

Keeney's

OLD
PLANTATION

OPERATION AND SERVICE MANUAL

J. H. KEENEY & CO., INC.

2600 WEST 50th STREET

CHICAGO 32, ILLINOIS

OLD PLANTATION

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IMPORTANT

The Manufacturer has reserved the right to make changes in design or add any improvements on any games without incurring any obligation to install same on games previously purchased. Dealer reserves a similar right.

Further, our warranty shall not apply to any game which shall have been repaired or altered outside of an authorized dealership in any way so as in the judgement of Dealer to affect adversely its performance and reliability, or to any game which has been subject to misuse, negligence or accident.

OLD PLANTATION

INTRODUCTION

Old Plantation is an entirely new concept of an amusement game combining the best features of two of our leading games.

The unique combination of these features has resulted in a new exciting game of skill and suspense.

Briefly, the principle of play is as follows;-
Inserted coin automatically starts flasher unit which flashes characters that are viewed on the panascope. At end of flash ball is played to obtain a high score. A pre-determined set of hi-score values will advance column lites accordingly. Column lites plus character combination on panascope determine total score register. Total score can also be earned regardless of character combination simply by hi-score value.

Coins must be used when total score and sub-total are equal.

OLD PLANTATION

SECTION I

SPECIFICATIONS

LENGTH.....55½" OVERALL
WIDTH.....24½" OVERALL
HEIGHT.....67 3/4" BACK CABINET
WEIGHT (UNCRATED).....270 LBS.
SHIPPING WEIGHT.....310 LBS.
OPERATING VOLTAGE.....105-125V. AC.
OPERATING CURRENT (MAX.).....1 TO 3 AMPS. (APPROX.
115 TO 350 WATTS)
OPERATING CURRENT (IDLE).....1.0 AMPS. (APPROX.
115 WATTS)
SCORE UNIT (MAX.).....999
COIN CHUTE.....COIN ACCEPTANCE
(5-10-25¢) OPTIONAL

OLD PLANTATION

SECTION I

1.2 ASSEMBLY AND SET UP

The game is packed in two separate cartons; one for back cabinet and one for the playfield cabinet. These two cartons are placed in a master carton to which is added a third small carton for packing the legs, leg levelers, and hardware for final assembly.

Be sure to remove "Shipping Blocks" before assembling.

They are plainly marked and are used to insure the safety of the playfield and playfield glass during transit.

After bolting the two cabinets together, be sure to use the leg levelers to guarantee proper playfield and slug reflector operation. Insert ball into playfield by pulling glass back through rear door opening.

Be sure all plugs and sockets are properly mated and securely anchored for good contact.

Check the game thoroughly for properly lit bulbs and general operation. A card is provided for the customer's use to list all comments and criticisms on the game as delivered. This is an aid to assure high standards of production, inspection and future improvements.

OLD PLANTATION

SECTION II OPERATION

A complete function of the circuitry contained in Old Plantation would be too elaborate to explain in detail. Refer to wiring diagram at all times. The function of each major component will be explained briefly as an aid to the wiring diagram.

2.1 VOLTAGES

All relay coils, step-up coils and flasher unit coils operate on 50 volts, A.C.

Flasher unit lamps are operated on 6 volts, A.C.

All motors are operated on 50 volts, A.C.

2.2 COIN MECHANISM

The coin mechanism in this game is of the single coin type. It will only accept coins of one denomination. A lockout coil is incorporated in the assembly to make the mechanism return coins in the event current is shut off, or when total score and sub-total are unequal. To assure trouble-free operation of coin mechanism, it should be cleaned periodically since coins handled by moist hands will sometimes leave a residue which tends to build up in the mechanism.

2.3 FLASHER UNITS

The flasher units flash and position the characters that appear on the panascope viewer. The on time for each flasher unit is determined by the length of time the sequence unit is allowed to make one complete cycle.

The coils on the flasher units are energized through contacts on the sequence unit.

OLD PLANTATION

SECTION II OPERATION

2.4 VARIATOR

The switch on the variator unit energizes the sequence solenoid when the sequence release arm is at rest in one of the mixing dwells on sequence cam. The irregular spaced dwells on the variator cam vary the time length of sequence cycle. The variator motor runs when game-on relay is energized.

2.5 COMMUTATOR

The commutator unit determines the amount of total score. Each scoring combination has its own section of rivets tied together. The commutator advances at a different rate dependent upon the column lit..

2.6 SEQUENCE

When the start relay is energized and the hi-score units are at zero, the sequence solenoid is energized which mechanically closes a switch to energize the motor relay, thereby actually starting the flash cycle. The sequence unit then travels through a series of starts and stops, a full 360 degrees, during which time it varies the "on time" of the flasher units to produce a mixing action.

OLD PLANTATION

SECTION II OPERATION

2.7 START RELAY

This relay starts the panascope play cycle when it is pulsed by the coin switch or button. It also resets the hi-score totalizer unit through the hi-score reset relay and resets the ball unit. This relay resets all units in preparation for a new game.

2.8 HOLD RELAY

This relay is energized the entire time power is turned on. It is initially energized by the impulse disc. When power is interrupted this relay actuates the impulse disc to reset the sub-total and total units.

2.9 MOTOR RELAY

This relay is energized by the sequence arm switch except during mixing dwell period. During this time it is kept energized by the sequence disc. It energizes all flasher motors.

3.0 GAME-ON RELAY

It is energized first by the ball unit disc and secondly by the ball rest switch.

Energizes variator motor during play cycle. Closes circuit to score motor to insure delivery of ball to shooting position. Closes circuit from multiple disc to win relay, to start registering "total score".

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SECTION II OPERATION

3.1 COMMUTATOR RESET RELAY

It is pulsed by the sequence unit disc at the beginning of the play cycle. It in turn pulses the control unit advance coil, the commutator reset coil and the multiple unit reset coil. It also pulses the play relay or the coin unit s.u. dependent upon condition of the even relay.

3.2 TOTAL SCORE RESET RELAY

Resets total and sub-total units through the pulsing of the impulse disc.

3.3 TOTAL SCORE ADVANCE RELAY

Advances total score unit through pulsing of impulse disc when win relay is energized. It pulses commutator advance relay when first column is lit.

3.4 PLAY RELAY

Energized by commutator reset relay when even relay is de-energized. It advances the sub-total units.

3.5 COMMUTATOR ADVANCE RELAY

Pulsed by impulse disc as dictated by multiple unit and in turn advances commutator unit.

3.6 HI-SCORE RESET RELAY

Pulsed by score motor disc to reset hi-score units when above zero.

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SECTION 11 OPERATION

3.7 5-COUNT RELAY

Energized when lit roll-over switch is made by ball. When energized it closes the circuit so that the score motor disc can pulse the hi-score impulse relay. It also cycles score motor. It falls off through the action of score cam #2.

3.8 WIN RELAY

Energized when scoring combination is achieved on panascope and at least first column has been lit by playfield. When energized it closes circuit to impulse solenoid so impulser can advance total score unit until commutator is "satisfied" and win relay falls off.

3.9 EVEN RELAY

This relay is energized when the scores of the sub-total and total score units are equalized. Energized, it allows hold relay to energize through the impulse disc. It also energized the coin lockout so a coin may be inserted for each new game and also transfers "press button" lite to "deposit coin" lite. When not energized it completes the circuit to the start relay through the replay button. Also to the play relay when the commutator reset relay is energized.

3.9(A) ZERO CONTROL RELAY

Energized with play relay and remains locked in until such time that coin is required. This relay sets the total and sub-total back to zero with initial coin.

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SECTION II OPERATION

4.0 HI-SCORE IMPULSE RELAY

Pulsed by the score motor disc, (through the energized 5-count relay), or by the bumper or roll-over switches. Advances the roll-over mix unit for each single impulse score registered. It also pulses the hi-score units. Also energizes the multiple relay at the pre-determined position of the 10-90 hi-score disc.

4.1 RED ARROW RELAYS

These relays provide an alternate, (or "wild") circuit for the Red Arrow characters when they appear in combination with other scoring characters.

4.2 THUMPER BUMPER RELAYS

Each thumper bumper has its own relay. This relay is activated by the bumper switch when contacted by the ball. It locks itself in to guarantee a full stroke for the bumper solenoid. The relay drops off through its own bumper "end of stroke" break switch.

4.3 MULTIPLE RELAY

This relay is energized through the hi-score impulse relay when the hi-score 10-90 unit advances to a pre-determined position, and is then locked in momentarily by its own switch until the 10-90 unit leaves the pre-determined position. It also pulses the multiple unit s.u. for each pre-determined position advance of the 10-90 unit.

OLD PLANTATION

SECTION II OPERATION

4.3 MULTIPLE RELAY CONT'D.

It also pulses the total score advance relay to register one point on total score for obtaining a pre-determined hi-score.

4.4 SCORE MOTOR UNIT

At beginning of play cycle motor is energized through the start relay. During this cycle it triggers the ball release. Motor also runs when the five count relay is energized, thereby pulsing the hi-score impulse relay, five times, through five rivets on scoring motor disc. Cam 2 breaks lock in to five count relay.

4.5 BALL UNIT

This unit acts as a control for one or two-ball play. It receives its first step-up pulse from the arch gate switch, and its second pulse from the hi-score impulse relay. It is reset through the start relay.

4.6 ROLL-OVER MIX UNIT

This unit provides the mixing action which determines a 5-count roll-over, and lights roll-over accordingly.

4.7 MULTIPLE UNIT

This unit advances progressively to light up the columns shown on the back glass. It also determines the impulse rate of the commutator unit.

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SECTION III MAINTENANCE

5.1 MAINTENANCE & LUBRICATION INSTRUCTIONS

Like any other piece of equipment, this machine requires maintenance and periodic lubrication. By following the instructions listed below, operating troubles will be greatly minimized.

1. A periodic check of the entire machine for any parts which may require slight adjustments.
2. A periodic check of female sockets by crimping slightly with fingers to insure a positive contact with male portion of same socket.
3. All relay and switch stacks may occasionally require tightening.
4. After tightening relay and switch stacks, all relay and switch contacts should be reinspected for proper contact and gap.

A minimum of 1/32 inch follow thru is required for proper relay and switch contact operation. If necessary to clean relay and switch contacts, a burnishing tool or crocus cloth may be used. UNDER NO CIRCUMSTANCES USE A FILE OF ANY TYPE TO CLEAN CONTACTS.

5. Fuse clips may occasionally be tightened to insure proper fuse contact.

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SECTION III MAINTENANCE

NOTE:-

Clutch spring tension adjustments should be made only after clutch leather washers are lubricated as per instructions under (Lubrication).

5.2 LUBRICATION

CAUTION: Over lubrication is sometimes more harmful than too little lubrication. All lubricants should be used sparingly for proper operation. Never under any circumstances use vaseline as a lubricant.

5.3 LUBRICATION INSTRUCTION

1. All contact discs should be cleaned periodically with a suitable solvent (carbon tetrachloride is considered excellent for this purpose.)
After contact discs are cleaned of all residue, a very light film of coin machine grease should be applied to contact disc. A tube is furnished with each game.
2. Shafts and levers of step-up units and all other levers and linkages should be sparingly lubricated with an oil of the three-in-one type.
3. Ratchets of step-up units should be lubricated slightly with coin machine grease.
4. Leather washers on units utilizing slip clutches should be soaked in neatsfoot oil as a lubricant.
5. All linkages should be lubricated with oil.

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SECTION III MAINTENANCE

CAUTION: Never lubricate a plunger or a solenoid. A periodic disassembly of solenoid and plunger, after which both units should be wiped clean is all that is required.

6. Contact wipers on step-up units and all other units utilizing wiper fingers should be occasionally checked for finger tension. The proper amount of tension can be noted if the disc is moved away from the wiper. This wiper should follow the disc for approximately $1/32$ inch before the wiper leaves the disc. On slightly warped discs, tension of fingers may be slightly increased. Discs that are extremely warped should be replaced.

NOTE: Too much wiper tension will cause unit to operate very sluggishly and fail to reset properly.

Too light tension will cause intermittent failure of some portion of circuit which it operates.

7. Units utilizing a slip clutch should be checked for clutch spring tension occasionally.
 - (a) A clutch spring tension that is too tight will cause a strain on the motor which will eventually become weak and cause failures.
 - (b) A clutch spring that is too loose will not allow fingers to rotate due to extreme slippage and will not function properly.

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SECTION IV
REPAIR PARTS LIST

WHEN ORDERING REPLACEMENT PARTS ALWAYS MENTION TYPE OF GAME,
SERIAL NUMBER, DESCRIPTION OF DEFECTIVE PART AND PART NUMBER.

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
<u>SOLENOIDS</u>		
TOTALIZER	20 OHM	1326-B4-19
ROLL-OVER MIX	10 OHM	1326-B4-3
BALL STEP-UP	13 OHM	1326-B4-18
BALL RESET	15 OHM	1326-B4-2
CONTROL UNIT STEP-UP	50 OHM	1326-B3-25
CONTROL UNIT RESET	50 OHM	1326-B3-25
MULTIPLE STEP-UP	10 OHM	1326-B4-3
MULTIPLE RESET	15 OHM	1326-B4-2
COMMUTATOR STEP-UP	6.0 OHM	1326-B4-52
COMMUTATOR RESET	6.0 OHM	1326-B4-47
SEQUENCE	44 OHM	1326-B4-50
IMPULSE	44 OHM	1326-B4-50
FRACTION	44 OHM	1326-B4-50
LEFT FLASHER	44 OHM	1326-B4-50
CENTER FLASHER	44 OHM	1326-B4-50
RIGHT FLASHER	44 OHM	1326-B4-50
COIN UNIT STEP-UP	10 OHM	1326-B4-3
COIN DIVIDER	110 OHM	1326-B3-24
THUMPER BUMPER	8.3 OHM	1326-B4-39
BALL RETURN	6.0 OHM	1326-B4-53
<u>FUSES</u>		
115V. CIRCUIT	7½ AMP.	118-K-110
50V. CIRCUIT	10 AMP.	118-K-106
6V. CIRCUIT	15 AMP.	118-K-107

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SECTION IV
REPAIR PARTS LIST

<u>RELAYS</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>COIL PT. NO.</u>
TOTAL SCORE ADV.	E-2787-A	50 OHM	1326-B3-14
COMMUTATOR ADV.	E-2916-A	50 OHM	1326-B3- B 14
LEFT ARROW #1	E-2754-A	100 OHM	1326-B3-16
LEFT ARROW #2	E-2754-A	100 OHM	1326-B3-16
CENTER ARROW #1	E-2754-A	100 OHM	1326-B3-16
CENTER ARROW #2	E-2754-A	100 OHM	1326-B3-16
RIGHT ARROW #1	E-2754-A	100 OHM	1326-B3-16
RIGHT ARROW #2	E-2881-A	100 OHM	1326-B3-16
WIN	E-2601-A	80 OHM	1326-B3-15
5-COUNT	E-2452-A	80 OHM	1326-B3-15
COMMUTATOR RESET	E-2732-A	80 OHM	1326-B3-15
HOLD	E-2934-A	100 OHM	1326-B3-16
GAME ON	E-2627-A	100 OHM	1326-B3-16
MOTOR	E-2931-A	80 OHM	1326-B3-15
START	E-2401-A	80 OHM	1326-B3-15
SET-UP (TILT)	E-2445-A	80 OHM	1326-B3-15
TRIP (TILT)	E-2434-A	80 OHM	1326-B3-15
MULTIPLE	E-2410-A	80 OHM	1326-B3-15
EVEN	E-2724-A	100 OHM	1326-B3-16
HI-SCORE IMP.	E-2787-A	50 OHM	1326-B3-14
TOT. SCORE RESET	E-2409-A	50 OHM	1326-B3-14
HI-SCORE RESET	E-2932-A	50 OHM	1326-B3-14
PLAY	E-2599-A	80 OHM	1326-B3-15
THUMPER BUMPER	E-2786-A	50 OHM	1326-B3-14
ZERO CONTROL	E-2653-A	100 OHM	1326-B3-16

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SECTION IV
REPAIR PARTS LIST

LAMPS

DISPLAY	#51
FLASHER	#44
TOTALIZER	#47

MOTORS

SEQUENCE & IMPULSE	20 RPM 50V.	E-2926-A
FRACTION & LEFT	20 RPM 50V.	E-2926-A
CENTER & RIGHT	20 RPM 50V.	E-2926-A
VARIATOR	4 RPM 50V.	E-2749-A
SCORE MOTOR	36 RPM 50V.	E-2719-A

COIN MECHANISM

5¢ COIN	} OPTIONAL AS REQUIRED
10¢ COIN	
25¢ COIN	

TRANSFORMER

POWER	PRI. 115V.	
	SEC. #1-50V.	TR-1003
	SEC. #2-6V.	