

WILLIAMS

16-3025-101  
June 1, 1984

T U R K E Y S H O O T ®

SERVICE MANUAL

For service...

Call your authorized  
WILLIAMS distributor

WILLIAMS  
Electronics, Inc.  
3401 N. California Ave.  
Chicago, IL 60618

TURKEY SHOOT  
ROM SUMMARY

ROM	PART NO.	DESCRIPTION			IC NO.	BOARD	ERROR CODE OR INDICATION
Sound ROM	A-5343-10706	2764	PROM,	8Kx8	IC8	CPU	
TURKEY SHOOT 2	A-5343-10707	2732	PROM,	4Kx8	IC9	CPU	feathers
TURKEY SHOOT 3	A-5343-10708	2732	PROM,	4Kx8	IC10	CPU	spkr clicks
TURKEY SHOOT 4	A-5343-10709	2764	PROM,	8Kx8	IC11	CPU	213
TURKEY SHOOT 5	A-5343-10710	2764	PROM,	8Kx8	IC12	CPU	209
TURKEY SHOOT 6	A-5343-10711	2764	PROM,	8Kx8	IC13	CPU	205
TURKEY SHOOT 7	A-5343-10712	2764	PROM,	8Kx8	IC14	CPU	201
TURKEY SHOOT 8	A-5343-10713	2764	PROM,	8Kx8	IC15	CPU	214
TURKEY SHOOT 9	A-5343-10714	2764	PROM,	8Kx8	IC16	CPU	210
TURKEY SHOOT 10	A-5343-10715	2764	PROM,	8Kx8	IC17	CPU	206
TURKEY SHOOT 11	A-5343-10716	2764	PROM,	8Kx8	IC18	CPU	202
TURKEY SHOOT 12	A-5343-10717	2764	PROM,	8Kx8	IC19	CPU	215
TURKEY SHOOT 13	A-5343-10718	2764	PROM,	8Kx8	IC21	CPU	207
TURKEY SHOOT 14	A-5343-10719	2764	PROM,	8Kx8	IC23	CPU	216
TURKEY SHOOT 15	A-5343-10720	2764	PROM,	8Kx8	IC24	CPU	none
TURKEY SHOOT 16	A-5343-10721	2764	PROM,	8Kx8	IC25	CPU	208
TURKEY SHOOT 17	A-5343-10722	2764	PROM,	8Kx8	IC26	CPU	204
Special Chip 2	A-5410-10083	Special Chip			IC29	CPU	--
Special Chip 2	A-5410-10083	Special Chip			IC30	CPU	--
Clock-ROM 1	A-5282-10295	82S123	ROM,	32x8	IC14	VIDEO	no video
TURKEY SHOOT 21	A-5343-10726	2764	PROM,	8Kx8	IC41	VIDEO	vert lines
Horiz-sync ROM 1	A-5282-10294	82S129	ROM,	256x4	IC47	VIDEO	--
TURKEY SHOOT 18	A-5343-10723	2732	ROM,	4Kx8	IC55	VIDEO	gobbles
TURKEY SHOOT 19	A-5343-10724	2764	PROM,	8Kx8	IC57	VIDEO	vert lines
TURKEY SHOOT 20	A-5343-10725	2764	ROM,	8Kx8	IC58	VIDEO	vert lines
Decoder-ROM 5A (Horizontal)	A-5282-10292	6349	ROM,	512x8	IC60	VIDEO	--

CPU-BOARD JUMPERS: W1, W3, W6, W8, W10, W11, W14 and W16. Remove jumper W11 for cocktail games.

**NOTICE**

**TO ORDER REPLACEMENT ROMS** from your authorized WILLIAMS distributor, specify (1) part number shown above, (2) ROM-label color, (3) REV level (number) on the label, and (4) which game the ROM is used in.

Examine your Game

- [ ] INSPECT THE OUTSIDE of the carton or game cabinet for shipping damage.
- [ ] UNLOCK AND OPEN the bottom-rear door. Now check circuitry.
- [ ] ARE CONNECTORS SECURELY ATTACHED? Reconnect any found loose. DON'T FORCE CONNECTORS. They're keyed and only fit one way.
- [ ] ARE PLUG-IN CHIPS FIRMLY SEATED in their sockets?
- [ ] UNWRAP THE POWER CORD coiled inside the cabinet. DON'T PLUG IT IN YET!
- [ ] SCRUTINIZE MAJOR SUBASSEMBLIES, such as the monitor, control panel, transformer chassis and power supply. Make sure they're securely-mounted.
- [ ] UNDO THE CONTROL-PANEL LATCHES. You can reach these two from the coin door by extending your arm upward and to either side. Now check connectors and circuitry as above.

Control Locations

- // THE ON-OFF SWITCH is below the back door.
- // THE POWER-INTERLOCK SWITCH is behind the bottom-right corner of the back door. The interlock switch is a spring-loaded DPDT type that will turn off the game when you remove the panel. For servicing purposes, pull the switch out and the game will power up.
- // THE VOLUME-CONTROL is inside the coin-door and to your right.
- // THREE DIAGNOSTIC SWITCHES are mounted together on a bracket behind the coin door. These switches are used to access the Diagnostic-Mode Tests, the BOOKKEEPING TOTALS screen and the GAME ADJUSTMENTS screen.
- // THE MEMORY-PROTECT INTERLOCK SWITCH is behind the coin door. This switch must be open when you clear BOOKKEEPING TOTALS or make GAME ADJUSTMENTS. It automatically opens when the coin door is open.
- // THE CPU-BOARD RESET SWITCH is on the CPU board near the batteries.
- // THE CASHBOX ADVANCE SWITCH found inside the cashbox door allows bookkeeping information to be audited without permitting it to be zeroed.
- // THE SOUND DIAGNOSTIC SWITCH is on the CPU board near the small heatsink. Refer to Sound Self-Test for information on its use.

Power Turn-On

WARNING

THREE-WIRE PLUG. This game must be plugged into a properly-grounded outlet to prevent shock hazard and to assure proper game operation. DO NOT use a "cheater" plug to defeat the ground pin on the power cord, and DO NOT cut off the ground pin.

WARNING

FCC STICKER. Check the back of your game to see that an FCC sticker was attached to your game at the factory. All games that leave WILLIAMS' plants have been tested and found to comply with FCC Rules. As the sticker is proof of this fact, legal repercussions to the owner and distributor of the game may result if the sticker is missing. If you receive any WILLIAMS game (manufactured after December 1982) that has no FCC sticker, call WILLIAMS for advice or write us a note on your game-registration card. Be sure the card bears your game's serial number.

WHEN THE GAME IS FIRST TURNED ON general illumination should light. A moment later the scanning "rug pattern" indicating RAM/ROM test should appear on the screen.

IN A CORRECTLY-RUNNING GAME tests will be followed by the message "INITIAL CHECKS INDICATE ALL SYSTEMS GO." If failure messages come up on the screen instead, refer to Built-In Test Procedures.

DEMAGNETIZE THE GAME with a television degaussing-coil. Besides the monitor, remember to degauss large steel parts (for example, the back-door hinge). Do this as a daily procedure. Otherwise residual magnetism may cause color impurities that adversely affect your collections.

Game Operation

GAME START

INSERT COINS. The game allocates an adjustable number of credits per coin and displays this number on the CRT. Factory settings are one credit for two quarters. At factory settings, when two credits are displayed, pressing 2-PLAYER START initiates a two-player game.

PLAYER CONTROLS

//SHOOT mischievous turkeys with the laser gun.

//PRESS GOBBLE! Freeze the turkeys and pick them off with the gun!

//PRESS GRENADE! Eliminate several turkeys in one blast!

GAME PLAY

WITH A HAND ON HIS GUN, his GOBBLE and GRENADE buttons at the ready, the player defends his territory from marauding TURKEYS! He's given 100 missions to eliminate all the turkeys.

HE CAN TAKE AIM with his laser gun using the cursor on the screen to home in on his enemies. Or he can launch a GRENADE to blast all turkeys within range. Once each mission he can activate his GOBBLE button to momentarily freeze all the turkeys.

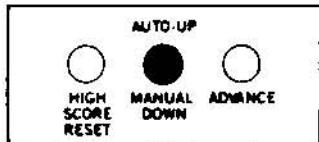
ASTUTE PLAYERS learn that most turkeys can be eliminated by a shot to the body. However the cyborg mechano-turkey persists until they hit him in the head. No turkey will succumb to a shot in the leg!

MISSIONS REQUIRE QUICK REACTIONS to clever ploys such as turkey air-raids, turkeys disguising themselves as businessmen and turkey helicopter-getaways. Every 8th wave earns a rapid-fire bonus where the player has 15 seconds to eliminate as many turkeys as possible. The player can score bonus points by shooting fire hydrants and trashcans as well as by freeing hostages.

THREE FOWLUPS are allowed. These occur whenever a turkey escapes or when an innocent bystander is injured.

#### Bookkeeping Totals

BOOKKEEPING TOTALS SHOW YOU AT A GLANCE if game settings are bringing you a satisfactory return on your investment! Only games by WILLIAMS ELECTRONICS have this feature. Think of it as a unique way to keep your TURKEY SHOOT game the leader of the pack when it comes to earnings...location after location, week in and week out!



#### Diagnostic Button Switches

ENTERING BOOKKEEPING MODE. Inside the coin door is a bracket with three button switches. Set the AUTO-UP/MANUAL-DOWN (center) switch to AUTO-UP. Press the ADVANCE switch to display BOOKKEEPING TOTALS on the screen. Now check those totals. Here's what to look for...

#### BOOKKEEPING TOTALS

LEFT SLOT COINS	432
CENTER SLOT COINS	0
RIGHT SLOT COINS	398
PAID CREDITS	830
EXTRA MISSIONS EARNED	226
TOTAL PLAY TIME [HOUR: MIN]	34:28
TOTAL MEN PLAYED	689
TOTAL SINGLE PLAYER	548
TOTAL TWO PLAYER	141
TOTAL CREDITS PLAYED	830
AVERAGE TIME /GAME [MIN:SEC]	2:00

#### Bookkeeping screen

AVERAGE TIME PER CREDIT: TWO MINUTES. Your most important figure on the BOOKKEEPING TOTALS screen is AVERAGE TIME/GAME. You'll want to pay special attention to this figure every day for this reason: Thorough field and factory research has shown that two-minute games both satisfy players and also keep the quarters flowing.

If games aren't running about two minutes long, then collections probably aren't at their peak. You'll want to tailor your game to your game-playing public. It's easy. But only WILLIAMS games let you do it!

GAME ADJUSTMENTS

EXTRA FOWL EVERY	50000	RECOMMENDED
MISSIONS FOR 1 CREDIT GAME	3	RECOMMENDED
ATTRACT MODE SOUNDS	YES	
PRICING SELECTION	5	1/FIFTY 2/DOLLAR
LEFT SLOT UNITS	1	
CENTER SLOT UNITS	4	
RIGHT SLOT UNITS	1	
UNITS REQUIRED FOR CREDIT	2	
UNITS REQUIRED FOR BONUS CREDIT	0	
MINIMUM UNITS FOR ANY CREDIT	0	
DIFFICULTY OF PLAY	5	RECOMMENDED
GUN RECOIL	YES	
RESTORE FACTORY SETTINGS	NO	
CLEAR BOOKKEEPING TOTALS	NO	
HIGH SCORE TABLE RESET	NO	
AUTO CYCLE	NO	

[PLAYER 1 START] TO MOVE UP - [PLAYER 2 START] TO MOVE DOWN  
[GOBBLE] TO INCREASE VALUE - [GRENADE] TO DECREASE VALUE

PRESS ADVANCE TO EXIT

Adjustments Screen Showing Factory Settings

Exclusive Game Adjustments

1. Inside the coin door is a bracket with three button switches. Set the AUTO-UP/MANUAL-DOWN (center) switch to AUTO-UP.
2. Press the ADVANCE switch twice. The GAME ADJUSTMENTS screen will come up.
3. Use PLAYER 2 START to move down to the desired adjustment.
4. Use PLAYER 1 START to move up.
5. Use GOBBLE (raise value or yes) or GRENADE (reduce value or no) to alter the value of an adjustment.

Now for the multiple-choice section! Choose one or more:

Use GOBBLE or GRENADE to choose the appropriate difficulty level (0 = easiest or extra liberal, 5 = average, 9 = hardest or extra conservative).

//SELECT GAME PRICING with standard or custom settings. See the Pricing Table later in this chapter.

### Pricing Table

Coin-Door Mechanism	Games/Price	Pricing Selection	Left Slot			Center Slot			Right Slot			Req'd For Credit	Units Req'd For Any Credit
			Units	Units	Units	Slot	Slot	Slot	Units	For Bonus Credit	For Credit		
Twin Quarter	•1/25¢, 4/\$1	3		1	4		1		1		1	0	0
Quarter,	1/25¢, 5/\$1	0		1	4		1		1		1	4	0
Dollar,	2/50¢, 4/\$1	0		1	4		1		1		1	0	2
Quarter	2/50¢, 5/\$1	0		1	4		1		1		1	4	2
	•1/50¢, 2/\$1	5		1	4		1		2		0	0	
	1/50¢, 3/\$1, 4/\$1.25	0		3	12		3		4		15	0	
	1/\$1	0		1	4		1		4		0	0	
	1/50¢, 3/\$1, 7/\$2	0		12	48		12		14		96	24	
1DM, 5DM	2/1DM, 12/5DM	0	12	0	2		2		2		0	0	
	•1/1DM, 6/5DM	2		6	0	1		1		1		0	
1 Franc,	•1/2F, 3/5F only	4		1	16		6		2		0	0	
5 Franc													
25-Cent,	•1/25¢, 4/1G	6		1	0	4		1		0		0	
1 Guilder	1/25¢, 5/1G	0		1	0	4		1		4		0	
5 Franc,	•1/5F, 2/10F	7		1	0	2		1		0		0	
10 Franc	•1/10F	8		1	0	2		2		0		0	
1 Franc,	•2/1F, 5/2F	2		6	0	1		1		0		0	
2 Franc													
100 Lire,	•1/200 Lire	8		1	0	2		2		0		0	
200 Lire													
Twin Coin	•1/1 Coin	3		1	4		1		1		0	0	
	•1/2 Coins	5		1	4		1		2		0	0	
	1/4 Coins	0		1	4		1		4		0	0	
	1/2 Coins, 3/4 Coins	1		1	4		1		2		4	0	
	1/3 Coins, 2/5 Coins	0		2	0	2		5		0		0	
	•1/2, 3/5	4		1	16		6		2		0	0	
1-Unit,	1/1, 5/5	0		1	0	5		1		0		0	
5-Unit	1/3, 2/5	0		2	0	10		5		0		0	
Any	•Free Play	9		1	4		1		1		0	0	

#### Game Pricing

PRICING SELECTION allows a shorthand method of setting the pricing functions. If a number from one to nine is entered into the PRICING SELECTION function, a corresponding standard setting (shown in the pricing table above) will be entered into the game. The rest of the pricing functions are automatically set for that standard.

FOR CUSTOM SETTINGS first set PRICING SELECTION to zero. Then set the remaining values according to the Pricing Table.

THE GAMES : PRICE RATIO is equivalent to the ratio X : VC

where:

X = SLOT UNITS

V = COIN VALUE

C = UNITS REQUIRED FOR CREDIT

For example at factory settings with quarter chutes the variables produce 1 : 25x2 or one game for two quarters.

#### Diagnostic-Mode Tests

SET THE AUTO-UP/MANUAL-DOWN SWITCH to the MANUAL-DOWN position and press ADVANCE. The game is now in its Diagnostic Mode and a ROM test is performed. With ROM test results present on the CRT display, set the AUTO-UP/MANUAL-DOWN switch to the AUTO-UP position. Enter subsequent tests by pressing ADVANCE once more for each test. After the last test, Game-Over Mode commences.

AUTO-CYCLE MODE permits continuous ROM, RAM and CMOS RAM tests to detect failures that only appear after numerous checksum comparisons. If an error is detected Auto-Cycle Mode is aborted and a failure message is displayed on the CRT.

1. Open the coin door. It must remain open for AUTO CYCLE.
2. Display GAME ADJUSTMENTS.
3. Move down to AUTO CYCLE.
4. Display YES.
5. Press ADVANCE.
6. To enter Game-Over Mode turn the game off and on.

#### Built-In Test Procedures

##### POWER-UP TESTS

RAM TEST. A rug pattern scans across the screen. Only screen RAMS (dynamic type) are tested. A bad RAM is indicated on the CPU-board LED-indicator by an error code between 100 and 199 (eg., 1-3-1; see the table of Screen-RAM Error Codes below). If a RAM error is indicated, check all three DC power-voltages on the RAM indicated: -5/pin 1, +12/pin 8, +5/pin 9. None of these should have more than a few millivolts of AC on it. Never replace a RAM chip until you prove that these voltages are normal!

Screen-RAM Error Codes

CHIP	98	99	100	101	102	103	104	105
CODE	115	116	117	118	111	112	113	114
CHIP	106	107	108	109	110	111	112	113
CODE	125	126	127	128	121	122	123	124
CHIP	114	115	116	117	118	119	120	121
CODE	135	136	137	138	131	132	133	134

ROM TEST. A bad ROM is indicated on the CPU-board LED-indicator by an error code between 200 and 299 (eg., 2-1-1; see the ROM Summary for codes). An error message may also appear on the CRT. Power down and replace bad chips.

CMOS-DATA TEST. Checksums are compared. If the CMOS RAM fails the test, FACTORY SETTINGS RESTORED appears on the CRT.

DIAGNOSTIC-MODE TESTS

RAM AND ROM TESTS... These tests are repeated, only the ROM test is performed first. Refer to RAM Test and ROM Test above.

CMOS-RAM TEST. A chip error is displayed on the CRT and the LED readout on the CPU board. If the CMOS RAM is bad, the error code 3 will appear on the LED readout.

SOUND, COIL AND LAMP TEST. Sound-lines 1 through 6 are tested. In addition, the grenade and gun lamps, feather and gun coils are checked. One by one, sound lines, lamps or coils are pulsed. When a sound line is pulsed, its number is shown on the CRT. You should hear a separate sound for each sound line. If a sound is missing, its corresponding line is stuck high (that is, open) or stuck low (that is, shorted to ground). If two lines produce the same sound, they're shorted together. Use AUTO-UP to cycle through all the sounds, coils and lamps. With MANUAL-DOWN, you'll continuously test one sound-line, lamp or coil.

SWITCH TEST. The name of the switch is highlighted when that switch is closed. Opto switches (used to determine gun position) are tested in a special way: Watch the graph on the left side and bottom of the switch-test screen as you move the gun. The graph should change color ("move") smoothly. If the graph appears to "jump," adjust the optos for smooth movement. To exit the switch test you must hold ADVANCE down until the next screen appears.

THE CROSSHATCH PATTERN aids the technician in converging the monitor.

THE PURITY SCREENS (solid red, green and blue screens) are intended for monitor adjustments and for checking the color RAMs. If these screens show contaminated colors, degauss the screen and adjust the purity magnets. If colors are missing, one of your color RAMs may be bad. A purity screen with vertical lines through it also signals a color-RAM error. (Please don't confuse the purity screens with the crosshatch pattern or color bars pattern. These test patterns are supposed to have vertical lines!)

THE COLOR BARS are intended for monitor adjustments and for checking the color RAMS. The bars serve as a color and brightness reference when you adjust the color drives and cutoffs, screen and black-level controls. If colors are missing or the wrong colors are displayed, you may have a bad color RAM. From the left side of the CRT, here are the colors you should see: red, green, blue, black, white, yellow, cyan and magenta.

#### Sound Self-Test

1. NO SOUND IN DIAGNOSTIC-MODE TEST: Check the sound-select inputs (pins 2 through 9 of IC 4) on the CPU board for pulsing during the test. Also check for shorts between sound lines.
2. STILL NO SOUND: Turn the volume control all the way up. With the game turned on, momentarily place a powered-up AC soldering-pencil on the center tap of the volume control. DO NOT use a soldering iron of over 40 watts. Cordless models will NOT work here.
  - (A) If you hear a low hum, the power-amplifier chip (TDA2002A), volume control and speaker are okay.
  - (B) If you don't hear a hum, try the test again with the volume control turned halfway up.
3. GARBLED SOUNDS: One at a time, replace microprocessor IC27 and Sound Rom IC8 on the CPU board.
4. THE SOUND DIAGNOSTIC BUTTON on the CPU board isn't used in this game. If you accidentally press this button, game sounds will be disabled until you turn the game off and on again.

#### TURKEY SHOOT Circuitboards & Gun Mechanism

PART NO.	DESCRIPTION
C-10525	opto PC-board
C-8809	heatsink assembly
D-9444 or D-8784	power-supply PC-board
D-9868	video PC-board
D-9886	power-transformer chassis
D-10395	CPU PC-board
D-10413	interface PC-board
D-10289	gun-mechanism
SFL-24-750-DC	gun coil-assembly
SFL-25-750-DC	feather-dispenser coil

Warnings & Notices

WARNING

FOR SAFETY AND RELIABILITY, WILLIAMS does not recommend or authorize any substitute parts or modifications of WILLIAMS equipment.

USE OF NON-WILLIAMS PARTS and modifications of game circuitry may adversely affect game play, or may cause injuries.

SUBSTITUTE PARTS OR EQUIPMENT MODIFICATIONS may void FCC type-acceptance.

SINCE THIS GAME IS PROTECTED by Federal copyright, trademark and patent laws, unauthorized game-conversions may be illegal under Federal law.

THIS "CONVERSION" PRINCIPLE ALSO APPLIES to unauthorized facsimiles of WILLIAMS equipment, logos, designs, publications, assemblies and games (or game features not deemed to be in the public domain), whether manufactured with WILLIAMS components or not.

WARNING

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to correct the interference.

RF-INTERFERENCE NOTICE

CABLE PLACEMENT and ground-strap routing on this game have been designed to keep RF radiation and conduction within levels accepted by FCC regulations.

TO MAINTAIN THESE LEVELS, reposition harnesses and reconnect ground straps to their original placements if they should be disconnected during maintenance.

"TURKEY SHOOT" is a trademark of Williams Electronics, Inc.

TURKEY SHOOT GUN ASS'Y. (D-10302)

ITEM	PART NO.	DESCRIPTION	QTY.
1	03-7890	GUN, MOLDED	1
2	B-10293	GUN SHAFT ASS'Y	1
3	03-7891-24	GUN NOZZLE	1
4	C-10423-3025-1	3025 BTN ASSY GRND	1
5	4106-01099-16B	S.T.S. #6 TORX (T-15) TRX-PH	2
6	4106-01099-18B	S.T.S. #6 TORX (T-15) TRX-PH	5
7	4106-01099-06B	S.T.S. #6 TORX (T-15) TRX-PH	1
8	4106-01099-26B	S.T.S. #6 TORX (T-15) TRX-PH	2
9	03-7786	P/GRIP TRIGGER	1
10	01-7994	T/S TRIG. SPRING	1
11	5647-10163-00	TRIGGER SWITCH	1
12	H-10328	GUN CABLE	1
13	4106-01009-06	SMS #6 x 3/8 P.PH P	4
14	A-10512	SKT. & BULB #1866 ASSY.	1
15	A-10441	COIL BRKT SUB-ASSY	1
16	01-7991	T/S COIL RET BRKT	1
17	02-4211	T/S KICKER PLUNGER	1
18	10-257	SPRING-CREDIT BTN	1
19	SFL-24/750-DC	3025 GUN COIL ASSY	1
20	23-6557-9	NEOPRENE GASKET	2
21	5791-09138-00	9P1625 03-06-2092	1
22	RM-23-01	H.S. TUBING 1/8 POLY	1

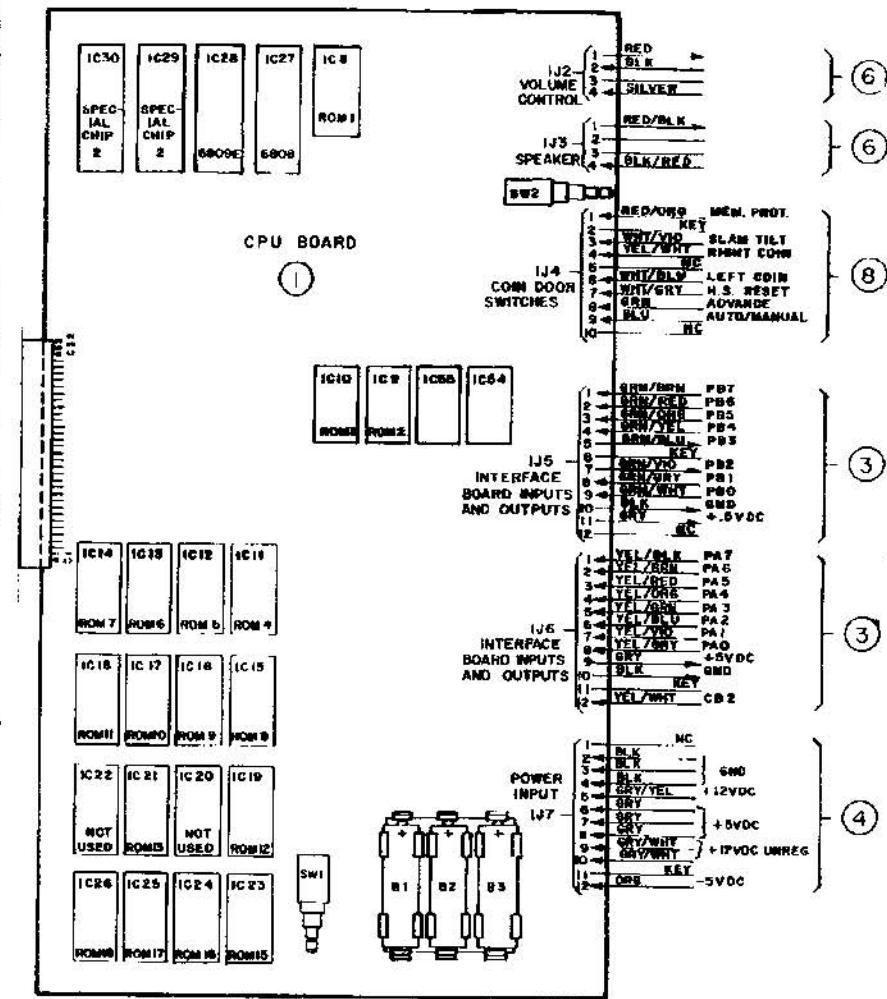
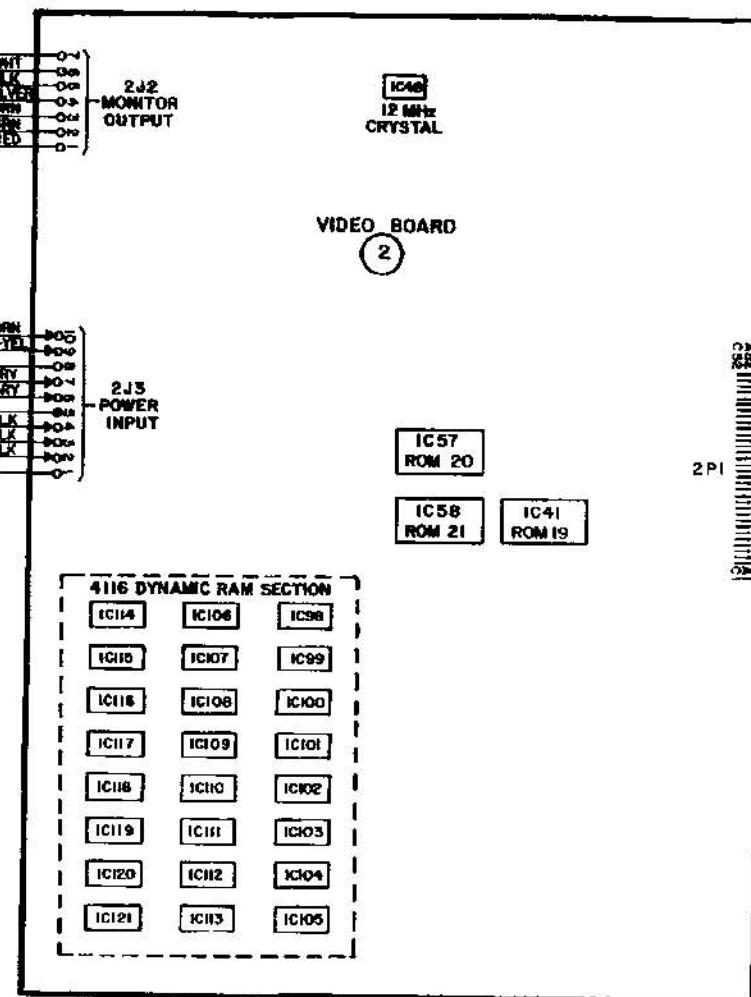
9-PIN MALE CONNECTOR

PIN	COLOR	FUNCTION
1	ORG-BLK	22 SW. GND
2	ORG-BRN	22 TRIGGER SW.
3	ORG-RED	22 GRENADE SW.
4	BLK-RED	22 LAMP COMMON 6V D.C.
5	BLK-RED	22 TRIGGER LAMP ON-OFF
6	BLK-ORG	22 GRENADE LAMP ON-OFF
7	BLK-YEL	18 TRIGGER SOLENOID ON-OFF
8	BLK-BLU	18 SOLENOID COMMON (+12V D.C.)
9	NOT USED	

WHITE HOUSING 5791-09138-00 (REF.). Install item 21 after wires are installed in gun shaft.

FEATHER CHAMBER ASSY. (D-10344)

ITEM	PART NO.	DESCRIPTION	QTY.
1	11-768	FTR DEVICE FRAME	1
2	01-7906	F/D GLASS CLAMP	2
3	4206-01016-08	WS #6 x 1/2 P-RH	4
4	03-7902	FTR DEVICE SCREEN	1
5	4208-01041-10	WS #8 x 1/2 P-FH	6
6	01-7927	FEATHER GUIDE	2
7	01-7979	F/D FLOW DIVIDER	1
8	31-1228-3025-U	3025 F/D COVER	1
9	08-7424	FTR DEVICE GLASS	1
10	20-9435	FEATHERS	80
11	23-6573-4	NEOPRN GSKT 17"	2



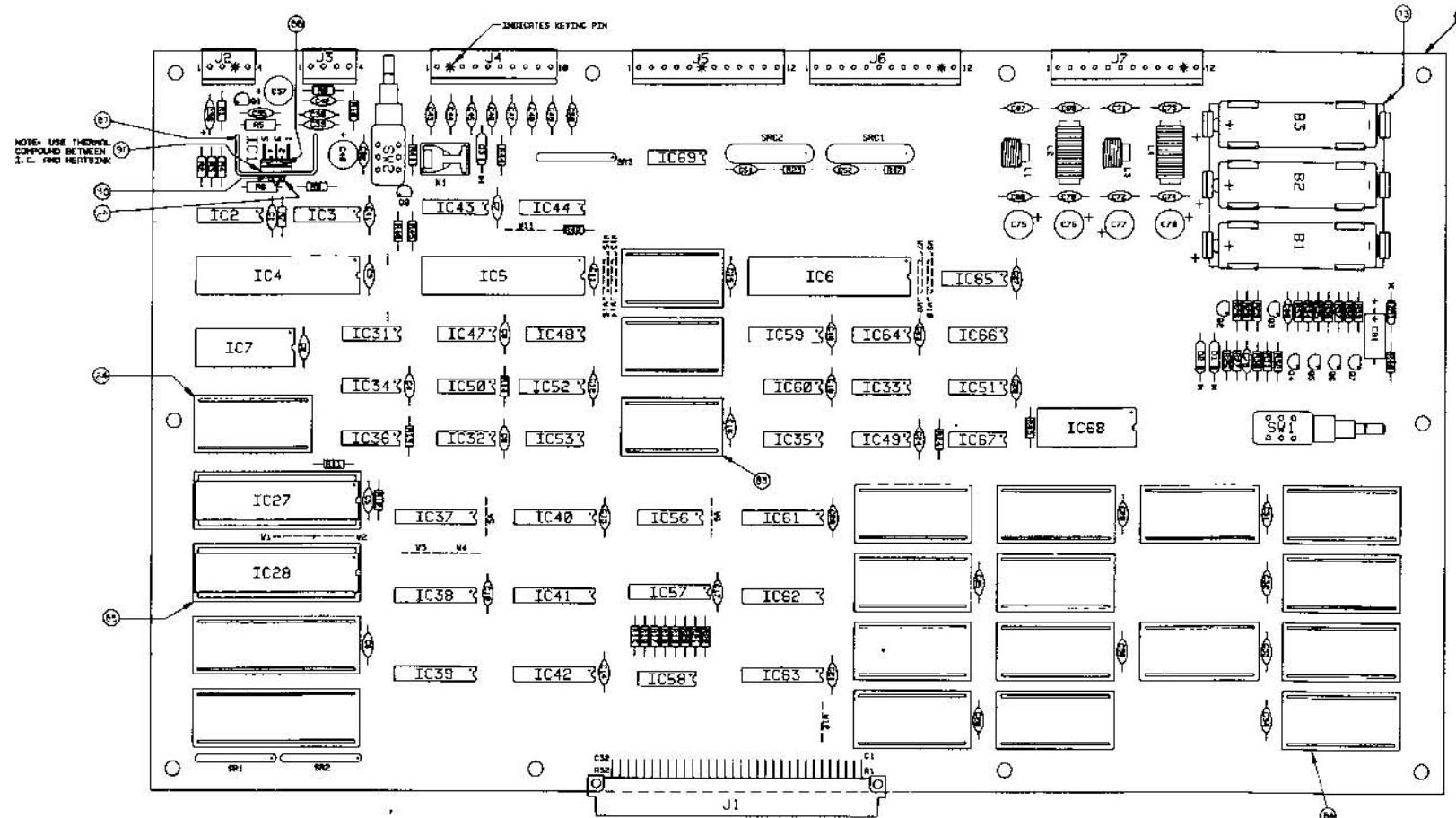
#### CONNECTOR KEY

- |    |                       |
|----|-----------------------|
| 1  | CPU BOARD             |
| 2  | VIDEO BOARD           |
| 3  | INTERFACE BOARD       |
| 4  | POWER SUPPLY          |
| 5  | MONITOR               |
| 6  | CABINET               |
| 7  | CONTROL PANEL         |
| 8  | COIN DOOR             |
| 9  | CASH BOX              |
| 10 | VERTICAL OPTO-BOARD   |
| 11 | HORIZONTAL OPTO-BOARD |
| 12 | GUN                   |

#### Circuitboards & Gun Mechanism

PART NO.	DESCRIPTION
C-10544	opto PC-board subassembly
C-8809	heatsink assembly
D-9444 or D-8784	power-supply PC-board
D-9868	video PC-board
D-9886	power-transformer chassis
D-10395	CPU PC board
D-10413	interface PC-board
D-10289	gun mechanism
SFL-24-750-DC	gun coil-assembly
SFL-25-750-DC	feather-dispenser coil

NAME: **J. BROWN**  
DATE: **7/28/86**  
PAGE: **1**



## TURKEY SHOOT

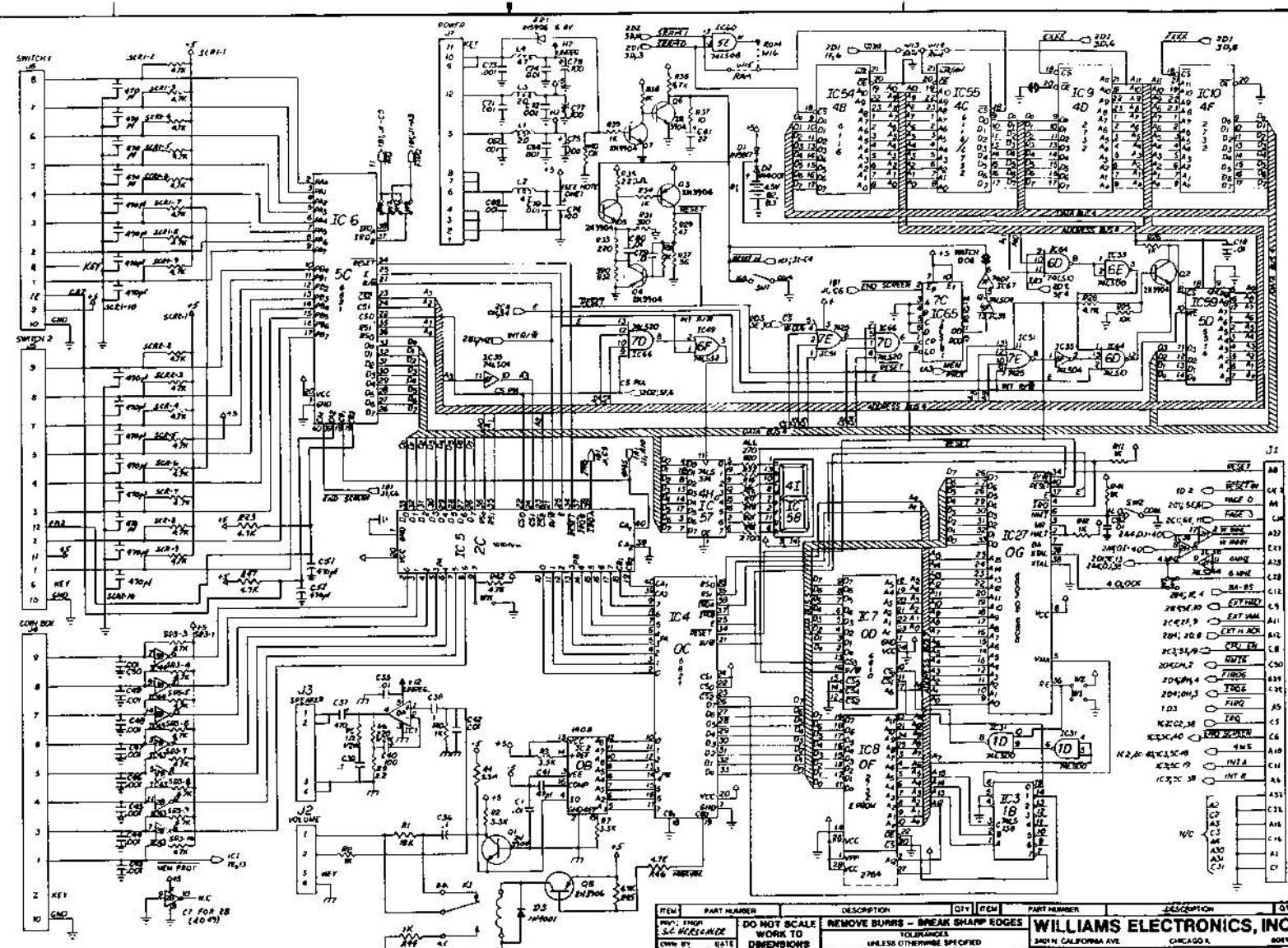
ITEM	PART NUMBER	DESCRIPTION	QTY	ITEM	PART NUMBER	DESCRIPTION	QTY
PROJ. ENGR: <b>J.C. HANSMER</b>		DO NOT SCALE WORK TO DIMENSIONS SHOWN		ITEM		REMOVE BURRS - BREAK SHARP EDGES	
DRAWN BY: <b>J.B.</b>						TOLERANCES UNLESS OTHERWISE SPECIFIED	
DATE: <b>7/28/86</b>						FRACTIONAL: <b>±1/16 INCHES</b>	
CHECKED BY: <b>J.B.</b>						DECIMAL: <b>±0.005 INCHES</b>	
DATE: <b>7/28/86</b>						0.020 MAX	
APPROVED: <b>J.B.</b>						MATERIAL:	
DATE: <b>7/28/86</b>							
ITEM	PART NUMBER	DESCRIPTION	QTY	ITEM	PART NUMBER	DESCRIPTION	QTY
1				WILLIAMS ELECTRONICS, INC.			
				340 N. CALIFORNIA AVE.			
				CHICAGO, IL 60608			
				NAME: <b>CPU FC BOARD SUB-ASSEM.</b>			
				ITEM NO.: <b>D-10394</b>			
				SCALE: <b>1/8</b>			
				SHT: <b>0E2</b>			
				PART NO.: <b>D-10394</b>			

DESCRIPTION OF CHANGE	
NEW PART RELEASE	

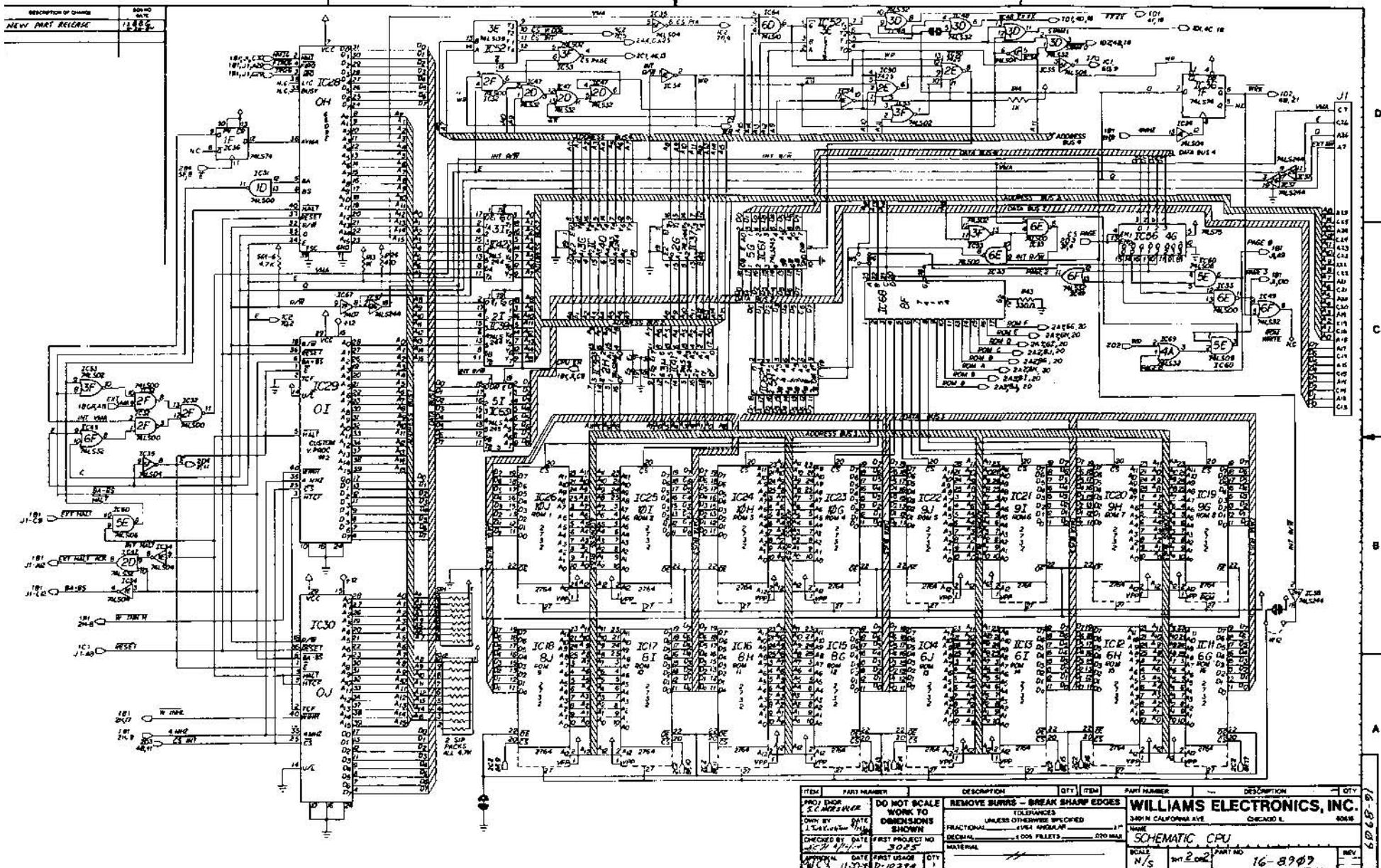
IC CHIPS NO	VCC	GND
IC1	3	3
IC2	13	2
IC3	16	5
IC4, IC5	10, 24, 22	1
IC6	20	1
IC7	20	1
IC8 THRU IC26	20, 22	2
IC 27	3.5	2.7
IC 28	7	3.5
IC 29, IC30	25	15, 5, 24
IC 31 THRU 35, IC 41, IC 42, IC 43	14	7
IC 36, IC 37, IC 38, IC 39, IC 44	1	9.0
IC 45, IC 46	20	10
IC 47, IC 48, IC 49	1	9
IC 50	18	16, 8

REV. S  
#1 C2-C34 ARE BYPASS CAPACITORS  
ON THE SPK LINE.

SMAPE GATES		
IC'S	PIN NUMBERS	TYPES
IC 31	1, 2, 3	74LS00
IC 49	9, 10	4049
IC 67	1, 2, 5, 6, 10, 11, 12, 13	7407
IC 89	4, 5, 6, 8, 9, 10, 11, 12, 13	74LS32



ITEM	PART NUMBER	DESCRIPTION	QTY	PART NUMBER	DESCRIPTION	QTY
PRINTED CIRCUIT BOARD	SCH. HORN	DO NOT SCALE WORK TO DIMENSIONS SHOWN	1		REMOVE BURRS - BREAK SHARP EDGES	1
OWNER BY DATE	12-10-84	UNLESS OTHERWISE SPECIFIED			TOLERANCES	
DESIGNED BY DATE	12-10-84	FRACTIONAL DECIMAL MATERIAL			1/16 INCH ANGULAR	1/16"
CHECKED BY DATE	12-10-84	0.005 FELLETS			0.005 MAX	
APPROVED BY DATE	12-10-84				NAME	WILLIAMS ELECTRONICS, INC.
FIRST ISSUE DATE	12-10-84		1		ADDRESS	300 N. CALIFORNIA AVE. CHICAGO, IL 60619
REV					SCHEMATIC CPU	
					SCALE	N/S
					SHT	1 OF 2
					PART NO	16-8909
					REV	



#### NOTES.

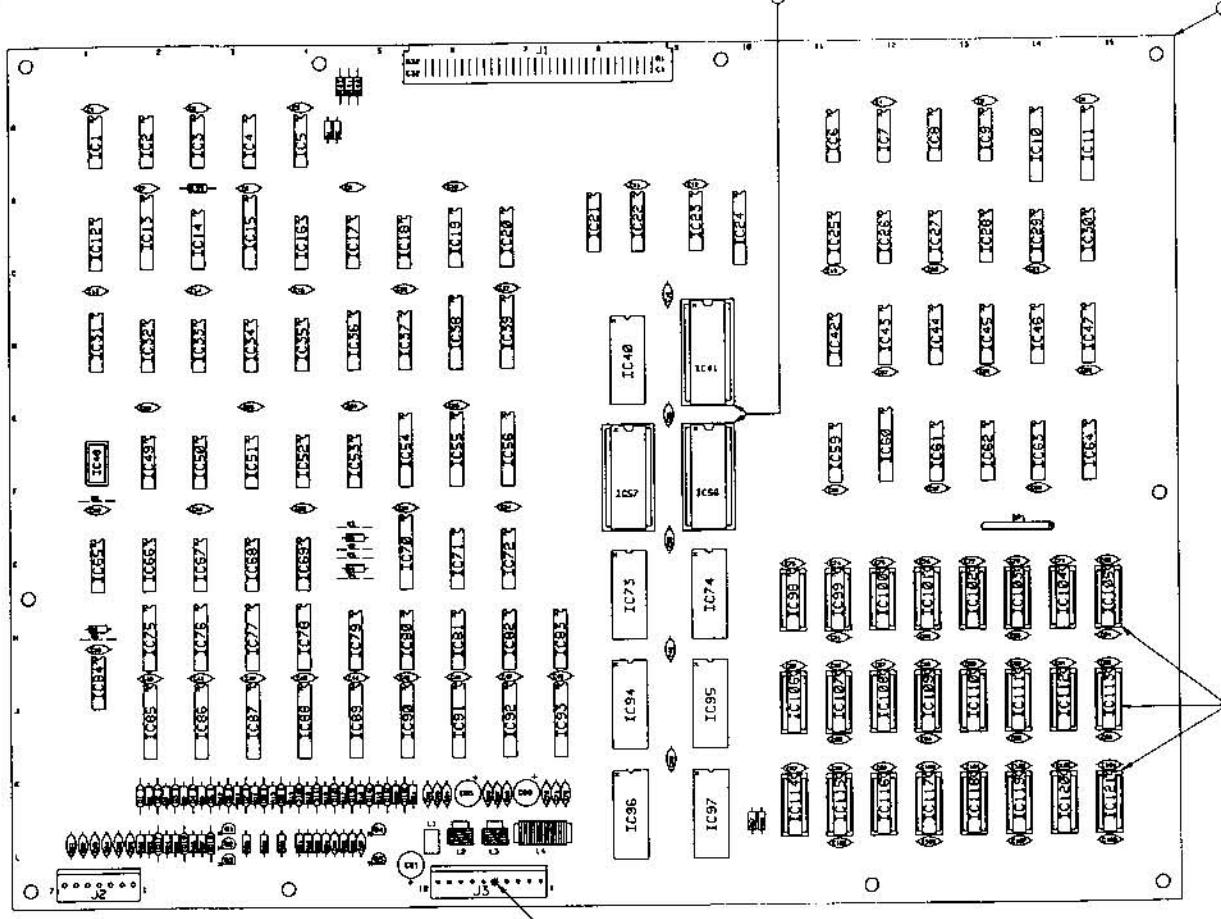


ITEM	PART NO.	PART DESIGNATION	DESCRIPTION	QTY.	ITEM	PART NO.	PART DESIGNATION	DESCRIPTION	QTY.	ITEM	PART NO.	PART DESIGNATION	DESCRIPTION	QTY.
87				57	S168-18263-BB	Q1, Q2, Q3, Q4, Q5	TRANSISTOR- 2N3984 NPN TO-92		5	28	S200-18017-BB	SEE NOTE #7	I.C. 74198, 8 BIT SHIFT REGISTER	6
88				56					27	5200-05739-BB	IC71, IC72, ICBS	I.C. 74LS158, QUAD 2 TO 1 MULTIPLEXER	3	
89				55					28	S200-05741-BB	IC61, IC62, IC63, IC64	I.C. 74155, DUAL 4 TO 1 MULTIPLEXER	4	
90				54	S843-18045-BB	C62, C64, C66, C68, C70, C72	CAPACITOR, AXIAL, 100 PFD, 50V +/-20%		6	4-5282-18293	IC68	I.C. NOR2, DECODER ROM 5B	8	
91				53	S848-18042-BB	C61 C65, C69	CAPACITOR, RADIAL, 100 PFD, 50V +/-10%		3	A-5292-18292	IC69	I.C. NOR2, DECODE ROM 5A	1	
92				52	S843-18044-BB	C68	CAPACITOR, CERAMIC, 40 PFD, 50V +/-20%		1	5200-05740-BB	IC54, IC55, IC87	I.C. 74LS245, DCTR, BUS TRANSCEIVER	3	
93				51	S843-18044-BB	C54, C55 C56, C57	CAPACITOR, CERAMIC, 47 PFD, 50V +/-20%		4	5200-18002-BB	IC49	I.C. K116, 12 MHz OSC 1F	1	
94				50	S843-18055-BB	C51	CAPACITOR, CERAMIC, 47 PFD, 50V +/-20%		3	4-5282-18294	IC47	I.C. NOR2, SYNC ROM	1	
95				49	S843-18055-BB	ES21, C53	CAPACITOR, CERAMIC, 47 PFD, 50V +/-20%		22	18294				
96				48	S843-18098-BB	SEE NOTE #11	CAPACITOR, CERAMIC, .01 PFD, 50V +/-20%		89	5248-18139-BB	IC48	I.C. TC5516P-2 CMOS SRAM 2K X 8 2.2V MS	6	
97				47	S819-05969-BB	SRI	RESISTOR, C.F., 1K OHM, 5% 10 PIN SIP		1	5240-05076-BB	IC49	I.C. 2016 SRAM 2K X 8 2.2V MS	1	
98				46					19	5201-05745-BB	IC50	I.C. 74LS158, DUAL 2 TO 4 DEC.	2	
99				45	S818-05534-BB	V2, V4, V5, V6	RESISTOR, 8 OHM		4	5281-18014-BB	IC51, IC52, IC53	I.C. 74LS244, 4 INPUT NOR	5	
100				44	S818-05541-BB	R36	RESISTOR, C.F., 2.7K OHM 2X 1/4 WATT		1	5201-05735-BB	SEE NOTE #6	I.C. 74LS161, BINARY COUNTER	5	
101	5798-18175-BB	28 PIN I.C. SOCKET		43	S818-18203-BB	R35	RESISTOR, C.F., 2.2K OHM 2X 1/4 WATT		1	5201-05725-BB	IC54, IC52, IC55	I.C. 74LS158, TRIPL 3-INPUT NOR	3	
102	5798-18598-BB	16 PIN I.C. SOCKET		42	18008-18003	R54, R55	RESISTOR, C.F., 300 OHM 5% 1/4 WATT		2	5201-05738-BB	SEE NOTE #5	I.C. 74LS157, QUAD 2 TO 1 MULTIPLEXER	7	
103				41	S818-18177-BB	R23	RESISTOR, C.F., 47 OHM 5% 1/4 WATT		3	5201-05734-BB	IC56, IC57	I.C. 74LS283, 4 BIT ADDER	2	
104				40	S818-05560-BB	R31	RESISTOR, C.F., 270 OHM 5% 1/4 WATT		3	18295	IC14	I.C. CLOCK ROM	1	
105				39	S818-05560-BB	R22	RESISTOR, C.F., 470 OHM 5% 1/4 WATT		3	5281-05667-BB	IC15, IC24	I.C. 74LS244, DUAL BUF	2	
106	5791-05444-BB	J3	18 PIN HEADER 05-65-1181	1	5816-05416-BB	R24, R26	RESISTOR, C.F., 470 OHM 5% 1/4 WATT		3	5281-05667-BB	IC15, IC24	I.C. 74LS574, 8BIT LATCH	11	
107	5791-05437-BB	J2	7 PIN HEADER 05-65-1871	1	5816-16284-BB	RS, R15	RESISTOR, C.F., 1K OHM 5% 1/4 WATT		4	5281-05406-BB	SEE NOTE #4	I.E. 74LS244, 4 INPUT NOR	11	
108	5792-18092-BB	J1	64 PIN R.M. HEADER FEMALE	1	5816-05205-BB	SEE NOTE #10	RESISTOR, C.F., 1K OHM 5% 1/4 WATT		10	5200-05746-BB	IC16, IC81	I.C. 74LS244, OC81, IC83	4	
109				38	18008-05560-BB	R7, R11, R15, R19	RESISTOR, C.F., 3.3K OHM 5% 1/4 WATT		4	5281-05247-BB	IC9, IC16	I.C. 74LS244, DUAL 2-INPUT NOR	2	
110				36	18008-05560-BB	R6, R10	RESISTOR, C.F., 9.2K OHM 5% 1/4 WATT		4	5281-05493-BB	IC6, IC65	I.C. 74LS283, QUAD 2-INPUT NOR	2	
111				35	05219-05560-BB	SEE NOTE #9	RESISTOR, C.F., 1K OHM 5% 1/4 WATT		9	5281-05407-BB	IC6, IC65	I.C. 74LS244, DUAL D/F	6	
112	5551-18082-BB	L4	COIL, RADIAL, 4.7 LH 3A	1	5816-05358-BB	SEE NOTE #9	RESISTOR, C.F., 1K OHM 5% 1/4 WATT		8	5200-05551-BB	IC6, IC65	I.C. 74255, DUAL 4-INPUT V/STROBE NOR	1	
113	5551-18161-BB	L2, L3	COIL, RADIAL, 2.0 LH 3A	2	53	5248-05409-BB	SEE NOTE #6	I.C., 4116 RAM/D 16K X 1, 458 NS	24	5281-05743-BB	IC4, IC7, IC49	I.C. 74LS88, QUAD 2-INPUT AND	3	
114	5551-18025-BB	L1	COIL, RADIAL, 4.7 LH 30 MA	1	32				4	5281-05737-BB	IC5, IC6	I.C. 74LS88, DUAL 2-INPUT EXOR	7	
115				31	5248-05409-BB	SEE NOTE #6	I.C., 2148 ROM/S 16K X 4, 70 NS		5	5281-05746-BB	IC6, IC65, IC67	I.C. 74LS244, DUAL 2-INPUT OR	5	
116				30	5548-18019-BB	SEE NOTE #15	I.C., 2148 ROM/S 1K X 4, 70 NS		8	5281-05215-BB	IC1, IC18, IC69	I.C. 74LS88, HEX INVERTER	3	
117	5878-05919-BB			29	IC75, IC76	SEE NOTE #15	I.C., 2148 ROM/S 16K X 1, 458 NS		4	5281-10333-BB	IC1, IC18, IC69	BORS, P.C. BOARD (REV. 2)	1	

## BILL OF MATERIALS

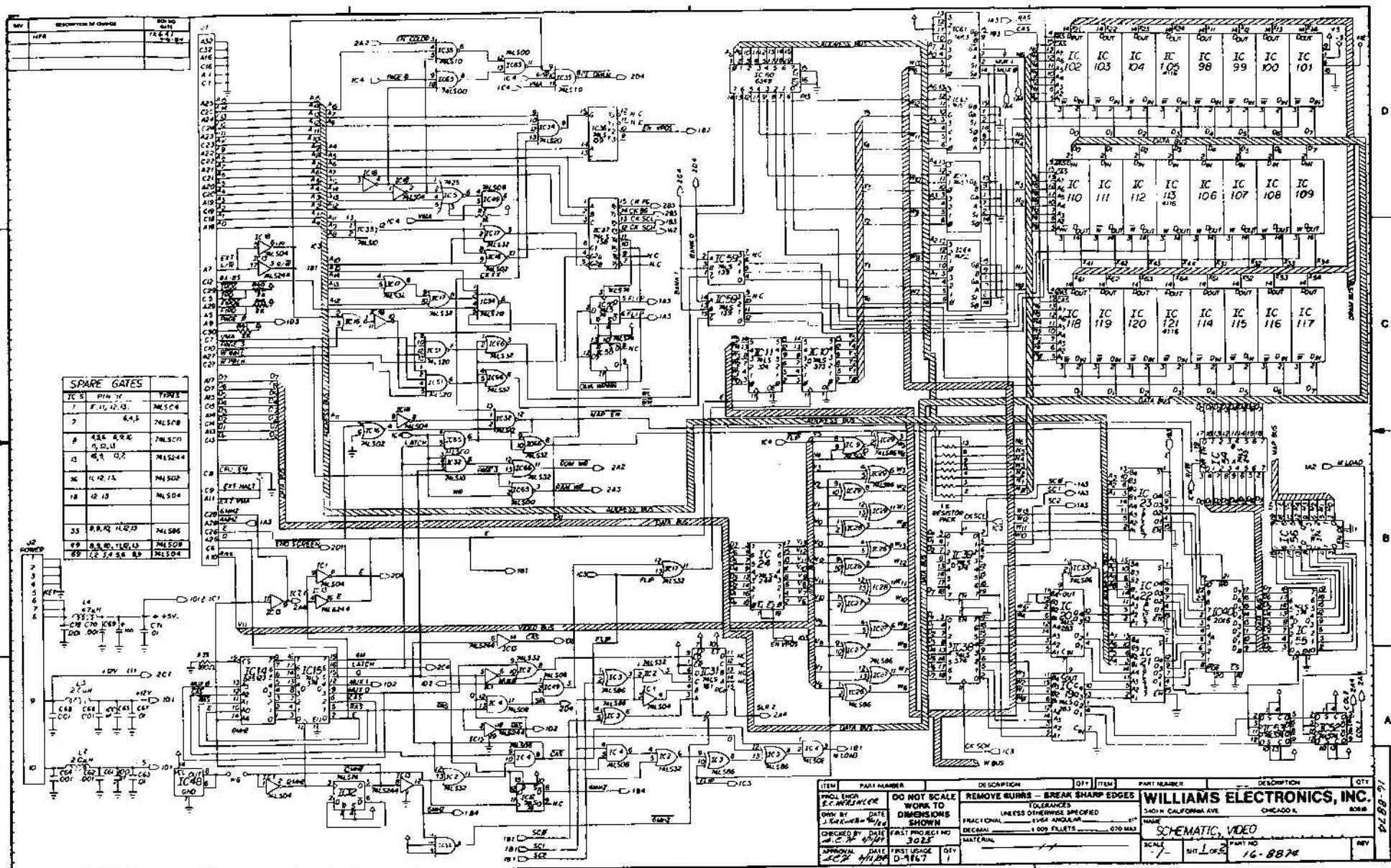
PROJ. CHG.	S. KERSCHLER	DO NOT SCALE	REMOVE BURRS - BREAK SHARP EDGES			WILLIAMS ELECTRONICS, INC.		
OWN BY	DATE	WORK TO	TOLERANCES			3401 N CALIFORNIA AVE. CHICAGO IL 60608		
R. CAY	5/28/83	DIMENSIONS	UNLESS OTHERWISE SPECIFIED			TELE 312-222-1234		
SHOWN:		FRACTIONAL	1/16 INCHES			FAX 312-222-1234		
CHECKED BY		DATE	DECIMAL			E-mail: <a href="mailto:info@williams-electronics.com">info@williams-electronics.com</a>		
L.C.A.		5/28/83	.005 FELTS			WEBSITE: <a href="http://www.williams-electronics.com">www.williams-electronics.com</a>		
APPROVED BY		DATE	MATERIAL			PART NO.		
L.C.A.		5/28/83	NONE			REV.		
INITIALS		INITIALS	QTY	SCALE	SHL	2-D.F.	D-986?	A

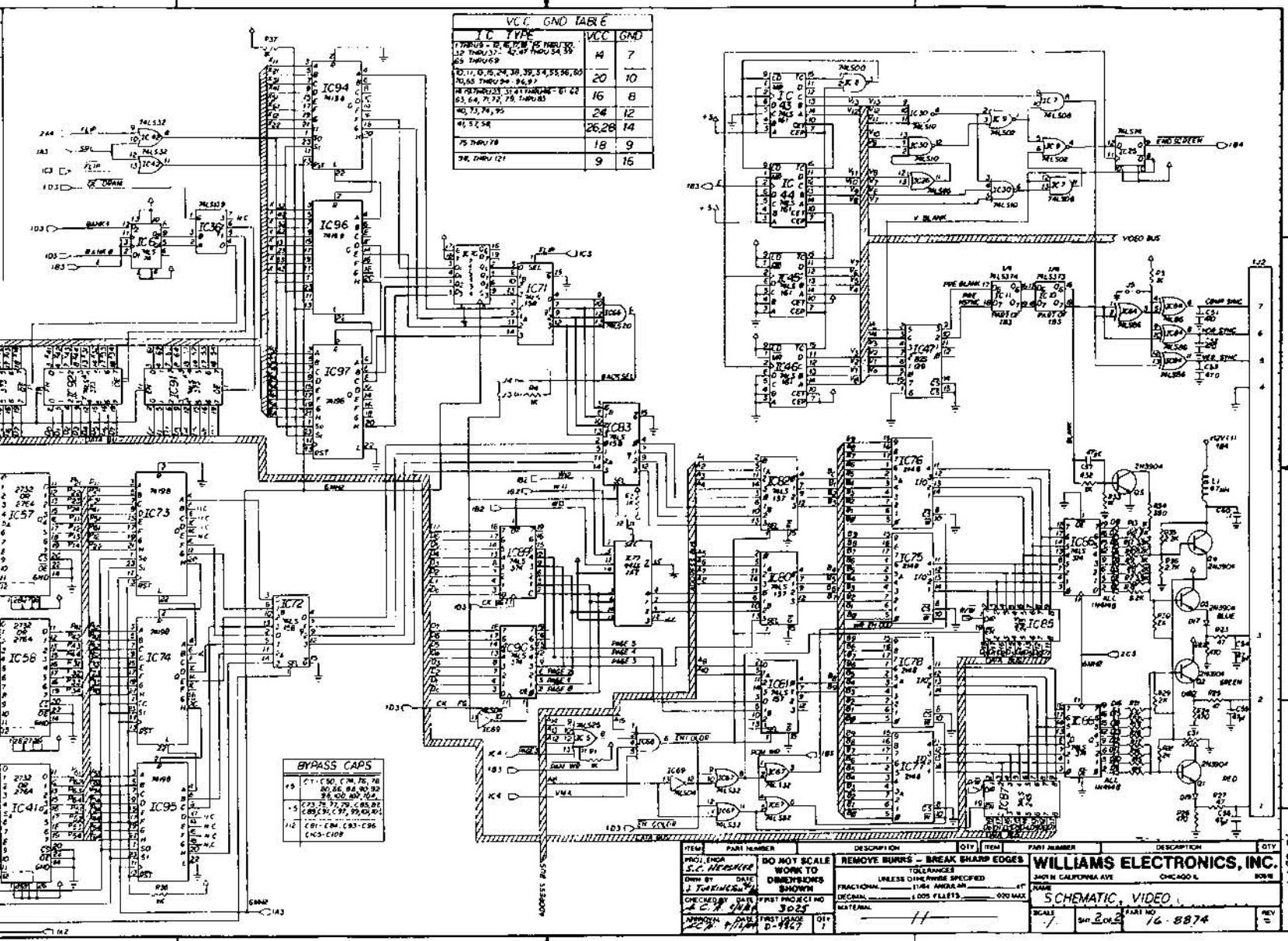
MR	DESCRIPTION OF CHANGE	4010 NO DATE
	<b>NEW PART RELEASE</b>	12-4-94 12-12-94
A	SEE SHEET 2 OF 3	12-4-94 12-12-94



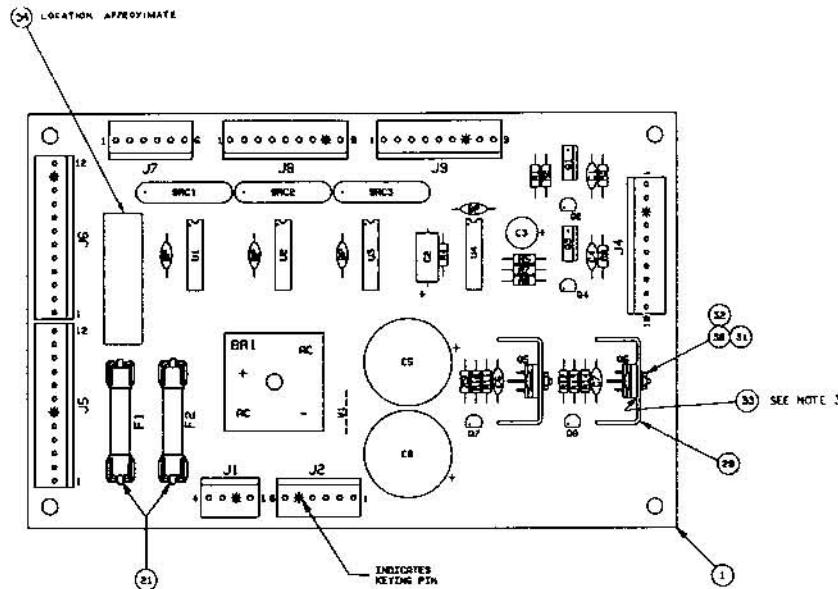
## Turkey Shoot

ITEM	PART NUMBER	DESCRIPTION	QTY	ITEM	PART NUMBER	DESCRIPTION	QTY
PROJECTOR S WEBSCHLER	DO NOT SCALE WORK TO DIMENSIONS SHOWN	REMOVE BURRS - BREAK SHARP EDGES TOLERANCES UNLESS SPECIFIED			WILLIAMS ELECTRONICS, INC.		
DRW. BY DATE M.C.	1-19-54	FRACTIONAL STUB ANGULAR			3401 CALIFORNIA AVE	CHICAGO 4	ILLINOIS
CHECKED BY DATE T.F. 6/1/54	1ST PROJECNO 3025	DECIMAL # OF ELEMS	0.000000		NAME		
APPROVAL DATE	1-19-54	MATERIAL			VIDEO PC BOARD SUB-ASSEMBLY		
LAST USAGE	D-9865	REVISION	1		SCALE		
					1/4	REV	
					SHT	0-102	A
					PART NO.	D-9867	





ITEM	DESCRIPTION OF ITEM	QUANTITY	UNIT
NEW PART RELEASE	14-9110	1	EA
A	ITEMS 23, 24, 25, 26, 27, 28, 29 ITEM 30, 31, 32, 33, 34, 35	1	EA



NOTES:

1. FOR SCHEMATIC REFER TO DRAWING NO. 16-931B.
2. RESISTOR .47W R1, R2, R5, R7, R10, R13.
3. APPLY ITEM 33 BETWEEN ITEMS 7 & 29.

ITEM	PART NO.	PART DESCRIPTION	DESCRIPTION
14	16-9310-113	LABEL - PCB ASSY TD	1
33	20-9229	THERMAL COMPOUND	20G
32	4705-00	#6 EXT. TOOTH LOCK WASHER	2
31	0117-00	6-32 HEX NUT	2
30	01005-06	6-32 x 3/8" P-H-N.	2
29	4705-00	SCREW	
		HEATSINK	2
28	5C1C-00	R11, R14	RESISTOR, C.F., 0.5W OHM 2 1/2% 1/2 WATT
27	69826-00	J1	4-PIN HEADER
26	5791-00	J2, J7	6-PIN HEADER
25	5791-00	J6, J9	5-PIN HEADER
24	5791-00	J4	4-PIN HEADER
23	5791-00	J5, J6	12-PIN HEADER
22	5791-00	F1, F2	FUSE, S.B. 5A 250V
21	89178-00		FUSEHOLDER
20	5843-00	BP	CAPACITOR AXL .01 MFD. 50V +50-20%
19	5843-00	C1, C4, C6, C7	CAPACITOR AXL .1 MFD. 50V +/-20%
18	5841-00	C2	CAP. ELECT. RAD. 0.01 MFD. 10V +/-10%
17	5841-00	C3	CAP. ELECT. RAD. 0.01 MFD. 10V +/-20%
16	5848-00	CS, CB	CAP. ELECT. RAD. 0.0001 MFD. 35V +/-20%
15	5819-00	V1	RESISTOR, C.F., 0 OHM
14	5818-00	R5	RESISTOR, C.F., 33K OHM 5% 1/4 WATT
13	5818-00	R4	RESISTOR, C.F., 22K OHM 5% 1/4 WATT
12	5818-00	R3, R9	RESISTOR, C.F., 270 OHM 5% 1/4 WATT
11	5818-00	R8, R12	RESISTOR, C.F., 1K OHM 5% 1/4 WATT
10	5818-00	SEE NOTE #2	RESISTOR, C.F., 5K OHM 5% 1/4 WATT
9	5161-00	Q1, Q5	TRANSISTOR, 2N6122 NPN
8	5162-00	Q2, Q4, Q7, Q8	TRANSISTOR, 2N2222 PNP
7	5162-00	Q5, Q6	TRANSISTOR, TIP122 NPN
6	5166-00	BR1	BRIDGE RECTIFIER, 35 A 200V
5	5658-00	SRC1, SRC2, SRC3	SIP, 4.7K, 16336-00 478 PED. BR. BC
4	5318-00	U1	I.C. 4649 86975-00 CMOS HEX. INVERTER
3	5261-00	U4	I.C. 74LS12 16987-00 DUAL HLT/118
2	5272-00	U2, U3	I.C. 74LS157 16936-00 DUAL 2 TO 1 HLT/PX
1	5272-00		BARE P.C. BOARD

BILL OF MATERIALS

WILLIAMS ELECTRONICS, INC.  
340 N CALIFORNIA AVE CHICAGO, ILLINOIS

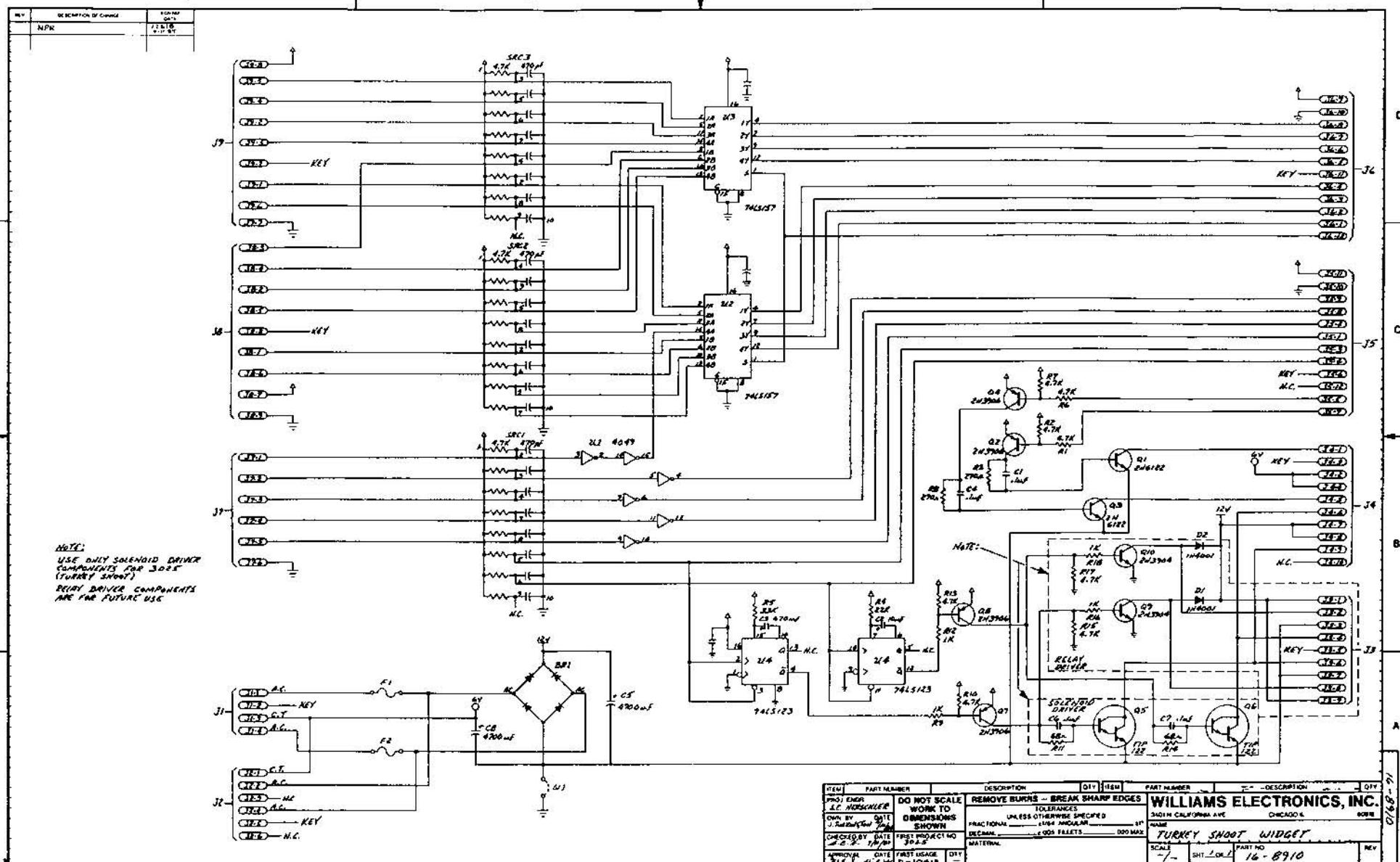
WIDGET P.C. BOARD ASSEMBLY

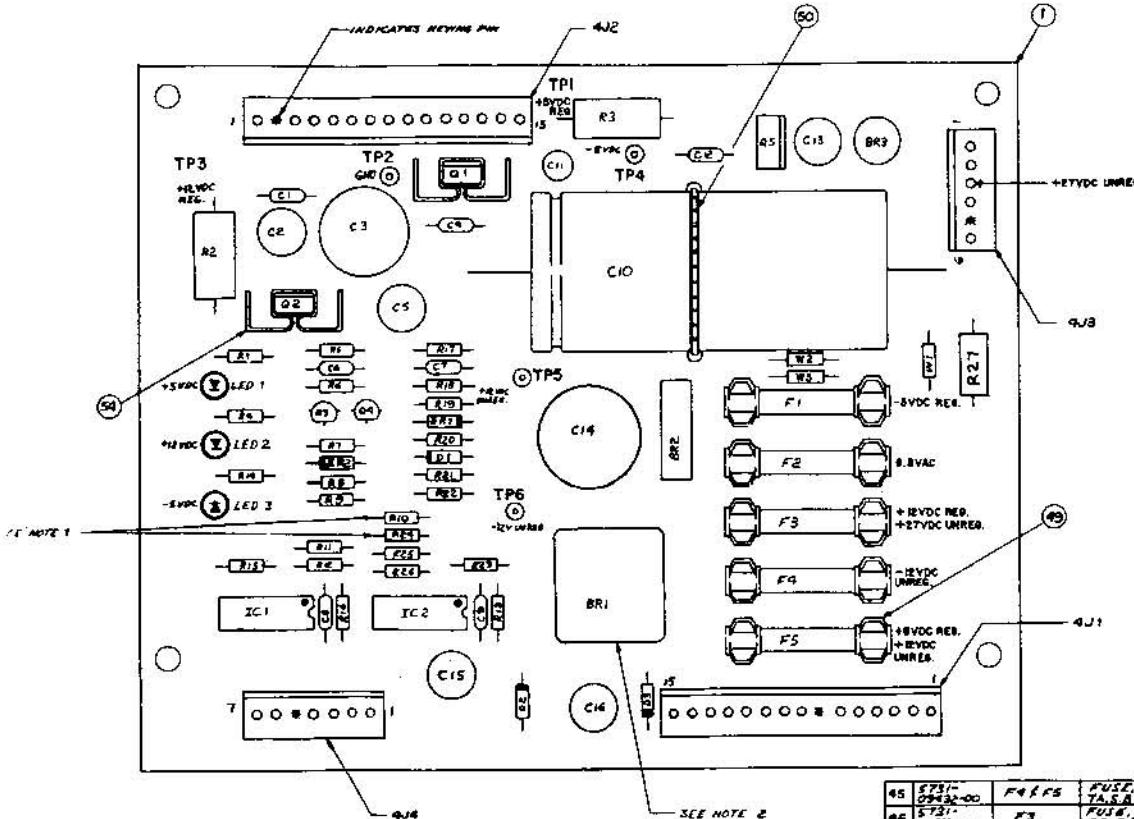
ITEM PART NO. PART DESCRIPTION QTY

1 16037-00 BARE P.C. BOARD 1

2 0-10413

PROJ. ENGR.	DO NOT SCALE	WORK TO DIMENSIONS SHOWN	REMOVE BURRS - BREAK SHARP EDGES
DRAWN BY DATE R. CAT 4/3/84	FRACTIONAL UNLESS OTHERWISE SPECIFIED	FRACTIONAL 0.005 INCHES OR DECIMAL 0.005 MILLIMETERS	TOLERANCES NAME _____
CHECKED BY DATE FIRST PROJECT NO. 38025	DECIMAL 0.005 INCHES OR MILLIMETERS	0.005 MIL	SCALE NAME _____
APPROVAL DATE 2/2/84 Y-77	ITEM NO.	QTY	SCALE REV. A
	0-18427	1	1/8





**NOTES:**

1. REMOVE R22 IF +5VDC IS GREATER THAN 5.25 VDC,  
REMOVE R24 IF +5VDC IS LESS THAN 4.75 VDC.
2. BRI MUST BE MOUNTED  $\frac{1}{8}$ " ABOVE SURFACE OF  
BOARD.
3. FOR SCHEMATIC REFER TO 16-B011.

ITEM NO.	PART NO.	DESCRIPTION	QTY	
35	5010-000005-00	R10	RESISTOR CF. 1% 5.6K OHM	1
56	5010-00334-00	R24	RESISTOR CF. 1% 5.6K OHM	1
54	5010-00	PART NO.	DESCRIPTION	QTY

#### LIST OF MATERIALS

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	5773-00	BARE PC BOARD	1
2	5010-00	RESISTOR, 1% 5K, 1W	1
3	5010-00	RESISTOR, 2.7K 2%, 1W	2
4	5010-00	RESISTOR, 1.2K 2%, 1W	1
5	5010-00	RESISTOR, 1.5K 2%, 1W	1
6	5010-00	RESISTOR, 1K 2%, 1W	1
7	5010-00	RESISTOR, 1.2K 2%, 1W	1
8	5010-00	RESISTOR, 1K 2%, 1W	1
9	5010-00	RESISTOR, 1K 2%, 1W	1
10	5010-00	RESISTOR, 1.2K 2%, 1W	1
11	5010-00	RESISTOR, 1.2K 2%, 1W	1
12	5010-00	RESISTOR, 1.2K 2%, 1W	1
13	5010-00	RESISTOR, 1.2K 2%, 1W	1
14	5010-00	RESISTOR, 1.2K 2%, 1W	1
15	5010-00	RESISTOR, 0.47K 2%, 1W	1
16	5010-00	RESISTOR, 1.2K 2%, 1W	1
17	5010-00	RESISTOR, CR 100K 2%, 1W	2
18	5010-00	RESISTOR, C.F. 100K 2%, 1W	4
19	5010-00	RESISTOR, C.F. 100K 2%, 1W	2
20	5010-00	RESISTOR, C.F. 100K 2%, 1W	2
21	5040-00	CAPACITOR, 0.1uF CERAMIC 300VDC 500VAC	2
22	5040-00	C2, C16 CAPACITOR, 100uF 50V RADIAL 50VDC 50VAC	2
23	5040-00	C15 CAPACITOR, 100uF 50V RADIAL 50VDC 50VAC	1
24	5040-00	C9 CAPACITOR, 100uF 50V RADIAL 77VDC 77VAC	1
25	5040-00	C10 CAPACITOR, 100uF 50V RADIAL 77VDC 77VAC	1
26	5040-00	C5 CAPACITOR, 100uF 50V RADIAL 77VDC 77VAC	1
27	5040-00	C14 CAPACITOR, 100uF 50V RADIAL 77VDC 77VAC	1
28	5040-00	C1, C4 & CR CAPACITOR, 100uF 50V RADIAL 77VDC 77VAC	3
29	5040-00	C8 CAPACITOR, 100uF 50V RADIAL 77VDC 77VAC	1
30	5040-00	C9 CAPACITOR, 100uF 50V RADIAL 77VDC 77VAC	1
31	5040-00	C12 CAPACITOR, 200uF 50V RADIAL 77VDC 77VAC	1
32	5040-00	C11 CAPACITOR, 200uF 50V RADIAL 77VDC 77VAC	1
33	5040-00	B1, B2 & B3 TRANSISTOR	3
34	5075-00	BR1 TRANSISTOR, INSEEN 2.5A (GAV)	1
35	5075-00	BR2 TRANSISTOR, INSEEN 2.5A (GAV)	1
36	5190-00	Q3, Q4 TRANSISTOR 1.5A 100V	2
37	5190-00	Q1, Q2 SCR, GAMP, 100V	2
38	5050-00	M6 VOLTAGE REGULATOR, 770V	1
39	5040-00	JCI, XCI VOLTAGE REGULATOR, 770V	2
40	5050-00	BR1 BRIDGE RECTIFIER, 3A AMP, 50V	1
41	5050-00	BR2 BRIDGE RECTIFIER, 4A, 50V	1
42	5050-00	BR3 BRIDGE RECTIFIER, 1.0A, 50V	1
43	5050-00	LED, LINEAR RED	3
44	5050-00	TP1 - TP6 TERMINAL #7608-1 (TEST POINT)	4

