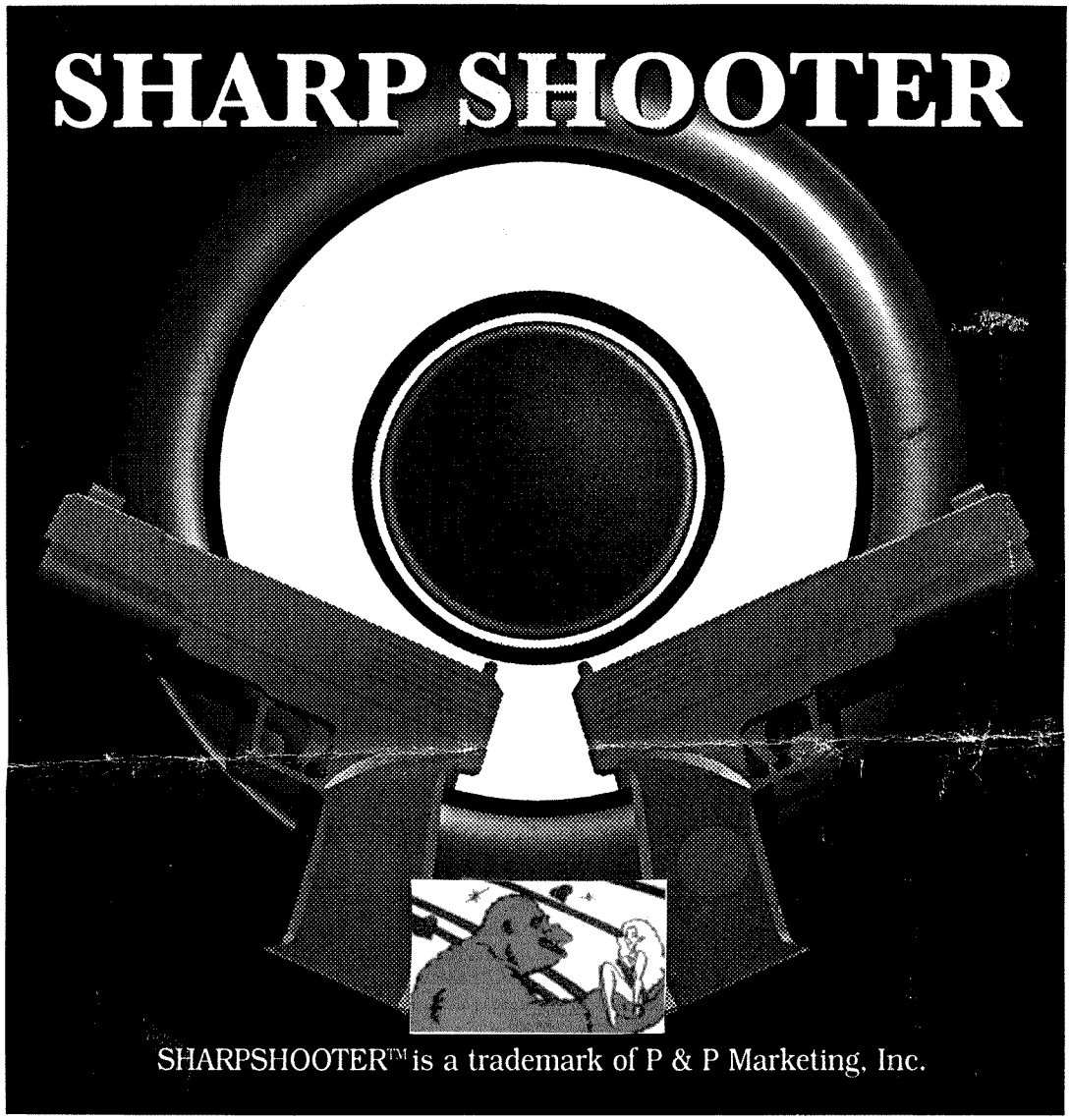
P & P Marketing, Inc.



INSTRUCTION MANUAL

Sky Boy Productions

SHARPSHOOTER PARTS LIST

PART #	DESCRIPTION
521-8050-05	SHARP SHOOTER PCB
830-8004-00	SHARP SHOOTER MARQUEE
830-8003-00	SHARP SHOOTER CONTROL PANEL OVERLAY
820-8019-00	SHARP SHOOTER SIDE DECALS (2)
780-8004-00	SHARP SHOOTER MANUAL
450-8002-00	KIT BOX
036-8040-00	JAMMA WIRING HARNESS
660-8088-00	GUN HOLSTERS (2)
810-8001-00	GUN, RED
810-8002-00	GUN, BLUE
540-8001-00	BUTTON, RED
540-8002-00	BUTTON, BLUE

Install the PCB into a JAMMA wired cabinet. All required connections are shown on the schematic entitled, "SHARPSHOOTER WIRING" (page ?). Speakers can also be wired to CN7, providing compatibility with some existing games.

Power the game. Dip switches control the monitor sync signal polarity and flip the screen in case of a mirrored monitor. Set the switches appropriately. Note: It takes several seconds after power-up before the switch's on state is recognized.

DIP SWITCH	ACTION
1-6	NOT USED
7	SYNC POLARITY
8	VERTICAL FLIP

Press the test button to enter the service mode to calibrate the guns and modify the settings if necessary. Detail on these operations are in the next section.

For service inside the United States, contact your local distributor or Atlas Distributing Inc. at 847/952-7519.

♦♦♦ SHARPSHOOTER SERVICE MENU INSTRUCTIONS ♦♦♦

The following is a description of the service menu for SHARPSHOOTER. The service menu gives you tools designed to help you keep your new game earning as much as possible. The three major sections of the service menu include SETTINGS, DIAGNOSTICS, and AUDITS.

****IMPORTANT NOTE** If you are experiencing problems with your guns:**

- **Make** sure your gun connectors are not upside down or flipped 180°
- **Make** sure your gun connectors are not switched - Gun 1 and Gun 2
- **Calibrate** your guns
- **Adjust** the flash brightness

When you receive a new SHARPSHOOTER kit or cabinet the guns can be out of alignment and this can adversely affect your earnings. This can be done through the GUN CALIBRATION SCREEN which is accessed through the SETTINGS menu.

To enter the service menu press the "TEST" or "SERVICE" button or any switch attached to the "TEST" pin on the JAMMA connector.

Use these switches to navigate and change values of the service menu:

START 1	cycles the cursor (represented by an "X") through the menu
START 2	performs the selected action
LEFT GUN	decreases a value
RIGHT GUN	increases a value

*The first page of the Service Menu (the **MASTER LIST**) shows the following:*

SETTINGS
DIAGNOSTICS
AUDITS
EXIT

SETTINGS

This page sets the values for most of the game settings so that you can tune SHARPSHOOTER to best fit your location. Your new SHARPSHOOTER will probably be set to **DEFAULT SETTINGS** when you install it at your location.

♦♦♦ SHARPSHOOTER SERVICE MENU INSTRUCTIONS ♦♦♦

The following items should appear on the SETTINGS page.

SETTING	OPTIONS	DEFAULT	ACTION
COINS TO START	(FREE PLAY) TO 8	2	RIGHT GUN + / LEFT GUN -
COINS TO CONTINUE	(FREE PLAY) TO 4	1	RIGHT GUN + / LEFT GUN -
BLOCK HIGH SCORES	NO/YES	NO	RIGHT GUN + / LEFT GUN -
CLEAR HIGH SCORES	NO/DONE	NO	START 2 BUTTON
MASTER VOLUME	0 TO 100	20	RIGHT GUN + / LEFT GUN -
SPEAKER CONFIGURATION	STEREO/MONO/SWAP	MONO	RIGHT GUN + / LEFT GUN -
GAME DIFFICULTY	EASY/MEDIUM/HARD	MEDIUM	RIGHT GUN + / LEFT GUN -
FLASH BRIGHTNESS	**1 TO 20**	**10**	**RIGHT GUN + / LEFTGUN -**
RESTORE DEFAULT SETTINGS	LAST WARNING!!		START 2 BUTTON
GUN CALIBRATION SCREEN			
RETURN TO MASTER LIST			

Use the "START 1" button to cycle through the options and then use LEFT GUN to decrease a value and the RIGHT GUN to increase a value. Below is a description of each of the settings.

COINS TO START: Coins or tokens required to start a one player game.

COINS TO CONTINUE: Coins or tokens required to continue one game.

BLOCK HIGH SCORES: This will prevent further high score entry if obscenities become a problem. This does not clear any current entries.

CLEAR HIGH SCORES: Clears all High Score entries if obscenities become a problem.

MASTER VOLUME: Sets the volume, 0-100

SPEAKER CONFIGURATION: Sets Stereo, Mono or Swap mode. Use Mono if your left and right speakers are wired together or if you are not sure how they are wired. Use the Swap mode if you find that your speakers are wired for stereo but are hooked up backwards. You can determine your current wiring setup by going into the **DIAGNOSTICS** page and then execute the **SOUND TEST**.

GAME DIFFICULTY: Sets the difficulty of the game. Easy, Medium or Hard.

**** A WORD ON GAME DIFFICULTY ****

The difficulty of each game in SHARPSHOOTER is usually determined by the number of hit targets necessary to win. If the game is set to **HARD** then each game will start with the highest quota. Each Time a player loses a game that particular scene will automatically decrease its quota to the **MEDIUM** setting. If the player loses the same game again the quota will automatically set itself to the **EASY** setting. If an operator sets the overall game difficulty to **MEDIUM** then all games will start at the **MEDIUM** difficulty and will work their way down from there. This setting can help you keep SHARPSHOOTER matched with the players' skill at your location. By checking your audits you can find the **AVERAGE TIME PER CREDIT**. For best earnings this should be between two and three minutes per credit. If you are getting a number higher than three minutes per credit try increasing the difficulty setting. If your average time per credit is below two minutes you might try to decrease the difficulty setting. **** IF YOU CHANGE THE DIFFICULTY SETTING AND WANT TO GET NEW AVERAGES IN YOUR AUDITS THEN YOU SHOULD CLEAR THE AUDITS BEFORE YOU PUT THE GAME BACK INTO SERVICE ****

FLASH BRIGHTNESS: Due to the immense varieties of monitors in the field it is sometimes necessary to change the flash brightness of the monitor for proper gun registration.

RESTORE DEFAULT SETTINGS: Restores the factory settings. This is done by pressing the "START 2" button twice.**** WARNING- this cannot be undone****

GUN CALIBRATION SCREEN: Jumps to the gun calibration page.

This is how the gun calibration page should appear:

GUN CALIBRATION
SHOOT EACH TARGET 16 TIMES TO CALIBRATE
LEFT GUN CNT 0 RIGHT GUN CNT 0
X TO RETURN TO PREVIOUS MENU
LEFT TO CYCLE, RIGHT TO ACCEPT

On the left side of the screen you should see a RED target. On the right side of the screen you should see a BLUE target. **** YOU SHOULD ONLY CALIBRATE ONE GUN AT A TIME! **** Aiming the gun at the screen, start with the left gun and shoot at the RED target 16 times then move to the right gun and shoot at the BLUE target 16 times. You must shoot a gun 16 times before it will be calibrated.

When you have calibrated a gun and wish to exit the **GUN CALIBRATION** page press the "START 2" button. In order for the new calibration values to be saved you must return to the first Service Menu page (the **MASTER LIST**) and then exit. The calibration values will not go into effect unless you exit the Service Menu from the first page. These values cannot be erased or changed unless

you return to the GUN CALIBRATION screen again and shoot one of the guns 16 times. You can return to the **GUN CALIBRATION** page and recalibrate either gun at any time.

Each time a gun is dropped or banged against the cabinet accuracy will be lost and you may need to recalibrate your guns from time to time.
** **REMEMBER-** ** one of the most important factors in player satisfaction is gun accuracy and with proper use of this calibration tool you can keep your SHARPSHOOTER guns shooting accurately for the life of the game.

RETURN TO MASTER LIST: Returns to the first page of the Service Menu

DIAGNOSTICS

The **DIAGNOSTICS** page offers several diagnostic tools to help you keep you SHARPSHOOTER game functioning properly.

This is how the DIAGNOSTICS page will appear:

MONITOR COLOR ADJUST
MONITOR POSITION ADJUST
SWITCH TEST
GUN TEST
DISPLAY EEP
ROM CHECKSUM
SOUND TEST
RETURN TO MASTER LIST

A description of each test follows:

MONITOR COLOR ADJUST Displays NTSC color bars. You should adjust monitor color adjustments to see the following colors from left to right:
|White|Yellow|Cyan|Green|Purple|Red|Blue|
Press "START 2" button to exit.

MONITOR POSITION ADJUST This screen gives you a graph that is meant to help you adjust the horizontal width and the vertical width of your video monitor. This also helps you center the image. To get proper screen width try to have the green band show on all sides of the screen. If you cannot get the green band to show on all sides try to get the yellow bands to show on all sides. ****YOU MUST AT LEAST HAVE THE RED BAND SHOWING ON ALL SIDES**** Use the color bands to center the screen. There should be equal amounts of the colors on both the left and right sides.

SWITCH TEST	Displays the state of the following switches: GUN 1 GUN 2 START 1 START 2 COIN 1 COIN 2 **** TO EXIT YOU MUST PRESS START 1 AND START 2 TOGETHER ****
GUN TEST	Verifies gun firing functionality and accuracy. You should see concentric rings for each gun fired. **** RED rings should appear with the LEFT gun and BLUE rings should appear with the RIGHT gun.**** If these are backwards then you must switch the gun hookups.
DISPLAY EEP	Displays the contents of the EEPROM (factory use only)
ROM CHECKSUM	Shows checksums of Code, and Audio ROMS
SOUND TEST	Plays test sounds to verify audio proper wiring of stereo speakers. You must have changed the **SPEAKER CONFIGURATION** in **SETTINGS** to **STEREO** in order to hear speaker orientation.
RETURN TO MASTER LIST	Returns to top level service menu.

AUDITS

From the **MASTER LIST**, the **AUDITS** screen can be accessed. These audits will give you important information about the use of your SHARPSHOOTER game. This information can help you determine what difficulty setting is appropriate for your location and how much you should charge for continues, etc. When you make significant changes to SHARPSHOOTER settings you may wish to record some of the audit values and then reset then clear the **AUDITS**. To clear the audits, move the cursor to **RESET AUDITS** and press the "START 2" button five times.

**** ANOTHER TYPE OF AUDIT IS THE MECHANICAL COIN COUNTER**** If a mechanical coin counter is wired to "COIN COUNTER 1" on the JAMMA harness then it will count all coins. It cannot be reset with software.

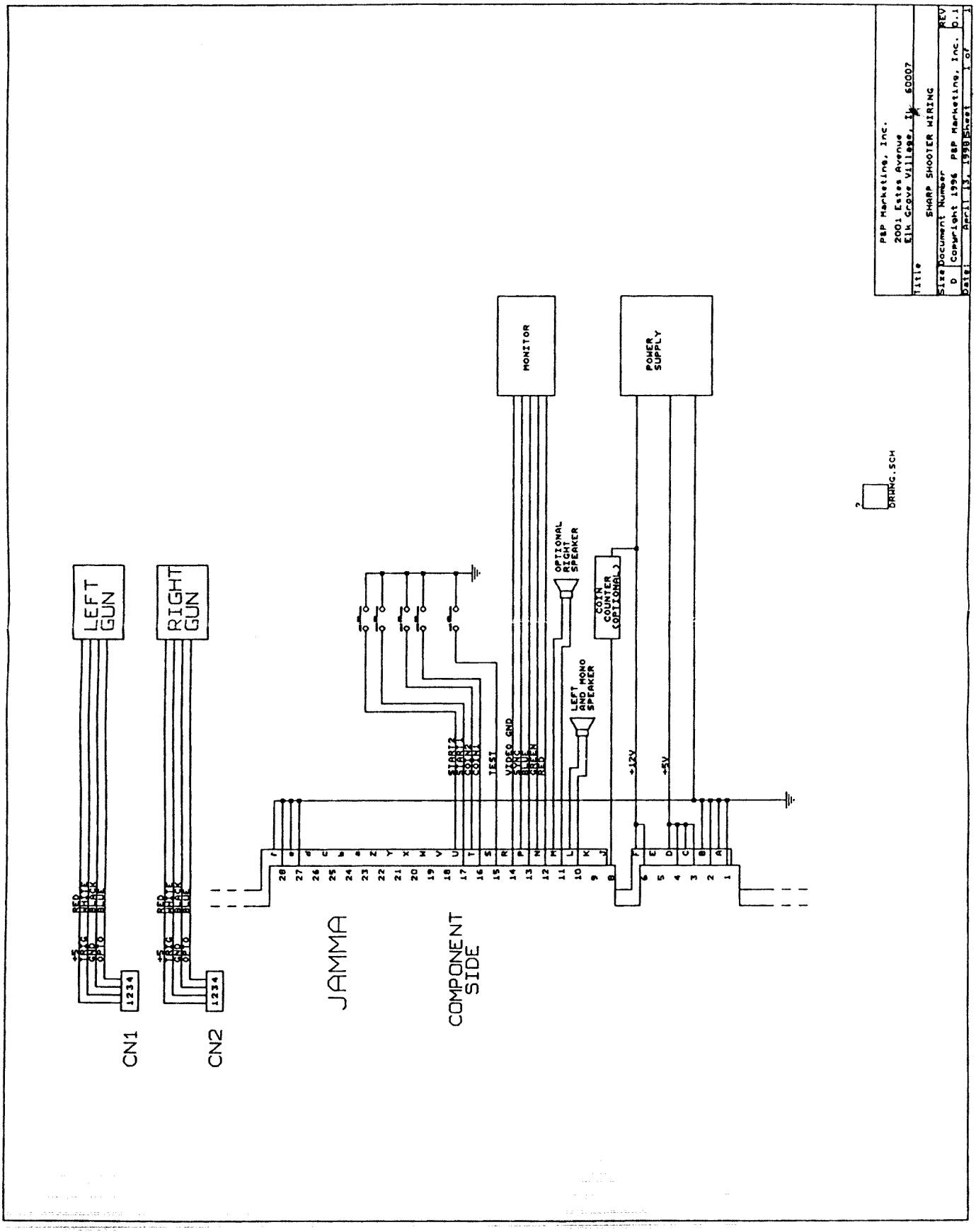
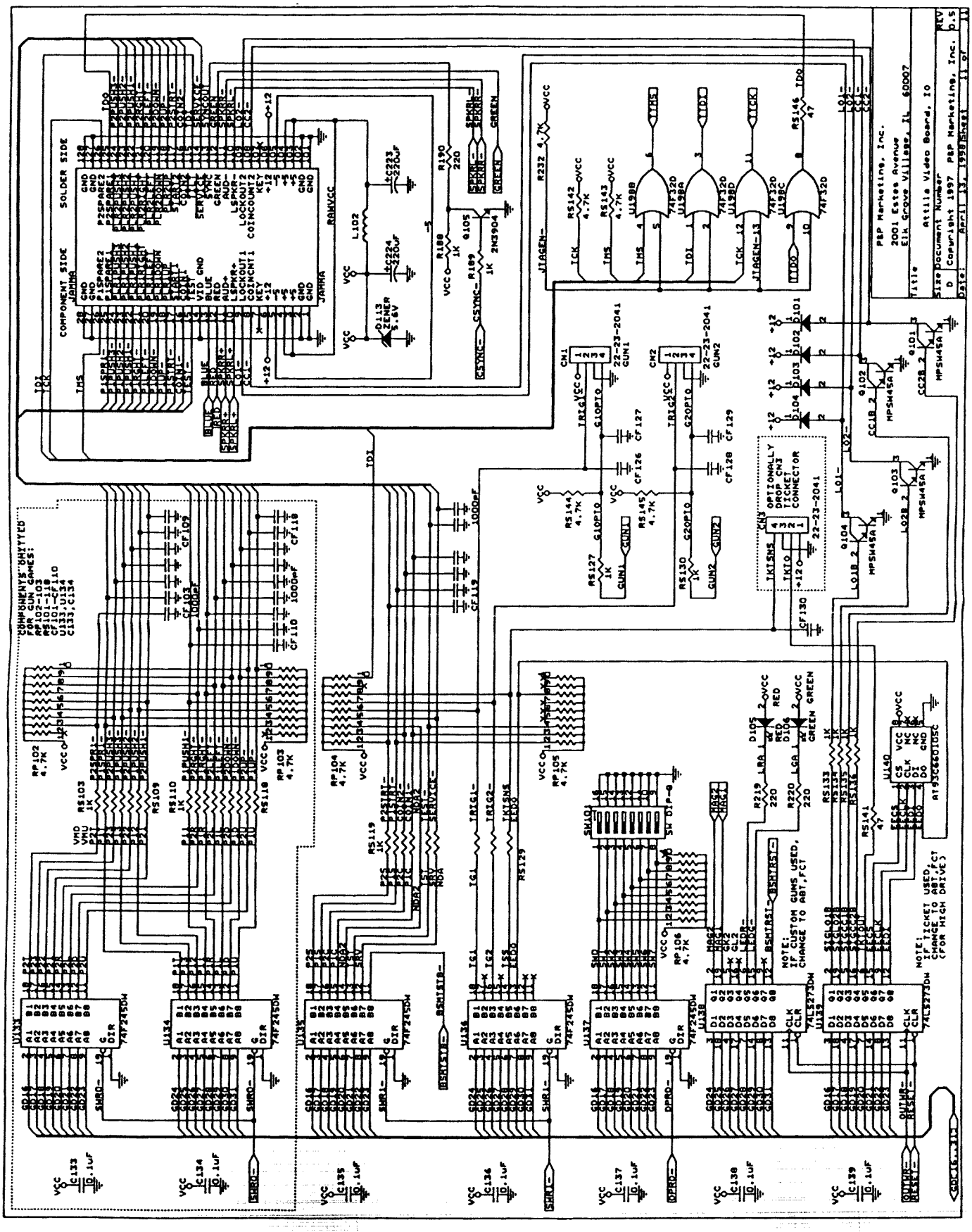
*This is how the **AUDITS** page should appear.*

TOTAL COINS	Total of all coins
TOTAL STARTS	Total of all game starts
TOTAL CONTINUES	Total number of game continues
MIN TIME PER CREDIT	The shortest time spent playing on one credit
AVG TIME PER CREDIT	The average time spent playing on one credit
MAX TIME PER CREDIT	The maximum time spent playing on one credit
MAX CONTINUE STREAK	Maximum game continues per player
AVG CONTINUE STREAK	Average game continues per player
RESET AUDITS	This clears all audit values. You must push "START 2" button FIVE TIMES. If you need to exit this operation press "START 1" button and return to the master list.
RETURN TO MASTER LIST	

SHARPSHOOTER JAMMA

SOLDER SIDE		PARTS SIDE	
A	GND	1	GND
B	GND	2	GND
C	+5VDC	3	+5VDC
D	+5VDC	4	+5VDC
E		5	
F	+12VDC	6	+12VDC
H	KEY	7	KEY
J		8	COIN COUNTER
K		9	
L	SPKR LEFT-	10	SPKR LEFT+
M	SPKR RIGHT-	11	SKPR RIGHT+
N	VIDEO GREEN	12	VIDEO RED
P	VIDEO SYNC	13	VIDEO BLUE
R		14	VIDEO GROUND
S		15	TEST SWITCH
T	COIN 2	16	COIN 1
U	START 2	17	START 1
V		18	
W		19	
X		20	
Y		21	
Z		22	
a		23	
b		24	
c		25	
d		26	
e	GND	27	GND
f	GND	28	GND

SHARPSHOOTER WIRING DIAGRAM



SHARPSHOOTER I/O SCHEMATIC