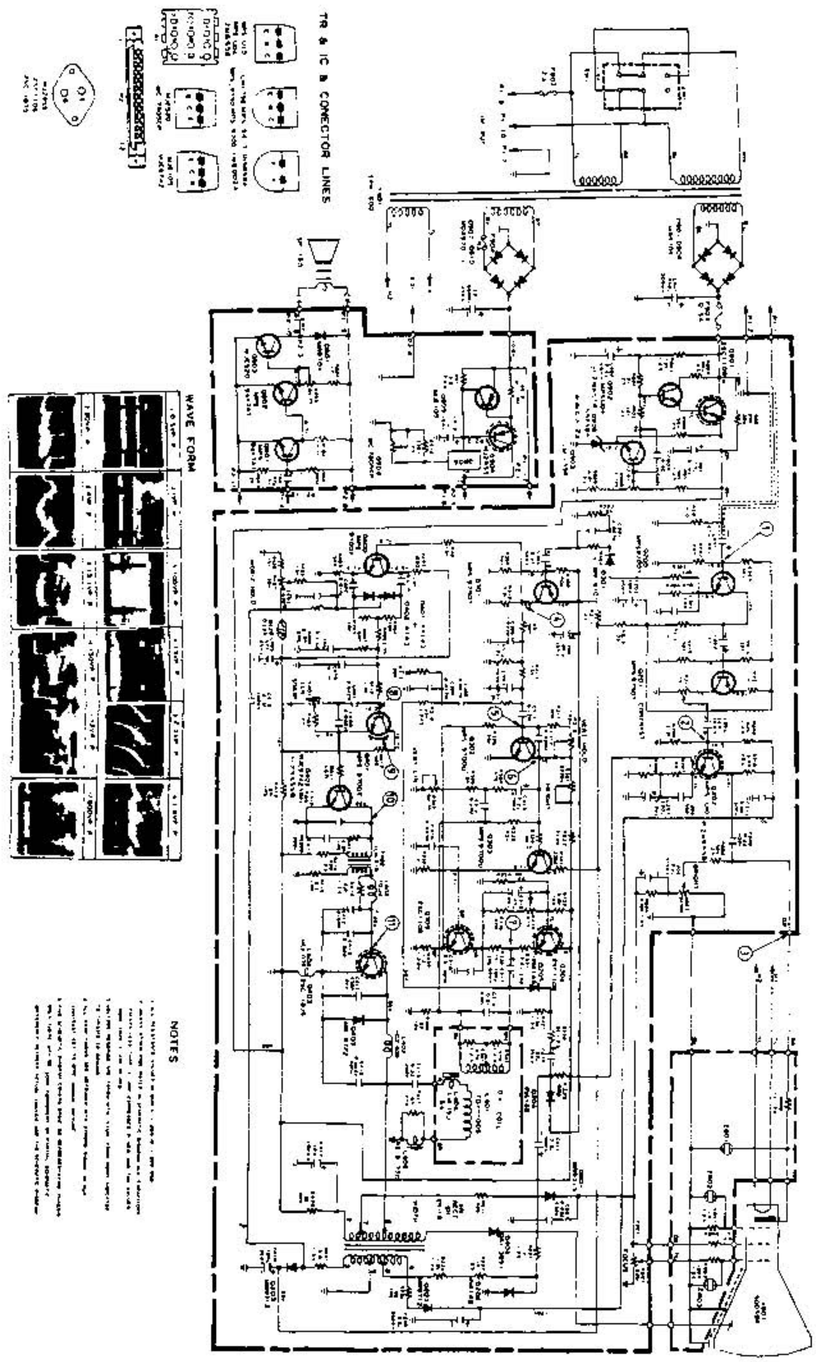
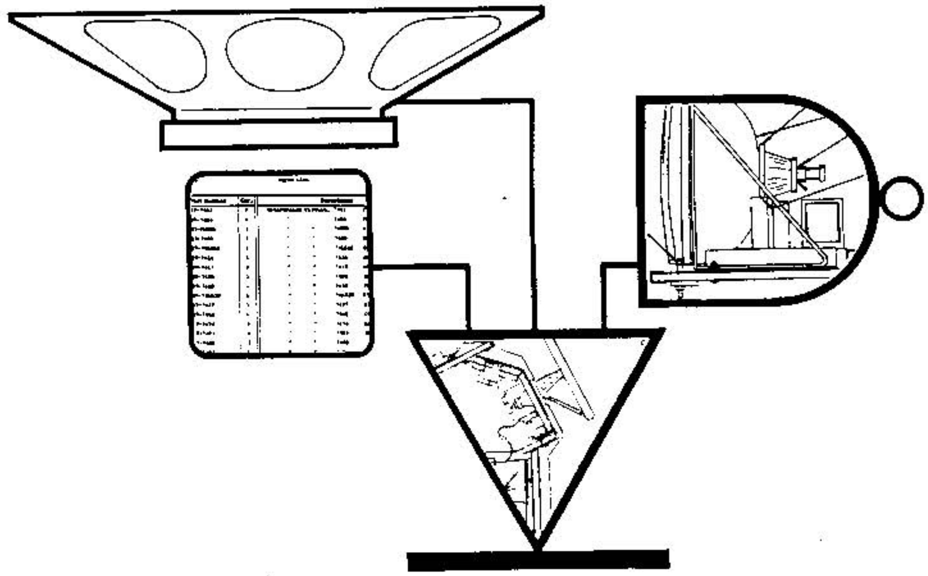


Figure 4-6 TEC TV Monitor Schematic



ILLUSTRATED PARTS CATALOG

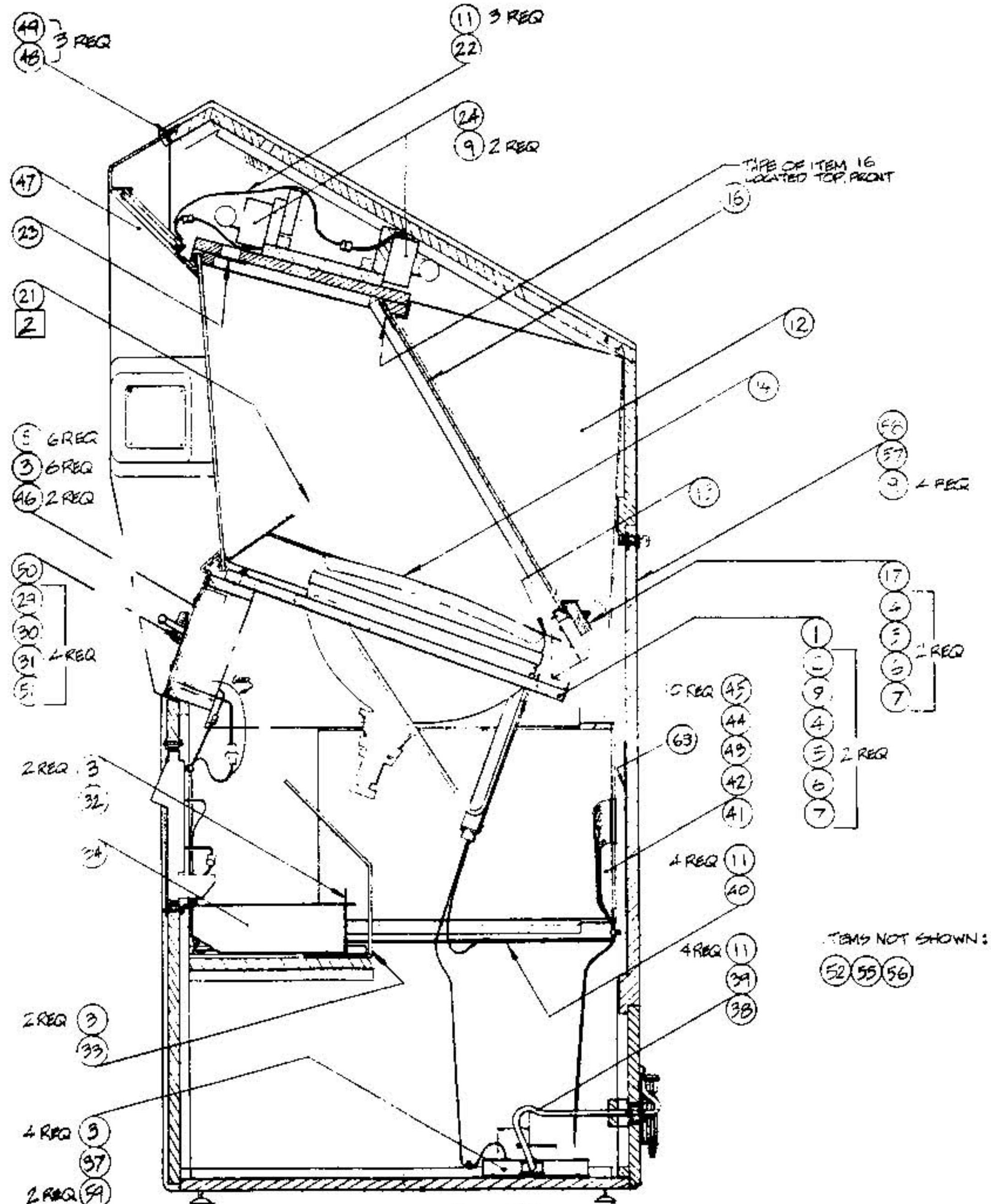
The purpose of this Chapter is to provide you with the necessary information for ordering replacement parts for the Destroyer Game.

When ordering parts from your distributor, give the part number, part name, applicable figure number of this list, and the serial number of your Destroyer game. This will help to avoid confusion and mistakes in your order. We hope the results will be less downtime and more profit from your Destroyer game.

If there are any questions about this list, please contact Atari's Customer Service Department by telephone Monday through Friday, from 7:30 a.m. to 4 p.m. Pacific Time. From California, Alaska and Hawaii, call (408) 984-1900, from the remaining 47 states call (800) 538-6892 (toll-free).

Your game will include either the Motorola or TEC monitor, depending on their availability during production.

5


49 48 3 REQ
11 3 REQ
22
24
9 2 REQ
47
23
21
2
TYPE OF ITEM 16 LOCATED TOP FRONT
16
12
4
6 REQ
3 6 REQ
46 2 REQ
56
57
4 REQ
50
29
30
31 4 REQ
17
4
5
6
7
2 REQ
1
9
4
5 2 REQ
6
7
45
44
43
42
41
63
2 REQ 3
32
34
4 REQ 11
40
4 REQ 11
39
38
ITEMS NOT SHOWN:
52 55 56
2 REQ 3
33
4 REQ 3
37
2 REQ 59

SECTION JJ

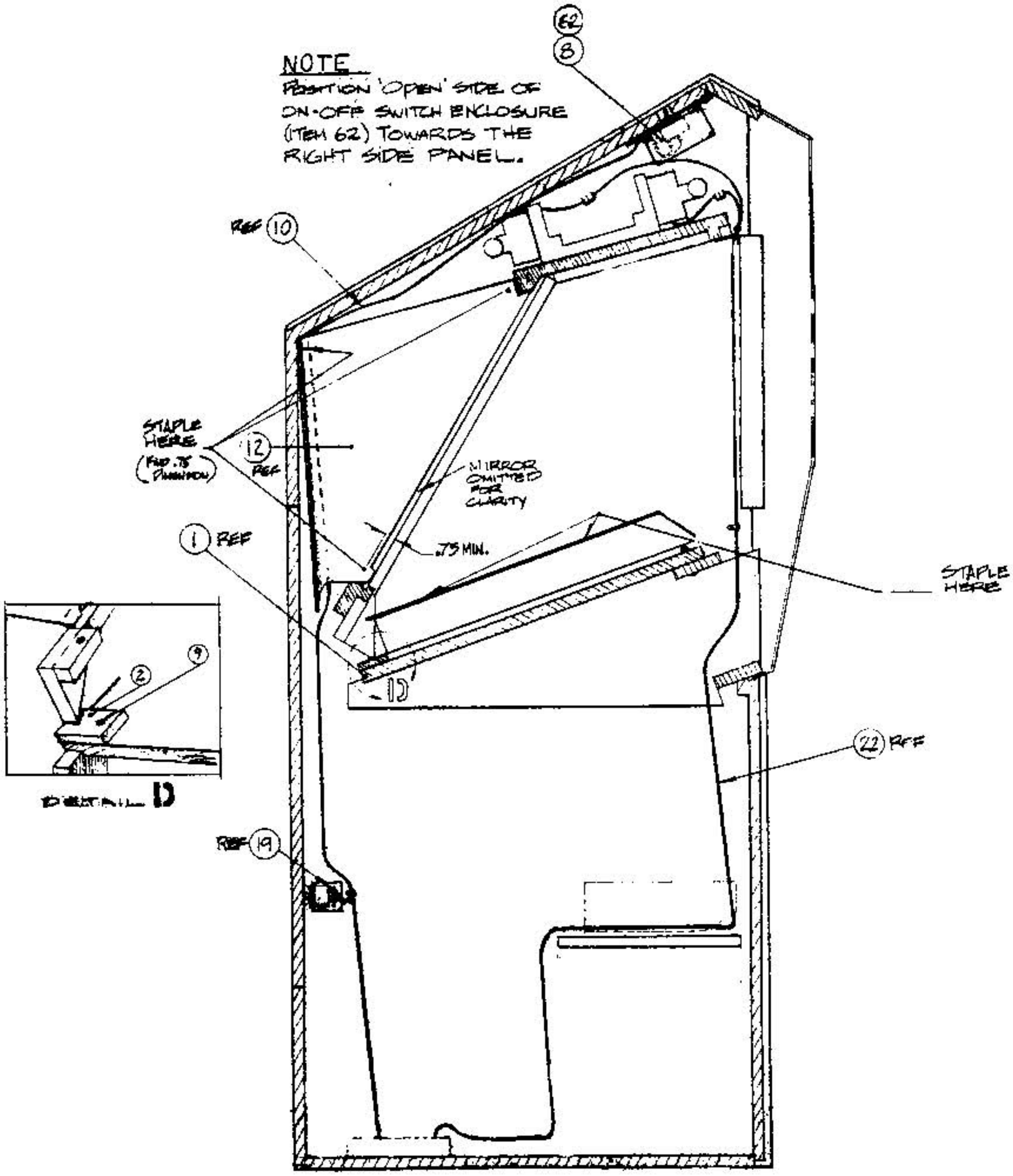


Figure 5-1 Destroyer Final Assembly

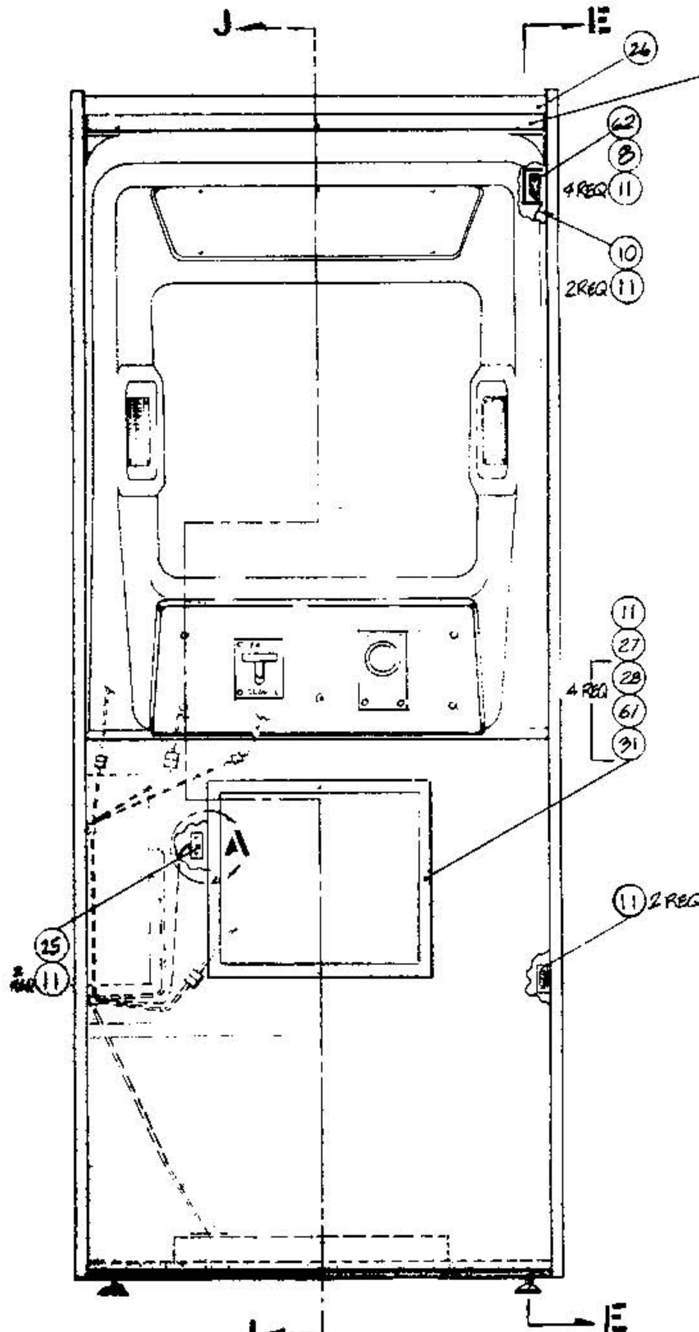


Figure 5-1 Destroyer Final Assembly

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Figure 5-1 Destroyer Final Assembly

Item	Part Number	Qty.	Description
1	A008577-01	1	TV Shelf Assy - See Figure 5-2
2	009264-01	2	Block TV Tray
3	72-6812	14	Screw, SM. #8 x 3/4 Lg., Phil Pan Hd.
4	75-010S	4	#10 Washer Flat
5	75-040	10	#10 Washer, Split-Lock
6	75-5132N	4	Bolt, Carriage, #10-24 x 2.00 Lg.
7	75-911S	4	#10-24 Nut, Hex
8	A009511-01	1	Power Switch & Harness Assy
9	82-1824	8	Wood Screw, #8 x 1.50" Lg. Flat Hd. Phil
10	A009013-01	1	Power Switch Harness
11	72-6610	25	Screw, SM., Pan Hd., Phil., #6 x 5/8" Lg.
12	009773-01	1	Rear Bezel W/Graphics
13	008572-01	1	Monitor Mask
14	009763-01	1	Vacuum Formed Overlay W/Graphics
15			
16	A009341-01	1	Mirror/Tape Assembly
17	A008557-01	1	Mirror Tie-Down Panel Assy
18			
19			
20			
21	009774-01	1	Front Bezel, with Graphics
22	A009270-01	Ref	Flourescent Light Harness
23	78-67032	A/R	Black Photo Tape
24	A008568-01	1	Display Light Assembly - See Figure 5-3
25	A006548-01	1	Slide Switch Assembly
26	A009770-02	1	Cabinet Assembly with Graphics
27	A009083-01	1	Coin Door Final Assembly - See Figure 5-4
28	75-5516B	4	Bolt, Carriage, #¼-20 x 1.00" Lg, Black
29	75-935S	4	Nut, Wing ¼-20
30	75-045	4	Washer Split Lock, ¼
31	75-015S	8	Washer, Flat ¼"
32	006870-01	1	Bracket, Coin Box
33	009343-01	1	Yoke Shield
34	A007902-01	1	Cash Box Assembly
35			
36			
37	A007197-01	1	Power Supply Assembly (B) - See Figure 5-6
38	A007784-01	1	Power Cord Assembly
39	78-25001	1	Screw Down Tie Wrap

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Figure 5-1 Destroyer Final Assembly

Item	Part Number	Qty.	DESCRIPTION
40	A030114-01	1	Main Harness
41	A009626-02	1	R.F. Shield Box Assembly
42	A009775-01	1	R.F. Shield PCB Assembly - See Figure 5-7
43	A009528-01	1	Destroyer Game PCB Assembly - See Figure 5-8
44	72-6808	1	Screw, SM., Pan., Hd., Phil., #8 x ½" Lg.
45	72-6608	10	Screw, SM., Pan., Hd., Phil., #6 x ½ Lg.
46	001638-01	2	Bracket Panel MTG
47	A009760-01	1	Front Housing Assembly
48	82-8016	3	Screw, Button Hd. Socket Cap, 10-32 x 1.00" Lg.
49	75-99090006	3	Well Nut, Blind Hole Fastener, 10-32
50	A009766-01	1	Control Panel Assembly - See Figure 5-9
51	75-5516B	4	Bolt Carriage #¼-20 x 1.00" Lg., Black
52	TM-106	1	Operation, Maintenance and Service Manual
53			
54			
55	006305-01	1	Printed Poly Bag
56	A006683-XX	1	Shipping Container Assembly
57	A006647-02	1	Rear Door Assembly W/Lock
58	005233-01	1	Rear Door Seal
59	46-201202	2	Fuse, 2 AMP
60	009345-01	1	Seam Cover
61	75-990505S	4	#¼-20 Nylon Lock Nuts
62	009992-01	1	On/Off Switch Enclosure
63	ST-106	1	Self Test Chart

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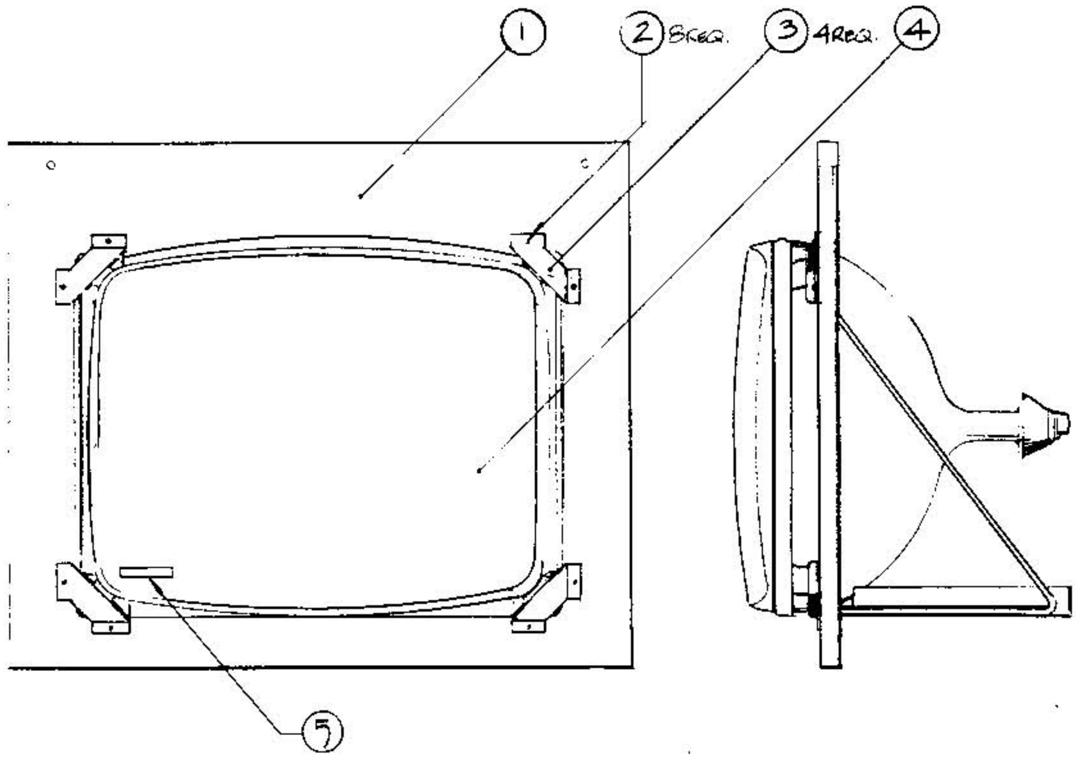

Figure 5-2 TV Shelf Assembly

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Figure 5-2 TV Shelf Assembly

Item	Part Number	Qty.	Description
1	008556-01	1	T.V. Shelf
2	72-6812	8	Screws, Self Tapping, #8 x 3/4 Phil. Pan Hd
3	005594	4	Monitor Tie Down
4	92-032	1	23-inch TV Monitor, Motorola Model M7000-155
	or		
	92-030		23-inch TV Monitor, TEC Model TM-623
5	006319-02	1	Copyright Decal

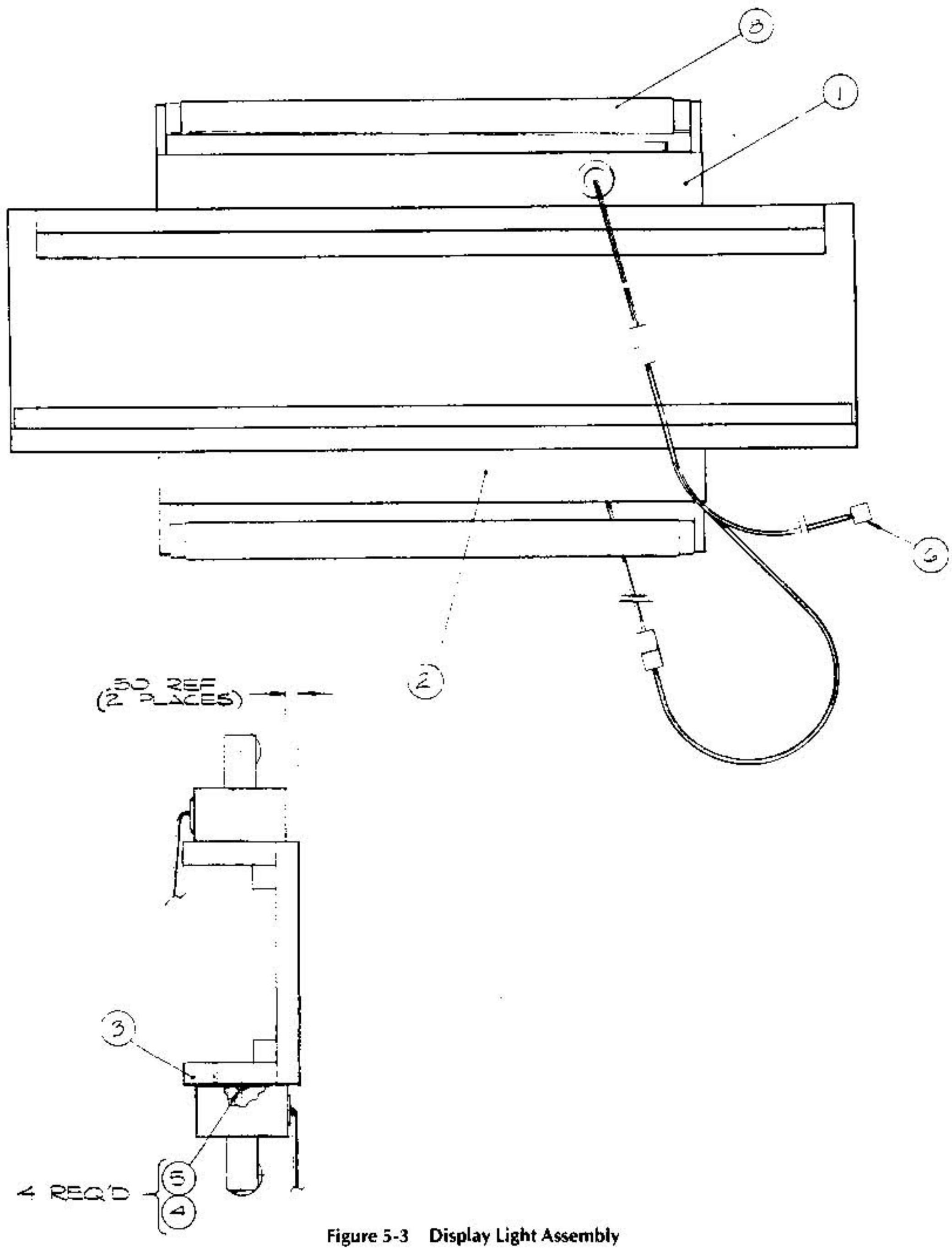

Figure 5-3 Display Light Assembly

Figure 5-3 Display Light Assembly

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Item	Part Number	Qty.	Description
1	A008860-01	1	Black Light Assembly 18"
2	A005495-01	1	18-Inch Fluorescent Light Assembly
3	A008561-01	1	Light Mount Assembly
4	72-6812	4	#8 x 3/4" S.M. Screw
5	75-010S	4	Washer Flat, #10
6	A009270-01	1	Fluorescent Light Harness
7			
8	70-306	1	Fluorescent Tube 18" (F15 T8/BL)

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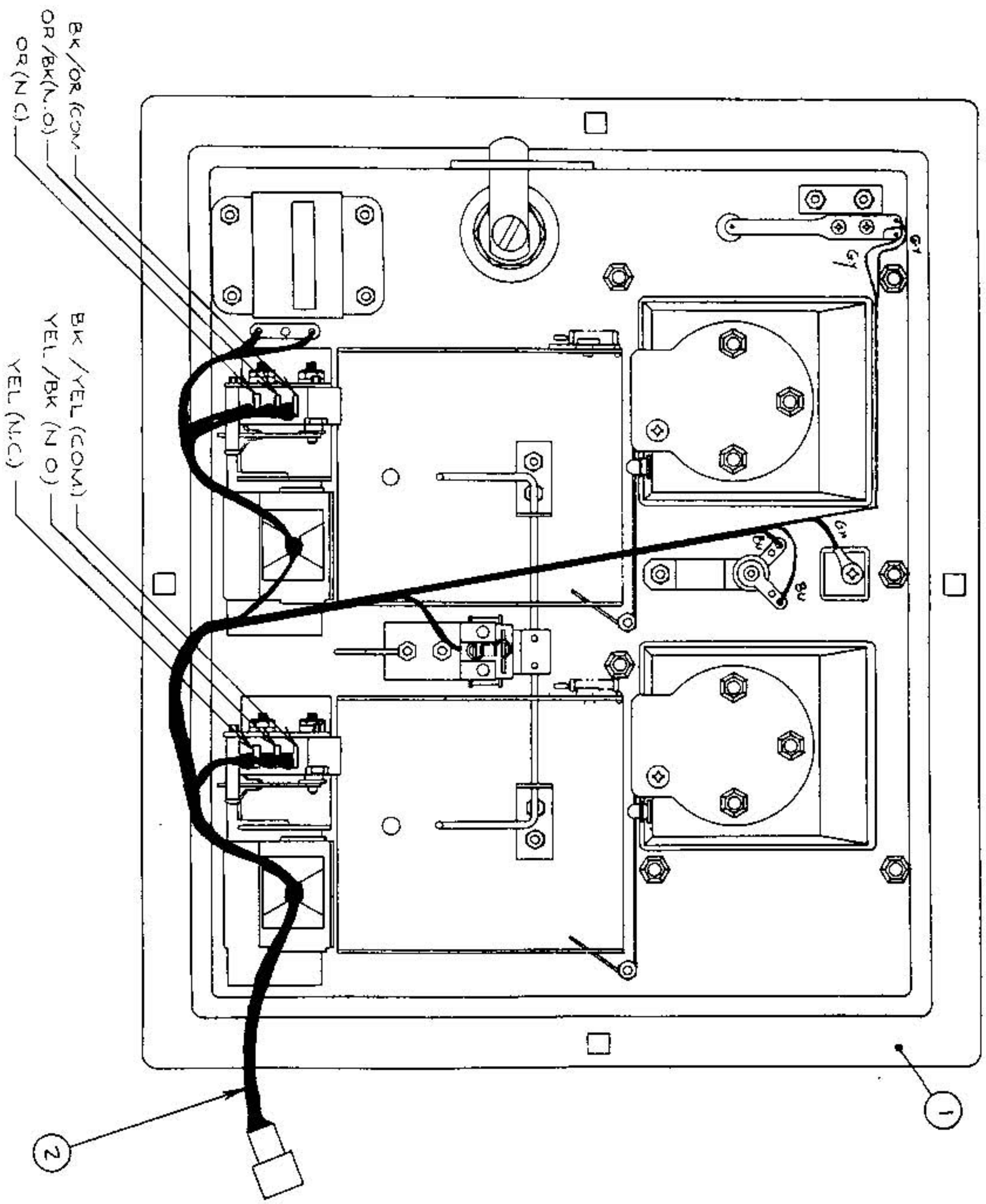

Figure 5-4 Coin Door Final Assembly

Figure 5-4 Coin Door Final Assembly

Item	Part Number	Qty.	Description
1	A006794-01	1	Coin Door Assy. for American Quarter Only - See Figure 5-5
	A006794-02	Ref.	Coin Door Assy. for Belgian 5 Francs Only - See Figure 5-5
	A006794-03	Ref.	Coin Door Assy. for German Mark Only - See Figure 5-5
	A006794-04	Ref.	Coin Door Assy. for Swedish Krona Only - See Figure 5-5
	A006794-05	Ref.	Coin Door Assy. for Japanese 100 Yen Only - See Figure 5-5
	A006794-06	Ref.	Coin Door Assy. for English 10 Pence Only - See Figure 5-5
	A006794-07	Ref.	Coin Door Assy. for Australian 20-Cent Piece Only- See Figure 5-5
2	A006921-01	1	Harness Assembly

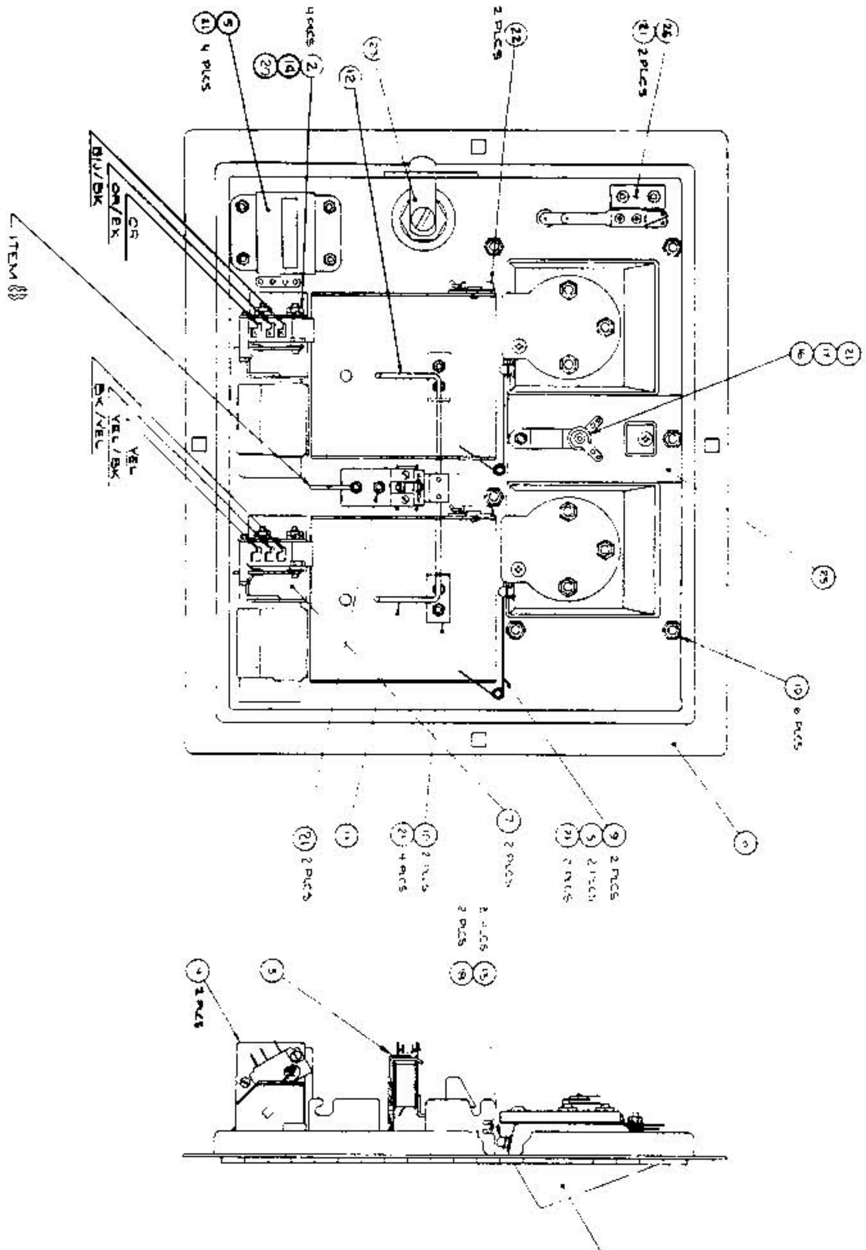

Figure 5-5 Coin Door Assembly

Figure 5-5 Coin Door Assembly

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Item	Part Number	Qty.	Description
1	A007637-01	1	Front Bezel Assy. - Used only on -01 Coin Door Assy.
	A007637-02	Ref.	Front Bezel Assy. - Used only on -02 Coin Door Assy.
	A007637-03	Ref.	Front Bezel Assy. - Used only on -03 Coin Door Assy.
	A007637-04	Ref.	Front Bezel Assy. - Used only on -04 Coin Door Assy.
	A007637-05	Ref.	Front Bezel Assy. - Used only on -05 Coin Door Assy.
	A007637-06	Ref.	Front Bezel Assy. - Used only on -06 Coin Door Assy.
	A007637-07	Ref.	Front Bezel Assy. - Used only on -07 Coin Door Assy.
2	75-9165	4	Nut 6-32
3	A007639-01	1	Coin Lock-Out Assembly
4	A007640-01	2	Coin Switch Assembly
5	A002465-01	1	Coin Counter Assembly
6	004320-01	1	Coin Door Weldment
7	004341-01	2	Secondary Coin Chute
8	004344-01	1	Key Loop
9	004340-01	2	Spring-Return
10	004337-01	2	Bracket, Wire Form
11	004338-01	1	Lock-Out, Wire Form, R.H.
12	004336-01	1	Lock-Out, Wire Form, L.H.
13	004326-01	2	Button, Scavenger
14	75-046	4	Lock Washer, #6
15	006904-01	2	Spacer
16	007359-01	1	Lamp Socket
17	70-11-47	1	Lamp
18	73-3008	2	Retaining "C" Ring, Truarc #5103-25
19	75-9914001	6	Self-Threading Nut, Tinnerman #SR188006
20	75-026S	4	Washer #6
21	75-00S16	13	Kepnut, Style 842, Stl., 6-32
22	008629-01	2	Spring
23	71-2118	1	Lock Assembly, Hudson Lock
24	71-1225CU	2	Coin Mechanism for American Quarter only
	71-125FB	Ref.	Coin Mechanism for Belgian 5 Francs Only
	71-121MG	Ref.	Coin Mechanism for German Mark only
	71-121KS	Ref.	Coin Mechanism for Swedish Krona Only
	71-12100YJ	Ref.	Coin Mechanism for Japanese 100 Yen Only
	71-1210PE	Ref.	Coin Mechanism for English 10 Pence Only
	71-1220CA	Ref.	Coin Mechanism for Australian 20-Cent Piece only
25	007753-01	1	Plate, Anti-Probe
26	A007638-01	1	Switch Assembly - Slam

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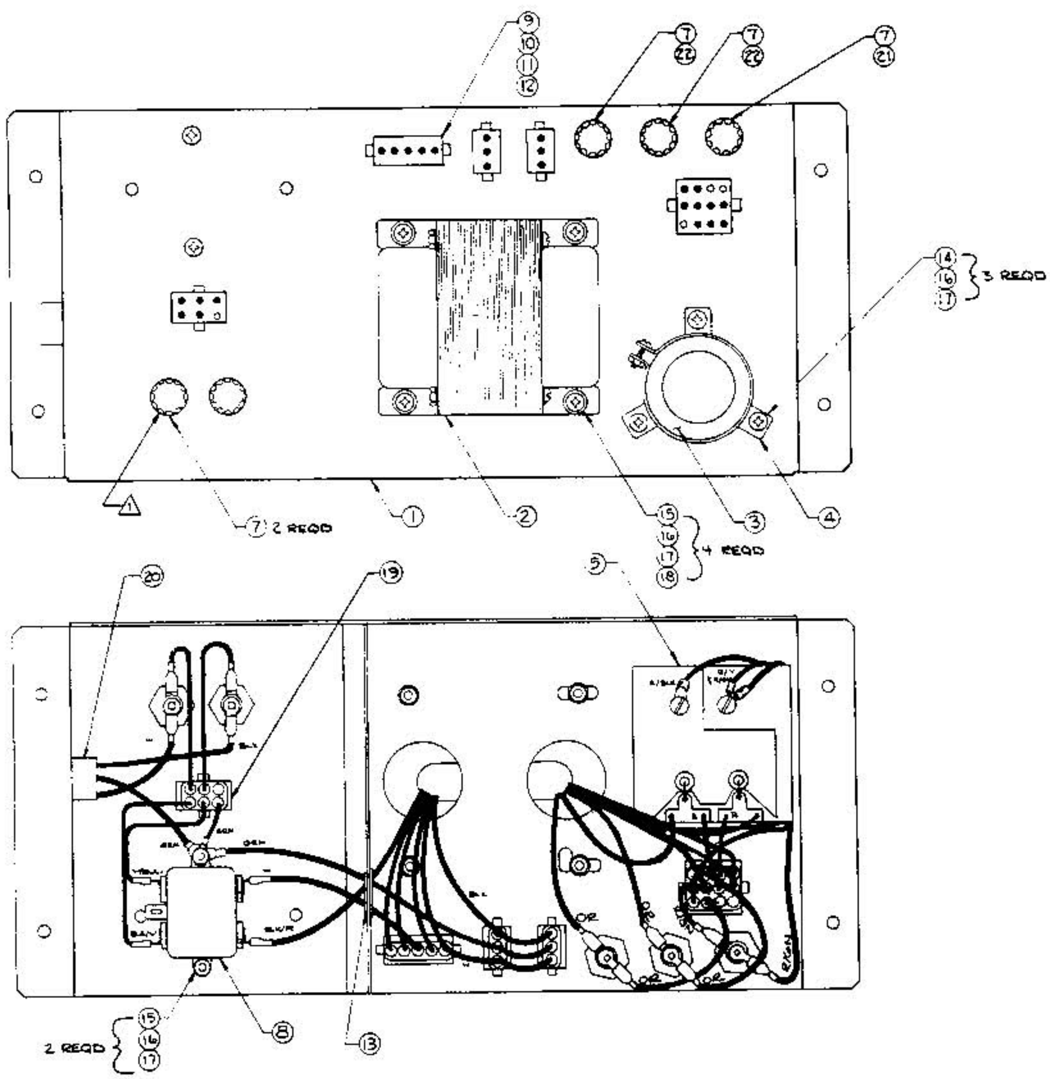

Figure 5-6 Power Supply Assembly

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Figure 5-6 Power Supply Assembly

Item	Part Number	Qty.	Description
1	A009266-01	1	Power Supply Base Weldment Assembly
2	A006886-01	1	Transformer Termination Assembly "Type B"
3	29-053	1	Cap., Sprague Electrolytic 26,000µf @ 15V
4	78-70501SC	1	Brkt., Cap. Mtg. Sprague #4586-48
5	A006555-01	1	P.C. Board Rectifier
6			
7	79-4411004	5	Fuse Holder, Panel Mounting
8	41-2003	1	Filter, Power Line, 5 AMP
9	A006958-01	A/R	Volt Sel Block 95V
10	A006958-02	"	Volt Sel Block 110V
11	A006958-03	"	Volt Sel Block 205V
12	A006958-04	"	Volt Sel Block 220V
13	78-2708	1	Grommet,Plastic
14	72-1808S	3	Screw Pan Hd., #8-32 x ½" Lg.
15	72-1812S	6	Screw Pan Hd., #8-32 x 3/4" Lg.
16	75-038	9	Washer, Lock, External Star #8
17	75-918S	9	Nut Hex #8
18	75-018S	4	Washer Flat #8
19	A007192-01	1	Power Switch Termination
20	A007444-01	1	Power In Harness
21	46-203801	1	Fuse, 8 AMP, 125V, 3 AG Fast Acting
22	46-201251	2	Fuse, 2½ AMP, 125V, Slow Acting

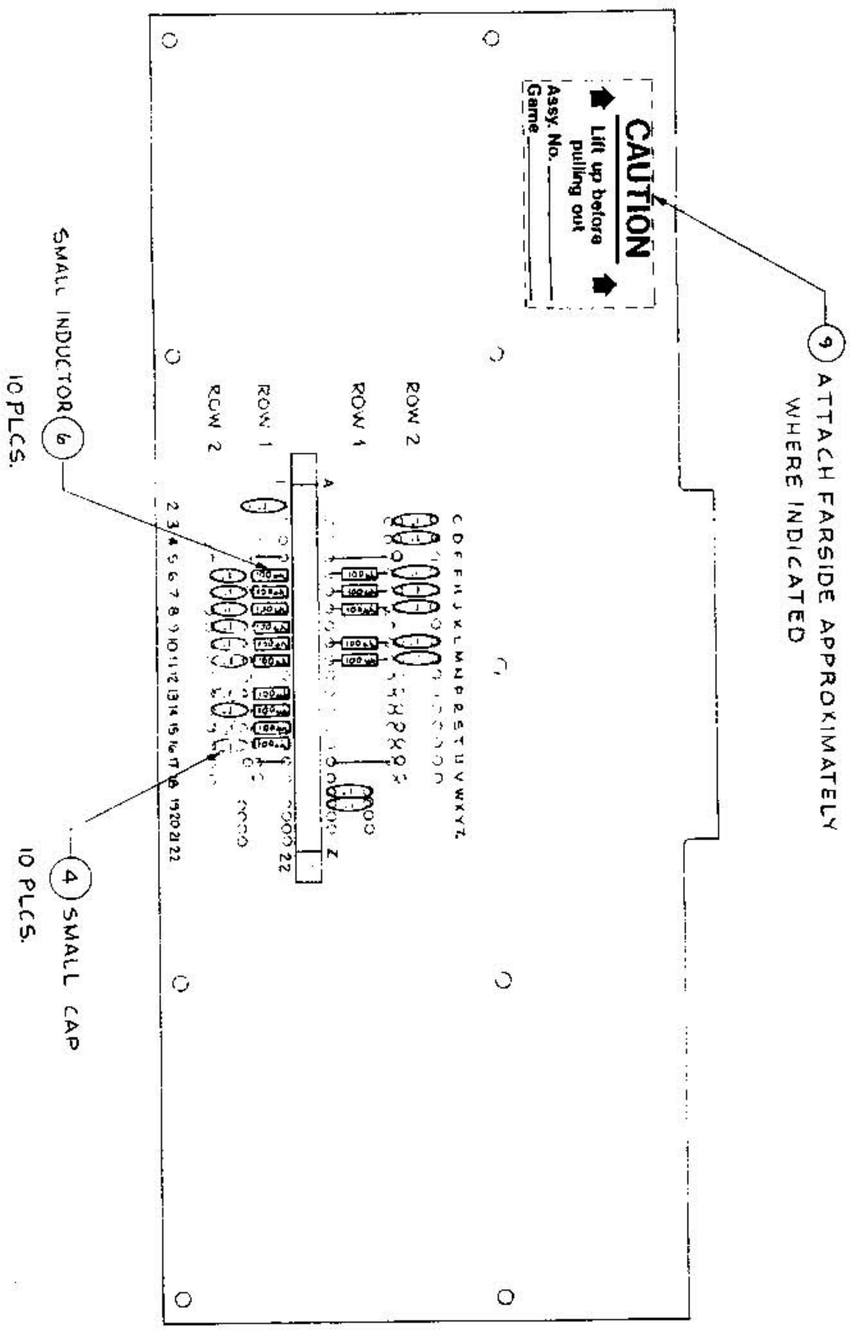

Figure 5-7 RF Shield PCB Assembly

Figure 5-7 RF Shield PCB Assembly

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Item	Part Number	Qty.	Description
1	006549-01	1	P. C. Board
2	79-517222	1	Connector, 44 Pin P. C. Mount
3	27-250104	10	Cap., Cer Disc, .luf, 25V
4	27A-250104	10	Cap., Cer Disc, .luf, 25V (Small) (Bottom Row)
5	41-3003	5	Inductor, 100uh,(Large)
6	41-3004	10	Inductor, 100uh (Small) (Bottom Row)
7	52-003	2	Jumper, .60 Centers
8	52-004	2	Jumper, .30 Centers
9	009468-01	1	Decal, R. F. Shield Label

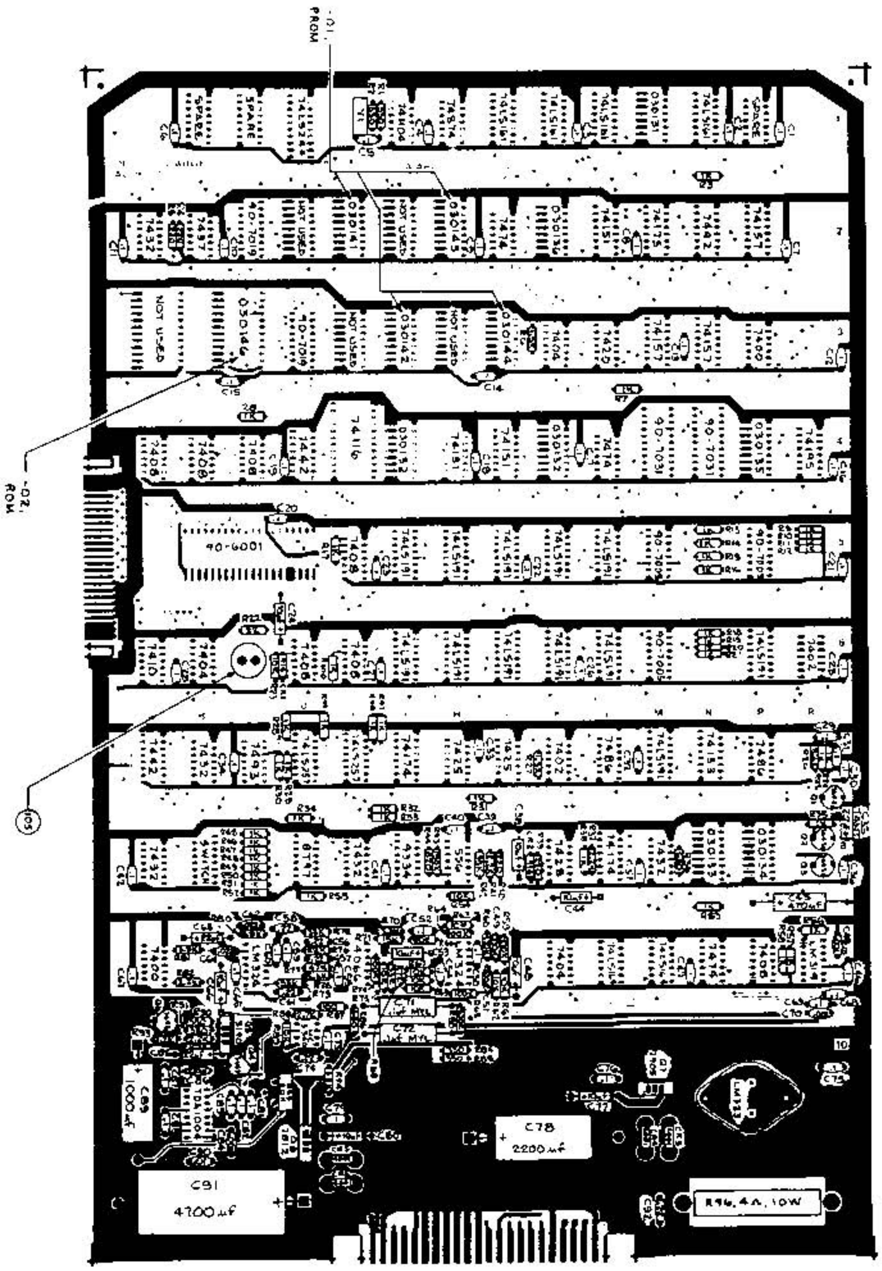

Figure 5-8 Destroyer Game PCB Assembly

Figure 5-8 Destroyer Game PCB Assembly

Item	Part Number	Qty.	Description							
1	009529-01	1	P.C. Board							
2	10-5101	1	Resistor,	Carbon Comp.,	5%,	¼W,		100	Ohm	R87
3	10-5102	44	"	"	"	"	"	1K	"	R3,7-21,24,25, 28-35,38,45-53,55-58,97-100
4	10-5103	9	"	"	"	"	"	10K	"	R23,54,61,62, 67-69,73,89
5	10-5104	4	"	"	"	"	"	100K	"	R64-66,74
6	10-5106	1	"	"	"	"	"	10M	"	R63
7	10-5152	2	"	"	"	"	"	1.5K	"	R6,27
8	10-5153	1	"	"	"	"	"	15K	"	R71
9	10-5154	1	"	"	"	"	"	150K	"	R43
10	10-5220	1	"	"	"	"	"	22	"	R22
11	10-5221	4	"	"	"	"	"	220	"	R4,5,39,40
12	10-5222	5	"	"	"	"	"	2.2K	"	R37,41,82,92, 93
13	10-5223	1	"	"	"	"	"	22K	"	R76
14	10-5272	1	"	"	"	"	"	2.7K	"	R88
15	10-5331	6	"	"	"	"	"	330	"	R1,2,84,85,90, 91
16	10-5332	1	"	"	"	"	"	3.3K	"	R70
17	10-5333	3	"	"	"	"	"	33K	"	R72,75,79
18	10-5334	1	"	"	"	"	"	330K	"	R83
19	10-5392	2	"	"	"	"	"	3.9K	"	R80,81
20	10-5393	1	"	"	"	"	"	39K	"	R42
21	10-5473	1	"	"	"	"	"	47K	"	R77
22	10-5474	2	"	"	"	"	"	470K	"	R59,60

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Figure 5-8 Destroyer Game PCB Assembly

Item	Part Number	Qty.	Description	
23	10-5562	2	Resistor, Carbon Comp., 5%, ¼W, 5.6K Ohm	R26,14
24	10-5681	5	" " " " " 680 "	15a,66
25	10-5682	1	" " " " " 68K "	R96
26	10-5821	1	" " " " " 820 "	R44
27				
28				
29	19-315103	1	Trimpot, 50K Ohm	R95
30	19-8059420	1	Resistor, Wirewound, 10W, 4 Ohm	R96
31				
32				
33				
34	21-101104	2	Capacitor, Mylar, 100V, .1 uf	C71,72
35	24-250106	8	" Elec., 25V, 10 "	C24,38,44, 48,53,64, 77,90
36	24-250226	2	" " " 22 "	C63,85
37	24-250447	1	" " " 470 "	C43
38	24-250108	1	" " " 1000 "	C89
39	24-250228	1	" " " 2200 "	C78
40	24-250478	1	" " " 4700 "	C91
41	27-250102	3	" Cer. Disc, " .001 "	C45,70,96
42	27-250223	2	" " " .022 "	C87,84
43	27-250103	1	" " " .01 "	C90
44	27-250224	6	" " " .22 "	C56-58,61, 74,92
45	27-250104	40	" " " .1 "	C1-21,25-34,36,37, 39-42,46, 47,50,52, 54,55,59, 60,65,67-69,73,75, 76,79,81-83,87,88
46	28-101221	1	" Dipped Mica, 100V, 220 pf	C86
47	28-101331	2	" " " 330 "	C49,51
48	29-010	1	" Tant., Elec., 10V, 2.2 uf	C35
49				
50				

Item	Part Number	Qty.	Description	
86	37-74175	1	IC, 74175	K2
87	37-74LS191	12	" 74LS191	F5,B5,C5,E5, L5,F6,M6,C6, K6,L6,P6,N7
88	37-74195	1	" 74195	B6
89	37-74LS244	1	" 74LS244	D1
90	37-74LS257	2	" 74LS257	D7,E7
91	37-8T97	1	" 8T97	D8
92	37-9334	1	" 9334	F8
93	37-4066	1	" 4066	E9
94	37-556	1	" 556	R8
95	37-MC3340	1	" MC3340	D10
96	37-LM319	1	" LM319	F9
97	37-LM324	2	" LM324	C9,K9
98	37-LM323	1	Regulator, LM323	
99	37-7812	1	" 7812	Q8
100	37-7905	1	" 7905	Q7
101	37-TDA1004	1	Audio Amp TDA1004	R10
102				
103				
104				
105	62-001	1	Switch, Momentary, SPST	
106	66-118P1T	1	" 8-Position DIP, SPST x 8	5R
107	72-1608C	2	Screw, Pan Hd, Phil, 6-32 x ½ lg, CRES	
108	75-016	2	Washer, Flat, #6	
109	75-056	2	Washer, Lock, Int. Star, #6	
110	75-9160	2	Nut, Hex, 6-32, CRES	
111				
112				
113				
114	78-06001	1	Heatsink	(for LM323)
115	009470-04	1	"	(for TDA1004)
116	78-13016	AR	Cement	(for TDA1004 Heatsink)
117	78-16005	1	Silpad	(for LM323)
118				
119				
120				

Item	Part Number	Qty.	Description	
51				
52	31-1N914	2	Diode, 1N914	CR1,2
53	31-1N4001	4	" 1N4001	CR3-6
54				
55				
56				
57	33-2N3644	1	Transistor, 2N3644	Q1
58	34-2N3643	4	" 2N3643	Q2-4,6
59	34-2N5190	1	" 2N5190	Q5
60				
61				
62				
63	37-7400	2	IC, 7400	F7,A9
64	37-7402	2	" 7402	K6,K7
65	37-7404	3	" 7404	J3,B6,K9
66	37-74H04	1	" 74H04	F3
67	37-7408	7	" 7408	A6,B6,C6,E5, D6,E6,P9
68	37-7410	1	" 7410	A8
69	37-7420	1	" 7420	L3
70	37-7425	2	" 7425	H7,J7
71	37-7428	1	" 7428	K8
72	37-7432	5	" 7432	A2,B3,A8,B8, M8
73	37-7437	1	" 7437	42
74	37-7442	3	" 7442	N2,26,A7
75	37-7474	3	" 7474	J2,L4,M9
76	37-74S74	1	" 74S74	H1
77	37-7486	2	" 7486	L3,F3
78	37-7493	1	" 7493	C3
79	37-74116	1	" 74116	E6
80	37-74151	3	" 74151	L2,M4,J4
81	37-74153	1	" 74153	R7
82	37-74157	3	" 74157	P2,K3,M3
83	37-74LS161	4	" 74LS161	J1,K1,L1,M3
84	37-74LS164	2	" 74LS164	L9,M9
85	37-74174	2	" 74174	F7,L8

Item	Part Number	Qty.	Description	
121	79-42040	1	Socket, 40-Pin, Med. Insertion	
122				
123				
124				
125	90-102	1	Crystal, 12.096 MHz	Y1
126				
127				
128				
129	90-6001	1	Microprocessor, MC6800L	B/C5
130	90-7009	3	RAM, 82S25	N5,P5,N6
131	90-7019	2	" 2111A-4	C2,D3
132	90-7031	2	" 2101A-4	N6,M6
133				
134				
135				
136	030131-01	1	Depth Charge Sync PROM	H5
137	030132-01	2	" " Minor Objects	F4,K4
138	030133-01	1	" " Major Objects 1	M4
139	030134-01	1	" " Major Objects 2	P4
140	030135-01	1	" " Alphanumerics	P6
141	030136-01	1	" " Waves	D3
142				
143				
144				
145	030141-01	1	Depth Charge PROM 7800 L0	E2
146	030142-01	1	" " PROM 7800 H1	F3
147	030143-01	1	" " PROM 7C00 L0	H2
148	030144-01	1	" " PROM 7C00 H1	J3
149				

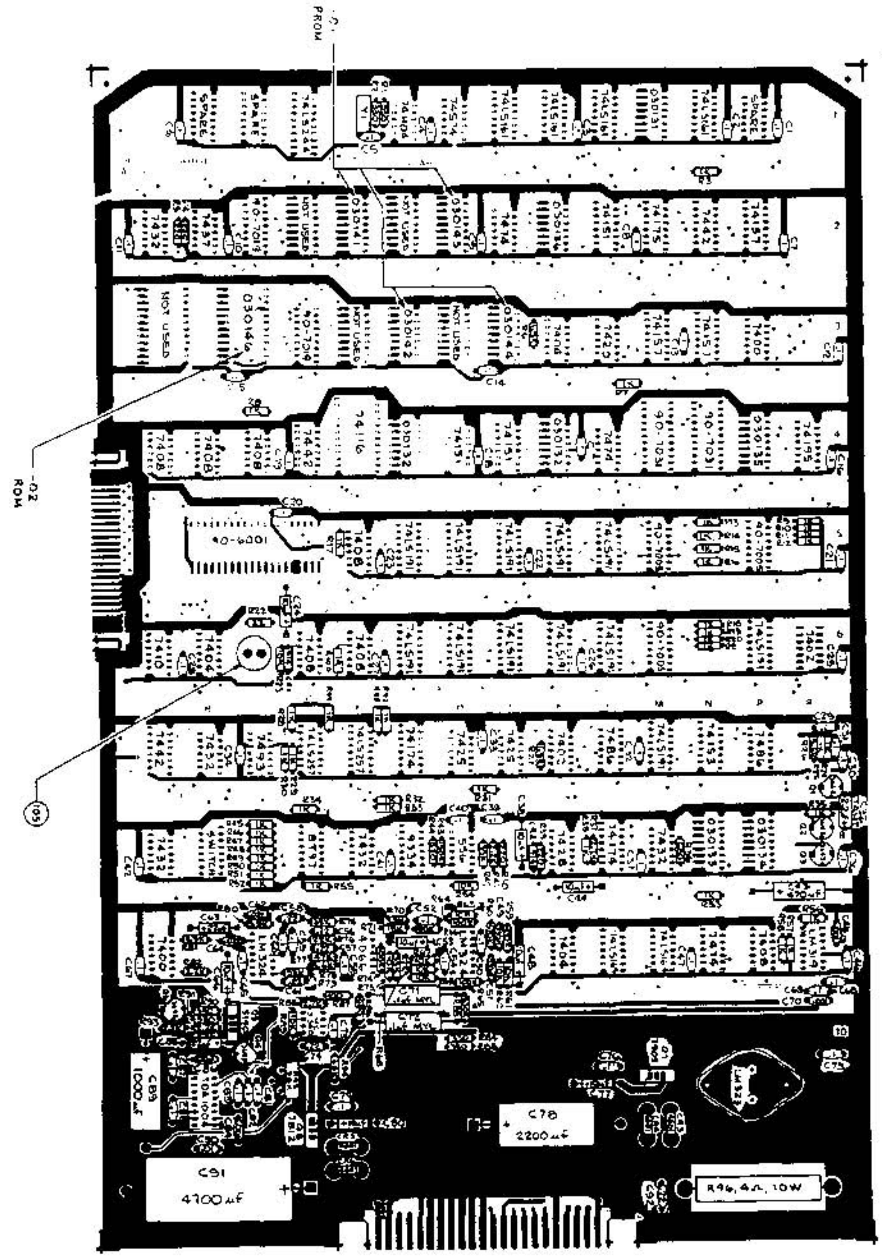

Figure 5-8 Destroyer Game PCB Assembly

ATARI®

Figure 5-8 Destroyer Game PCB Assembly

Item	Part Number	Qty.	Description							
1	009529-01	1	P.C. Board							
2	10-5101	1	Resistor,	Carbon	Comp.,	5%,	¼W,	100	Ohm	R87
3	10-5102	44	"	"	"	"	"	1K	"	R3,7-21,24,25 28-35,38,45-53,55-58,97-100
4	10-5103	9	"	"	"	"	"	10K	"	R23,54,61,62, 67-69,73,89
5	10-5104	4	"	"	"	"	"	100K	"	R64-66,74
6	10-5106	1	"	"	"	"	"	10M	"	R63
7	10-5152	2	"	"	"	"	"	1.5K	"	R6,27
8	10-5153	1	"	"	"	"	"	15K	"	R71
9	10-5154	1	"	"	"	"	"	150K	"	R43
10	10-5220	1	"	"	"	"	"	22	"	R22
11	10-5221	4	"	"	"	"	"	220	"	R4,5,39,40
12	10-5222	5	"	"	"	"	"	2.2K	"	R37,41,82,92, 93
13	10-5223	1	"	"	"	"	"	22K	"	R76
14	10-5272	1	"	"	"	"	"	2.7K	"	R88
15	10-5331	6	"	"	"	"	"	330	"	R1,2,84,85,90 91
16	10-5332	1	"	"	"	"	"	3.3K	"	R70
17	10-5333	3	"	"	"	"	"	33K	"	R72,75,79
18	10-5334	1	"	"	"	"	"	330K	"	R83
19	10-5392	2	"	"	"	"	"	3.9K	"	R80,81
20	10-5393	1	"	"	"	"	"	39K	"	R42
21	10-5473	1	"	"	"	"	"	47K	"	R77
22	10-5474	2	"	"	"	"	"	470K	"	R59,60

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Figure 5-8 Destroyer Game PCB Assembly

Item	Part Number	Qty.	Description	
23	10-5562	2	Resistor, Carbon Comp., 5%, ¼W, 5.6K Ohm	R26,78
24	10-5561	3	" " " " " 560 "	R16,84
25	10-5683	1	" " " " " 4.7K "	R94
26	[illegible]	1	" " " " " [illegible] "	[illegible]
27				
28				
29	19-315503	1	Trimpot, 50K Ohm	R95
30	19-805W4P0	1	Resistor, Wirewound, 5W, 4 Ohm	R96
31				
32				
33				
34	21-101104	2	Capacitor, Mylar, 100V, .1 uf	C71,72
35	24-250106	8	" Elec., 25V, 10 "	C24,38,44,48,53,64,77,80
36	24-250226	2	" " " 22 "	C63,85
37	24-250477	1	" " " 470 "	C43
38	24-250108	1	" " " 1000 "	C89
39	24-250228	1	" " " 2200 "	C78
40	24-250478	1	" " " 4700 "	C91
41	27-250102	3	" Cer. Disc. " .001 "	C45,70,86
42	27-250223	2	" " " .022 "	C62,44
43	27-250103	1	" " " .01 "	C90
44	27-250224	6	" " " .22 "	C56-59,61,76,92
45	27-250104	50	" " " .1 "	C1-23,25-34,36,37,39-42,46,47,50,52,54,55,59,60,65,67-69,73,75,76,79,81-83,87,88
46	28-101221	1	" Dipped Mica, 100V, 220 pf	C84
47	28-101331	2	" " " 330 "	C49,51
48	29-010	1	" Tant., Elec., 10V, 2.2 uf	C35
49				
50				

Item	Part Number	Qty.	Description	
51				
52	31-1N914	2	Diode, 1N914	CR1,2
53	31-1N4001	4	" 1N4001	CR3-6
54				
55				
56				
57	33-2N3644	1	Transistor, 2N3644	Q1
58	34-2N3643	4	" 2N3643	Q2-4,6
59	34-2N5190	1	" 2N5190	Q5
60				
61				
62				
63	37-7400	2	IC, 7400	P3,K9
64	37-7402	2	" 7402	E6,K7
65	37-7404	3	" 7404	K3,M4,K9
66	37-74S04	1	" 74S04	F1
67	37-7408	7	" 7408	A4,B4,C4,E5,D6,E6,F9
68	37-7410	1	" 7410	A5
69	37-7420	1	" 7420	L3
70	37-7425	2	" 7425	H7,J7
71	37-7426	1	" 7426	K8
72	37-7432	5	" 7432	A2,B7,A8,E8,M8
73	37-7437	1	" 7437	B2
74	37-7442	3	" 7442	M2,D4,A7
75	37-7474	3	" 7474	J2,L4,M9
76	37-74S74	1	" 74S74	N2
77	37-7486	2	" 7486	L7,P7
78	37-7493	1	" 7493	C7
79	37-74116	1	" 74116	E4
80	37-74151	3	" 74151	L2,K4,J4
81	37-74153	1	" 74153	H7
82	37-74157	3	" 74157	P2,N3,H3
83	37-74LS161	4	" 74LS161	J1,K1,L1,M1
84	37-74LS164	2	" 74LS164	L9,M8
85	37-74174	2	" 74174	F7,L8

Item	Part Number	Qty.	Description	
86	37-74175	1	IC, 74175	H2
87	37-74LS191	12	" 74LS191	Z5,H5,J5,K5,L5,F6,H6,J6,K6,L6,P6,M7
88	37-74195	1	" 74195	E6
89	37-74LS244	1	" 74LS244	D1
90	37-74LS257	2	" 74LS257	D7,E7
91	37-8T97	1	" 8T97	J8
92	37-9334	1	" 9334	F9
93	37-4066	1	" 4066	E9
94	37-556	1	" 556	H9
95	37-MC3340	1	" MC3340	P10
96	37-LM319	1	" LM319	A8
97	37-LM324	2	" LM324	C9,D9
98	37-LM323	1	Regulator, LM323	
99	37-7812	1	" 7812	J8
100	37-7905	1	" 7905	Q7
101	37-TDA1004	1	Audio Amp TDA1004	R10
102				
103				
104				
105	62-001	1	Switch, Momentary, SPST	
106	66-118P5T	1	" 8-Position DIP, SPST x 8	M8
107	72-1608C	2	Screw, Tap Sw, Phil, 6-32 x ½ Lg, Cres	
108	75-016	2	Washer, Flat, #6	
109	75-056	2	Washer, Lock, Int. Star, #6	
110	75-916C	2	Nut, Hex, 6-32, Cres	
111				
112				
113				
114	78-06001	1	Heatsink	(for LM323)
115	009470-01	1	"	(for TDA1004)
116	78-13016	AR	Cement	(for TDA1004 Heatsink)
117	78-16005	1	Silpad	(for LM323)
118				
119				
120				

Item	Part Number	Qty.	Description	
121	79-42040	1	Socket, 40-Pin, Med. Insertion	
122				
123				
124				
125	90-102	1	Crystal, 12.096 Mhz	Y1
126				
127				
128				
129	90-6001	1	Microprocessor, MC6800L	B/C3
130	90-7005	3	RAM, 82S25	N5,P5,N6
131	90-7019	2	" 2111A-4	C2,D3
132	90-7031	2	" 2101A-4	M4,N4
133				
134				
135				
136	030131-01	1	Depth Charge Sync PROM	H1
137	030132-01	2	" " Minor Objects	J4,K4
138	030133-01	1	" " Major Objects 1	H8
139	030134-01	1	" " Major Objects 2	F8
140	030135-01	1	" " Alphanumerics	E4
141	030136-01	1	" " Waves	K2
142				
143				
144				
145				
146				
147				
148				
149	030146-01	1	Depth Charge ROM	C3

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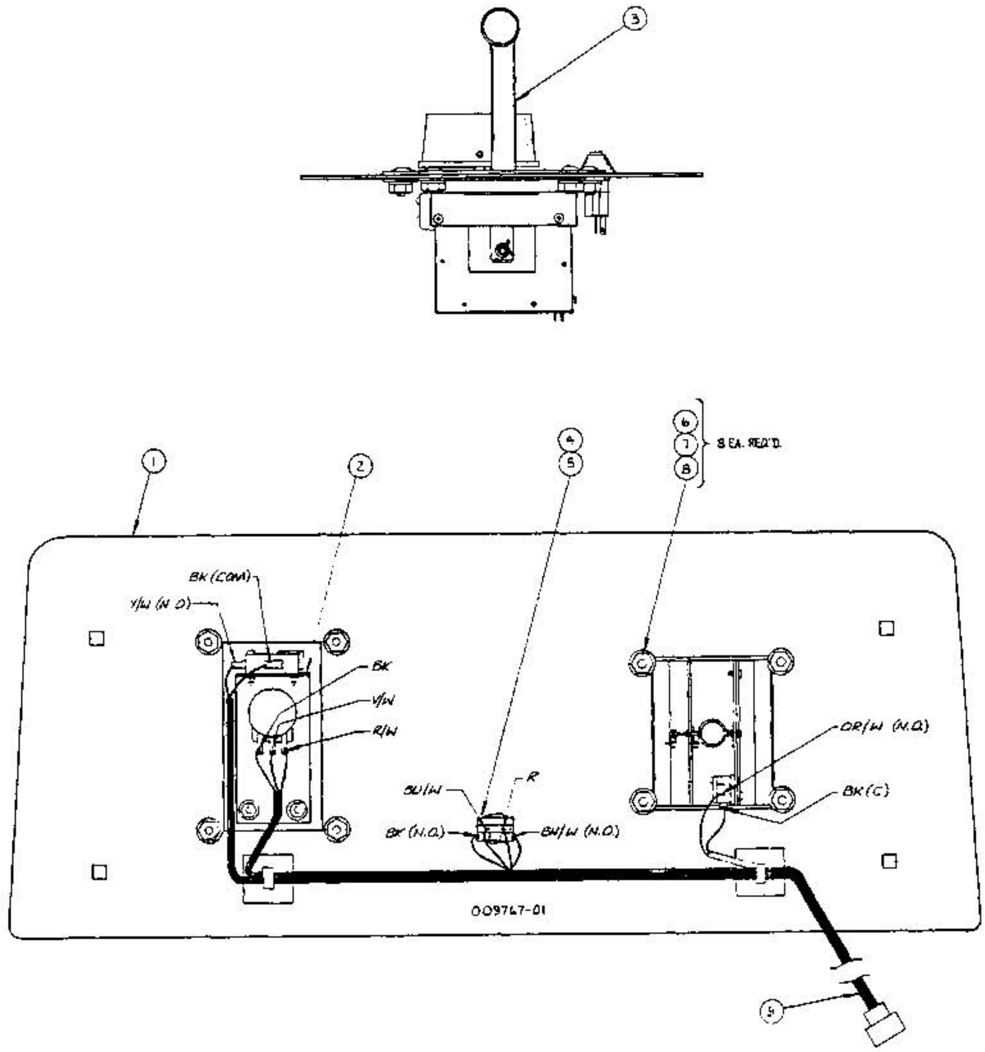

Figure 5-9 Control Panel Assembly

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Figure 5-9 Control Panel Assembly

Item	Part Number	Qty.	Description
1	009767-01	1	Control Panel with Graphics
2	A030118-01	1	Switch Assy - See Figure 5-10
3	A007547-02	1	Shift Assy - See Figure 5-11
4	001856-01	1	Bushing, Alum.
5	62-002	1	Switch, LED, Lighted
6	75-5116B	8	Carriage Bolt, #10-24 x 1.00 Lg (Black)
7	75-010S	8	#10 Washer, Flat
8	75-040	8	#10 Washer, Split-Lock
9	A030115-01	1	Control Panel Harness

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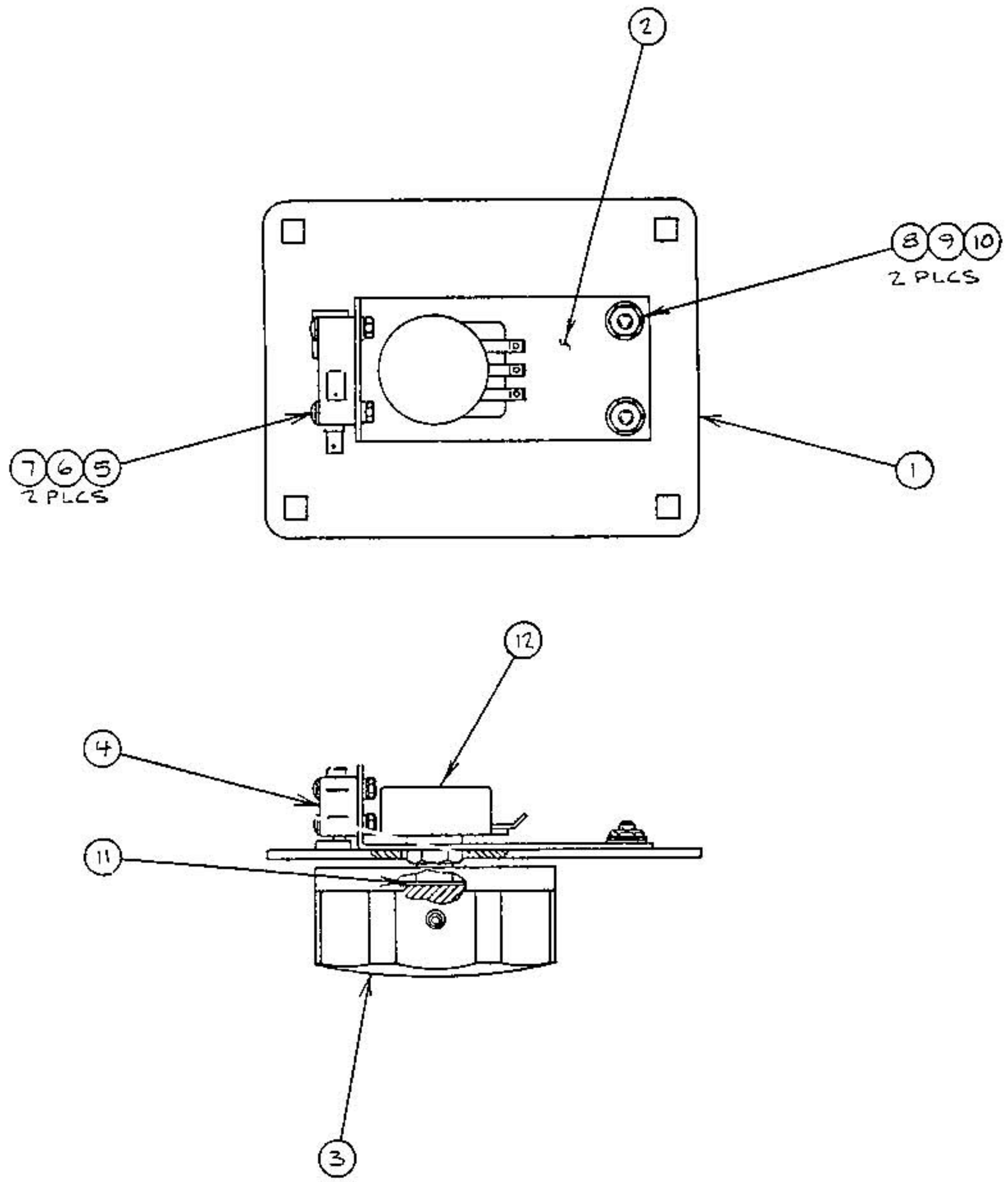

Figure 5-10 Switch Assembly

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Figure 5-10 Switch Assembly

Item	Part Number	Qty.	Description
1	030116-01	1	MTG Plate
2	030117-01	1	Flat Spring
3	73-830	1	Knob
4	*65-081A	1	Micro Switch*
5	72-1410C	2	Machine Screw 4-40 x .62 Lg.
6	75-054	2	Lock Washer Int. Tooth #4
7	75-914S	2	Hex Nut #4-40
8	75-918S	2	Hex Nut #8-32
9	75-028S	2	Flat Washer #8
10	75-048	2	Split Lock Washer #8
11	75-015S	1	Flat Washer #¼ Wide
12	19-9011	1	Pot 5K, Slip Clutch
			* Acceptable Substitutes 65-091A, 65-101A, 65-11A, 65-041C

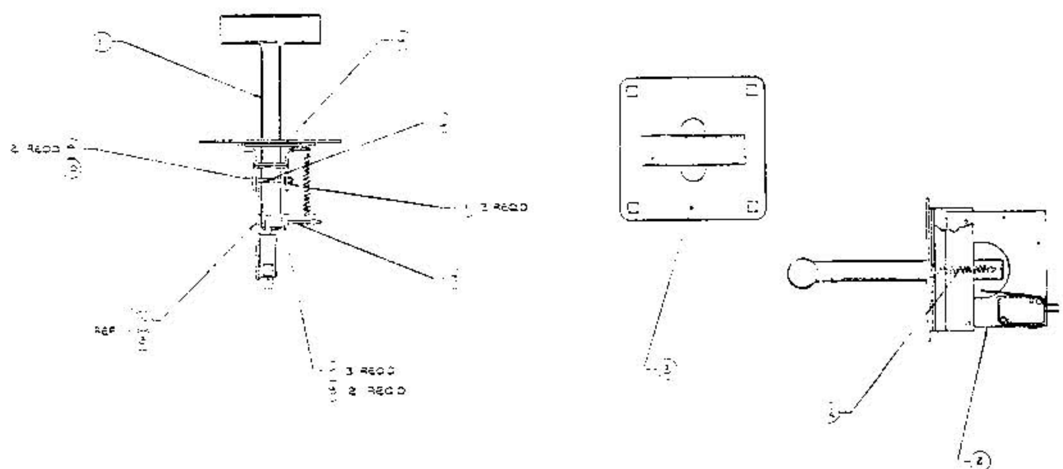

Figure 5-11 Shift Assembly

Figure 5-11 Shift Assembly

Item	Part Number	Qty.	Description
1	A007480-01	1	Shaft Assy
2	A007534-01	1	Switch/Bracket Assy
3	A007188-01	1	Shift Bracket Weldment
4	007396-01	1	Plate Slider
5	007535-01	3	Retainer, Compression
6	007373-01	1	Shaft
7	007372-01	1	Spring Pin
8	75-014	2	Flat Washer #4
9	75-2804S	2	Machine Screw 8-32 x ¼" Lg.
10	75-048	2	Split Lock Washer #8
11	73-3002	2	Retaining Ring #Z3-2
12	78-3001025	1	Spring (LEE #LE-D45D-4)