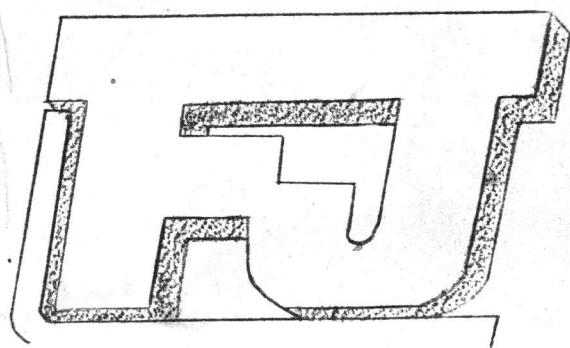cut this out

F J
PLAYER INSTRUCTIONS

* 5 BALLS — 40 CENTS PER PLAYER.
* MAKING F & J LIGHTS TOP EJECT SAUCER TO INCREASE BONUS VALUE.
* MAKING LEFT AND RIGHT EJECT HOLES SCORES 3,000 POINTS AND SPOTS LOWEST UNLIT STEPPING TARGET.

    — 1ST TIME LIGHTS RESPECTIVE SPIN TARGET.

    — 2ND TIME LIGHTS RESPECTIVE STAR ROLLOVERS.

* MAKING STEPPING TARGETS — 1ST ROW WILL SCORE 500 POINTS EACH AND COMPLETING FIRST ROW WILL SCORE 5,000 POINTS.

    MAKING STEPPING TARGETS — 2ND ROW WILL SCORE 1,500 POINTS IF THE TARGET IS LIT OR 500 POINTS IF NOT, COMPLETING THE SECOND ROW WILL SCORE 10,000 POINTS AND AN EXTRA BALL.

    MAKING STEPPING TARGETS — 3RD ROW WILL SCORE 3,000 POINTS IF THE TARGET IS LIT OR 1,500 POINTS IF NOT, COMPLETING THE THIRD ROW WILL SCORE 20,000 POINTS AND ACTIVATE SPECIAL SEQUENCE.

    MAKING CENTRE TARGET WHILST SPECIAL SEQUENCE IS OPERATING WILL SCORE VALUE OF THE INSERT LIT AT TIME OF IMPACT.

* TILT PENALTY — BALL IN PLAY.

F J
PLAYER INSTRUCTIONS

* 3 BALLS — 20 CENTS PER PLAYER.
* MAKING F & J LIGHTS TOP EJECT SAUCER TO INCREASE BONUS VALUE.
* MAKING LEFT AND RIGHT EJECT HOLES SCORES 3,000 POINTS AND SPOTS LOWEST UNLIT STEPPING TARGET.

    — 1ST TIME LIGHTS RESPECTIVE SPIN TARGET.

    — 2ND TIME LIGHTS RESPECTIVE STAR ROLLOVERS.

* MAKING STEPPING TARGETS — 1ST ROW WILL SCORE 500 POINTS EACH AND COMPLETING FIRST ROW WILL SCORE 5,000 POINTS.

    MAKING STEPPING TARGETS — 2ND ROW WILL SCORE 1,500 POINTS IF THE TARGET IS LIT OR 500 POINTS IF NOT, COMPLETING THE SECOND ROW WILL SCORE 10,000 POINTS.

    MAKING STEPPING TARGETS — 3RD ROW WILL SCORE 3,000 POINTS IF THE TARGET IS LIT OR 1,500 POINTS IF NOT, COMPLETING THE THIRD ROW WILL SCORE 20,000 POINTS, AN EXTRA BALL AND ACTIVATE SPECIAL SEQUENCE.

    MAKING CENTRE TARGET WHILST SPECIAL SEQUENCE IS OPERATING WILL SCORE VALUE OF THE INSERT LIT AT TIME OF IMPACT.

* TILT PENALTY — BALL IN PLAY.
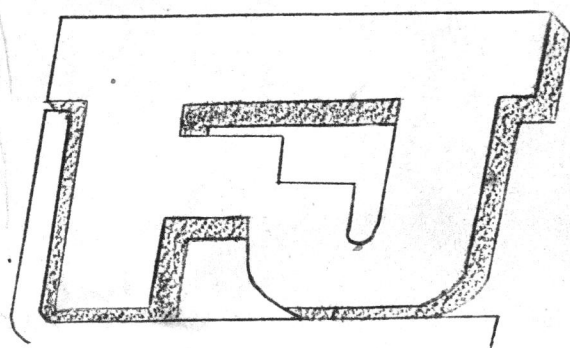
A.   GENERAL GAME OPERATION

1.   Power Up Sequence

When power is applied to the machine there is a short delay
of approximately 10 seconds before the machine plays a
"power-up" tune to announce that it is ready to play. During
the power up period the machine is performing six tests on
its own hardware, the successful completion of each being
signalled by a single flash of a LED on the M.P.U. module (A1)
and a simultaneous tone from the sound system. After power-up
the machine goes into attract mode waiting for a game to be
played.

2.   Attract Mode

In this mode the four score windows display the player's score
for the last game, alternating with the highest score to date.
Some lamp flashing will occur on the playfield. As coins are
inserted a "coin-in" tune will sound and the accumulated credit
will be shown in the credit window.

3.   Game Start

A game is started by pressing the credit button located on the
front end of the cabinet. The first player's score flashes
'00', a '1' appears in the ball-in-play window, the credit display
is reduced by one and a "player-up" tune is played. Additional
players are posted each time the credit button is pressed. Up to
four players can play at a time, each player's turn being
indicated by the flashing of his score display. The credit
button has no effect after the fourth player has been added or
the credit display reads '0'. Pressing the credit button after
the first player has scored cancels the game and posts the first
player for a new game.

When a game is started a background sound may be produced
depending on game option switch 11.

The background sound will increase in pitch periodically while
the ball is in play as long as scoring occurs.

4.   Game Scoring

Shooting the ball initiates play. Bumpers and spinners score
100 points or 1000 points when lit. Side kickers and rebound
switches score 10 points. All spinner lane roll-overs score
100 points or 100 points and one bonus advance if lit. Both
return lanes score 500 points and advance the bonus one position.
Both outlanes score 5000 points and advance the bonus two
positions.

i) F.J. Feature - making either the 'F' target or roll-over lights both 'F' insergs, scores 500 points and one bonus advance. Making either the 'J' or roll-over lights both 'J' inserts, scores 500 points and one bonus advance.

ii) Top Eject Hole - entering the top eject hole scores 3000 points and awards one or two bonus advances depending on game option switch 9 and lights either the 'F' or 'J' inserts if they are not made. If both 'F' and 'J' inserts are made then the bonus multiplier is advanced until 5 X is achieved. The pop bumpers are lit when 2 X or 3 X is achieved depending on game option switch 15.

iii) Triple Target Feature - initially the first row of inserts flash quickly. Making any of the targets in this condition lights the corresponding insert and scores 500 points. Once all 3 targets are made 5000 points is awarded and the second row of inserts are lit successively. The cycle rate depends on game option switch 13. If a target is made when its corresponding second row insert is not lit it scores 500 points. If its insert is lit it scores 1500 points and the insert remains on. Making all three lit targets will score 10000 points. An extra ball may be awarded depending on game option switch 14.

The third row of inserts now cycle at a faster rate than the second row. The target scoring scheme is similar to that described for the second row except the unlit target score is 1500 points and the lit target score is 3000 points. Making all three lit targets will now score 20000 points and award an extra ball if it was not awarded at the completion of the second row and the middle column of target inserts, including the 'special' insert will now cycle at the same rate as the third row. Making the middle target will now score the lit value at the time of making, i.e. 500, 1500, 3000 or 'special'. The outer targets score 3000 points.

Depending upon the setting of game option switch 10 the triple target status may be remembered from ball to ball or reset to row 1. However the status will always reset at the end of the current ball if the third row has been completed during that ball.

iv) Lower Eject Holes - both eject holes score 3000 points and award one or two bonus advances depending on game option switch 9. In addition entering the left eject hole the first time lights the left spinner and the second time lights the left spinner lane roll-over. The right eject hole operates on the right spinner lane in the same fashion. Furthermore both eject holes are tied to the 'triple target feature', if the status of that feature is in either row 1, 2 or 3 mode. In this state either eject hole awards the current value on the bottom target if it is not made or the next target upwards if it is.

v) Bonus - once maximum bonus of 29,000 is achieved, no more can be accumulated. Bonus lamps score 1000 points each, multiplied by the bonus multiplier value. It is collected when the ball enters the outhole.

5.   Outhole Sequence

After the ball returns to the outhole and there is only one
player, the "ball-in-play" number will advance by one. If
there is more than one player, "ball-in-play" will remain the
same and the next player's turn is indicated by the flashing
score. However, if the ball enters the outhole without scoring
it is returned to the same player for replay. The game
continues until each player has played the allowable number of
balls (adjustable). The "game-over" light will then be lit and
an optional "game-over" tune will sound. A random "match"
number appears and the match light is lit (optional). If the
number is the same as the last two digits in a players score,
a free game is awarded.

6.   Extra Balls

When a player wins an extra ball a unique tune is played and the
two "shoot again" lights on the playfield will flash alternatively
during the play of the regular ball. Once this ball enters the
outhole, the score display will flash to prompt the same player
and the "ball-in-play" number will not advance.

7.   Tilt

If the machine is tilted during play a tilt sound is made, all
scoring will stop and the bumpers, flipper and kickers are
disabled. Bonus points are not collected. The player only resumes
control of the machine after the current ball enters the outhole.

8.   Slam

Slamming the machine will result in a more severe penalty. The
current game is cancelled, score displays and feature lights go
out and the machine will remain "dead" for approximately 10
seconds. After this delay the "power-up" turn is played, the
"game-over" light is lit and the machine returns to attract mode.

B.   SELF TEST SEQUENCE

Self test can be entered at any time by pressing the push button on the inside of the front door. By pressing the button once the sequence is started with test number 1. Subsequent tests are activated by re-pressing the button. For all except the first test, the self test number is displayed in the "ball-in-play" window.

Tests 1 to 5 are routine maintenance checks.
Tests 6 to 17 are bookkeeping functions, designed to help the operator perform certain accounting tasks.

1.   Routine Maintenance Tests

Test 1 - Display Test : All five displays cycle from 0 to 9 and repeat continuously.

Test 2 - Feature Lamp Test : All switched lamps flash on and off continuously.

Test 3 - Solenoid Test : All solenoids are activated one at a time in a continuous sequence. The flipper solenoids may be tested by holding both flipper buttons in during the test. Solenoid identification numbers are shown in the player score displays. Refer to Appendix 1 for a Solenoid Identification Chart.

Test 4 - Switch Test : The switch assembly is searched for stuck contacts. If any are found the identification number of the first set encountered is flashed on the player score displays. The number remains until the fault is cleared. Other numbers may follow if more stuck contacts are present. Once no stuck switches are found "00" is displayed. Refer to Appendix 1 for a switch identification chart.

Test 5 - Sound Test : The 10 points sound is pulsed continuously.

2.   Bookkeeping Functions

The bookkeeping functions are displayed in all player score windows. The test number appears in the "ball-in-play" window.

Test 6 - First High Score Level : The game is designed to award a free game or extra ball (optional) at each of three score levels. Any desired level from 1000 to 999000 can be set. The level can be increased by 10000 points at a time by holding in the credit button. It can be decreased by 1000 points at a time by holding in the slam switch inside the coin door. The level can be reset to "00" by simultaneously operating the slam and coin door switches. If the level is left at "00" the high score feature is eliminated for that level.

Test 7 - Second High Score Level : Level can be altered as for test 6.

Test 8 - Third High Score Level : Level can be altered as for test 6.

Test 9 - Highest Score to Date : The game is designed to award free games when the "Highest Score to Date" is exceeded. The level can also be altered as described in Test 6, however it should be noted that "00" does not eliminiate the feature.

Test 10 - This test displays the total number of times the coin switches have operated with the coin door open. The number is normally not resettable.

Test 11 - This test displays the total coins through both chutes with the coin door closed. The number is normally not resettable.

Test 12 - Number of free games awarded with the coin door closed. This figure can be reset by simultaneously operating the slam and coin door switches.

Test 13 - Number of paid games with the coin door closed. This figure can be reset as for test 12.

Test 14 - Number of times the Highest Score to Date changes with the coin door closed. Can be reset as for test 12.

Test 15 - Number of extra balls awarded with the coin door closed. Can be reset as for test 12.

Test 16 - Number of tilts and slams with coin door closed : Can be reset as for test 12.

Test 17 - This test displays the percentage of free games to paid games awarded with the coin door closed. The percentage can be reset as for test 12. It should be noted that the number of free games and paid games displayed in tests 12 and 13 are not affected when the percentage is reset. The ratio is calculated using separate date areas.

Pressing the self test button once more while in test 17 causes the game to return to attract mode after performing the power-up sequence. For a more rapid return to attract mode, self test can be aborted at any stage by turning the power off, then on.

A self test time out feature is built-in to the machine so that it can never be left in any test mode. After about two minutes in any self test the game automatically resets by going through the power-up sequence. (For maximum flexibility, however, this time-out feature can be disabled by first switching power off, then setting switch 24 on the M.P.U. board, A1, to the OFF position).

C.   GAME FEATURE ADJUSTMENTS

Each game has twenty-four switches located on the M.P.U. board,
A1, that allow play to be customised to the location. The
switches are contained in 3 packages and numbers S1-S8, S9-S16
and S17-S24. Game adjustments must be made while the power is
turned off.

Credits/Coin Adjustments : The credits/coin options are set by
means of switches 1, 2 and 3. There are 8 different settings
as shown below.

	Switches			Credits/Coin		
1	2	3				
OFF	OFF	OFF		1/1		
ON	OFF	OFF		1/2		
OFF	ON	OFF		1/3		
ON	ON	OFF		1/4		
OFF	OFF	ON		1/1, 3/2	*	
ON	OFF	ON		1/2, 2/3	*	
OFF	ON	ON		2/3, 4/5	*	#
ON	ON	ON		2/5	#	

* Coin Counter reset at first score of each ball

No credits until third coin dropped

No credit until fifth coin dropped

High Score Award : At each of the three high score levels, the
game can be programmed to give either an extra ball or a free
game by setting switch 4.

Switch 4	Award
OFF	FREE GAME
ON	EXTRA BALL

Match Feature : With this feature on a random number appears in
the "ball-in-play" window at game-over. If this number matches
the tens digit in a players score, a free game is awarded. The
feature is controlled by switch 5.

Switch 5	Match Feature
ON	ON
OFF	OFF

Switch 6	7	Award
OFF	OFF	NO AWARD
ON	OFF	1 FREE GAME
OFF	ON	2 FREE GAMES
ON	ON	3 FREE GAMES

Game-Over Tune Feature : The tune played by the machine to announce game-over may be turned on or off by switch 8.

Switch 8	G.O. Tune
ON	ON
OFF	OFF

Eject Hole Bonus Awards : Entering any of the 3 eject holes awards either one or two bonus advances depending on Switch 9.

Switch 9	Eject Hole Bonus Award
OFF	ONE
ON	TWO

Triple Target Status Memory : The target insert status may be remembered from ball to ball for each player depending on switch 10.

Switch 10	Triple Target Memory
OFF	DISABLED
ON	ENABLED

Background Sound Feature : A background sound may be produced during play depending on switch 11.

Switch 11	Background Sound
OFF	DISABLED
ON	ENABLED

Triple Target Lamp Cycle Speed : The rate of lamp cycling for the triple target feature is controlled by switch 13.

Switch 13	Cycle Rate
OFF	FAST
ON	SLOW

Extra Ball Award : An extra ball is awarded on completing either the second or third row of the triple target feature depending upon switch 14.

Switch 14	Extra Ball Award
OFF	ROW 3 COMPLETION
ON	ROW 2 COMPLETION

Pop Bumper Award : The pop bumpers are lit when achieving a bonus multiplier of 2 X or 3 X depending on switch 15.

Switch 15	Pop Bumper Award
OFF	3 X
ON	2 X

Balls Per Game :

Switch 16	# BALLS/GAME
OFF	3
ON	5

Maximum Credits : The limit on the number of games that can be accumulated by either inserting coins or winning free games is set by switches 17 and 18.

Switch 17	18	MAXIMUM CREDITS
OFF	OFF	5
ON	OFF	10
OFF	ON	15
ON	ON	20

Note: 1. When lowering the credit limit any surplus credits are lost.
        2. Coin counters operate regardless of maximum credit settings.

Free Game Sound :

Switch 22	SOUND WHEN FREE GAME AWARDED
OFF	SPECIAL TUNE
ON	KNOCKER

Coin Counter Reset Option : The number of coins displayed in self test numbers 10 and 11 may be reset by operating both the slam and door switches if switch 23 is ON.

Switch 23	RESETTABLE
OFF	NO
ON	YES

Self-test Time-out Option : The machine can be set by switch 24 to automatically exit self-test after about 2 minutes in any one test.

Switch 24	TIME OUT FEATURE
OFF	DISABLED
ON	OPERATIVE

Note: Any unused switches should be turned OFF.

APPENDIX 1

Solenoid Identification Chart for "F.J."

The following chart may be used with self test number 3 to identify the solenoids of the game.

Identification Number	Solenoid Description
01	KNOCKER (If installed)
02	TOP EJECT HOLE
03	LEFT EJECT HOLE
04	RIGHT EJECT HOLE
05	NOT USED
06	NOT USED
07	OUT HOLE KICKER
08	NOT USED
09	LEFT TOP BUMPER
10	RIGHT BUMPER
11	LEFT BOTTOM BUMPER
12	RIGHT SLINGSHOT
13	NOT USED
14	LEFT SLINGSHOT
15	COIN LOCKOUT
16	FLIPPER ENABLE RELAY
17	NOT USED

APPENDIX 2

Switch Identification Chart for "F.J."

The following chart may be used with self test number 4 to
identify the switches of the game.

Id. Number	Switch Description	Id. Number	Switch Description
01	NOT USED	21	LEFT OUTLANE
02	TILT	22	TOP TARGET
03	CREDIT	23	MIDDLE TARGET
04	NOT USED	24	BOTTOM TARGET
05	NOT USED	25	LEFT SPINNER
06	NOT USED	26	RIGHT SPINNER
07	NOT USED	27	'F' TARGET
08	NOT USED	28	RIGHT RETURN LANE
09	SLAM	29	LEFT RETURN LANE
10	COIN DOOR	30	'J' ROLL-OVER
11	REBOUND	31	'J' TARGET
12	LEFT SPINNER LANE MIDDLE	32	TOP EJECT HOLE
13	LEFT SPINNER LANE TOP	33	LEFT TOP BUMPER
14	RIGHT SPINNER LANE MIDDLE	34	RIGHT BUMPER
15	RIGHT SPINNER LANE TOP	35	LEFT BOTTOM BUMPER
16	COIN SWITCHES	36	RIGHT SLINGSHOT
17	LEFT SPINNER LANE BOTTOM	37	LEFT SLINGSHOT
18	RIGHT SPINNER LANE BOTTOM	38	LEFT EJECT HOLE
19	'F' ROLL-OVER	39	RIGHT EJECT HOLE
20	RIGHT OUTLANE	40	OUTHOLE