

#1016 BON VOYAGE

INSTALLATION AND GENERAL GAME OPERATION INSTRUCTIONS

Modified by xsvtoys. The updates and corrections in this document are not guaranteed to be correct, these are done to the best of my knowledge. Modifications are highlighted in red text.

Last updated: 08/25/2015

INSTALLATION

On all games there are certain items that should be checked after shipment. These are visual inspections which may avoid time consuming service work later. Minor troubles caused by abusive handling in shipment are unavoidable. Cable plugs and sockets may be loosened, switches (especially tilt switches) may go out of adjustment. Plumb bob tilt switch should always be adjusted after game is set on location and leg levelers are adjusted.

Visual inspections before plugging in line cord:

1. Check that all cable plugs are firmly seated in proper sockets.
2. Check that cables are clear of all moving parts and relays.
3. Check for any wires that may have become disconnected.
4. Check switches for loose solder or other foreign material that may have come loose in shipment and could cause shorting of contacts.
5. Check wires on relay coils for proper soldering, especially the bare (common) wire -connecting a row of relay coils. cold solder connections may not show up in factory inspection, but vibration in shipment may break contact.
6. Check that fuses are firmly seated and making good contact.
7. Check (manually) the stepping and resetting of all step up units. The wiper action should not be sluggish.
8. Check transformer for any foreign material shorting across wiring lugs.
9. Check wiring of transformer to correspond to location voltage. (Transformer wiring card in front cabinet).

Before Line cord is plugged in:

Check all plugs and sockets and dress cables:

- (A) Plugs in correct sockets.
- (B) Plugs securely seated in sockets.
- (C) Dress cables away from relays.

Check adjustment of the three (normally open) tilt switches:

- (A) Panel tilt on bottom of playfield panel.
- (B) Plumb-bob tilt on left side of cabinet near front door.
- (C) Ball tilt above plumb-bob tilt.

Insert one of the two balls into ball tilt assembly and adjust bracket so ball will roll over switch blade if front of cabinet is raised.

Check adjustment of the kick-off and slam switches:

Check adjustment of the normally open kick-off switch on cabinet mounting board. Check adjustment of the normally open slam switch on front door. These switches energize the delay relay.

General Game Operation

Place ball onto playfield by out hole.

Plug in line cord.

Coin game:

If the coin should be rejected, move on-off master switch at the bottom right front corner of cabinet to "on" position, then coin game. The coin lock out device rejects all coins when power (master switch) is off.

1A. If the coin is inserted in the 1st (nickel) coin chute and the game is set for 1 play-5¢, it will energize the coin relay. If game is set for 1 play-10¢, the first coin-inserted will advance the 2 coin unit, then the second coin inserted will energize the coin relay thru the 2-coin unit switch.

(See 1st coin chute adjustment plug positions on game adjustment sheet).

1B. If the coin is inserted in the 2nd (dime) coin chute and the game is set for 1 play-10¢, it will energize the coin relay. If game is set for 2-plays-10¢, it will energize the 2nd coin chute relay and the 2nd coin chute relay will advance the credit unit (2 or more steps) thru the coin credit circuit. (See 2nd coin chute adjustment plug positions on game adjustments sheet. Also the 3rd coin chute adjustment plug for the number of credits.)

1C. If the coin is inserted in the 3rd (quarter) coin chute and the game is set for 2-3-4-5 or 6 plays-25¢, it will energize the 3rd coin chute relay and the 3rd coin chute relay will advance the credit unit 2-3-4-5-6 steps thru the coin credit circuit. (See 3rd coin chute adjustment plug positions on game adjustments sheet).

1D. When the credit unit has been advanced from the 2nd or 3rd coin chute, (as described in sections 1B and 1C) the front door credit button switch will energize the credit relay and then the credit relay will energize coin relay.

2A. The coin relay, when energized by any of the ways described, (in sections 1A thru 1D) will stay energized thru its own hold in switch and normally closed #8 score motor switch.

2B. The coin relay will energize the lock relay which stays energized thru its own hold in switch and a normally closed switch on the delay relay.

2C. The coin relay will energize the reset relay which will stay energized thru its own switch until all drum unit zero switches are open and #8 score motor cam switch is open. The score reset relay will pulse thru #2 score motor cam switch as long as the reset relay is energized. The score reset relay provides the pulses to advance the drum units until the individual drum unit reads zero. The reset relay also operates the score motor.

2D. The coin relay thru a normally closed #1 score motor cam switch will latch the game relay if the ball count unit is in index position or it will trip the game relay if the ball count unit is not in index position. If the game relay is tripped, it will lock in the coin relay and thru the combination of the two relays and the #2 score motor cam switch, they will reset the ball count unit to index position. With the ball count unit in zero position, the coin relay will latch the game relay when the score motor is back in index position. The coin relay is still locked in thru the #8 score motor cam switch. When the game relay is latched and the coin relay is energized, the ball count unit will advance twice for a 3-ball game thru #4 and #5 score motor cam switches or four steps for a 5-ball game thru #4 and #9 score motor cam switches. (#5 score motor cam pulse is cancelled out by the #9 score motor cam switch).

2E. If the game is adjusted to register game over when the game is tilted, the coin relay will latch the tilt relay thru the #3 score motor cam switch.

2F. A coin relay switch thru a normally open #3 score motor switch will advance the total play meter; if a credit was used to start the game, it will reset the credit unit one step.

3A. A ball on the out hole switch will energize the out hole relay thru a normally closed #1 score motor switch; and it will stay energized thru its own hold in switch and normally closed #10 score motor switch.

3B. The out hole relay will operate the score motor and then energize the out hole kicker solenoid thru a normally open #7 score motor switch. The 1st ball is kicked thru the ball trough to the shooter alley and the game is now ready to play.

3C. This game has an add-a-ball circuit which is described under heading Add-a-Ball scoring. This game also has a tilt adjustment for ball-to-ball tilt or game over tilt.

Sequence of Operation

1A. When a ball is played, the ball index relay will be energized by the 10 point relay, 100 point relay or 1000 point relay, and it will stay energized thru its own hold in switch, normally closed out hole relay switch and normally closed #6 score motor switch.

1B. When the ball returns to the out hole, the bonus relay is energized thru a normally closed #1 score motor switch, and it stays energized thru its own hold in switch and a normally closed #3 score motor switch on the out hole relay. At motor position #8, the bonus relay pulls in the out hole relay. The motor continues to run due to switches on both relays until motor switch position #3 is reached the second time. The normally closed switch on the out hole relay is now open and the bonus relay drops out.

1C. The out hole relay will operate the score motor and thru a ball index relay switch, a normally closed single extra ball relay switch and a normally open #5 score motor switch, it will reset the ball count unit one step. Another out hole relay switch thru a normally open #7 score motor switch will operate the out hole kicker solenoid to return ball to the shooter alley.

1D. When 1 ball to play lite is lit, and the ball is played and returned to the out hole, the game over relay is tripped thru a series of switches on the out hole relay, ball index relay, ball count unit zero and a normally open #4 score motor switch.

Add-A-Ball Scoring

1A. If the game was completed before starting a new game:

The game over trip relay is tripped.

The ball count unit is in zero position.

The game relay is tripped.

1B. A coin relay switch will latch the game relay thru a normally closed #1 score motor switch. Another coin relay switch will step up the ball count unit, 2 steps for 3 ball game or 4 steps for 5 ball game thru score motor switches.

1C. Like regular replay game, the ball count unit is reset one step at the end of each ball played and extra balls are registered by stepping up the ball count unit. The game starts with either 3 balls to play or 5 balls to play. When an add-a-ball has been earned, the ball count unit steps up, adding another ball to play, up to 9 maximum. The game ends when 1 ball to play is lit and the ball in play goes into the out hole.

1D. The first ball played will trip the game relay.

2A. If the game is started before the game is completed:

The ball count unit is off the zero position.

The game relay may or may not be tripped.

2B. A coin relay switch will trip the game relay thru a normally closed #1 score motor switch and a ball count unit zero switch. Another coin relay switch will trip the game over relay thru a normally closed #1 score motor switch and resets the ball count unit thru a normally open #2 score motor switch. When the ball count unit has been reset to zero position, the game relay is latched thru a normally closed #1 score motor switch. The coin relay remains energized for another half cycle during which time the ball count unit is stepped up as described under 1C.

Feature Operation and Scoring

Right Alley Feature:

Ball in right lane going into shooter lane scores 3000 points.

Thumper Bumper Feature:

Hitting upper side rebound rubber lites left thumper bumper for 100 points.

Hitting lower side rebound rubber lites right thumper bumper for 100 points.

Spinner Feature:

Whenever ball flips spinner, located in the center of the playfield, it will score 100 points and advance spinner lite one position for each revolution. wherever spin lite stops, indicates score for eject hole.

Bonus Score Feature:

Bonus score is added to the players total score when bonus relay is energized by a ball in the out hole The player receives 1000 points for each letter lit in "BONVO". The out hole relay then comes in and scores 1000 for each letter hit in "YAGE".

Bon Voyage Score Feature:

Located at lower section of playfield, these lights (B thru E) are lit by balls rolling over rollovers and hitting targets, and by hitting target in right lane when lit. Ball in out hole scores bonus according to the number of lites lit. When all letters are lit and captive ball in left lane hits lit special target special will be scored which may be a credit, and add-a-ball or 5000 points (adjustable thru special feature adjustment plug). The game will award only one special, and sequence will be reset ready to be completed again. The special feature does not affect awards from hi score or number match features.

When a game is adjusted for 3 balls per game, lighting "V" in "VOYAGE" will also light "Y" and lighting "A" will also light "G" and vice-versa.

GAME ADJUSTMENTS

Hi-Score adjustment Plug:

Located on back box lite insert. This plug provides a wide range of coverage at which hi score credits or add-a-ball can be scored. (See score adjustment card in back box for plug positions).

~~Balls Per Game Adjustment Plug: this should say:~~ Match Feature Adjustment Plug

Located on back box lite insert. This plug provides positions to turn match feature "on" or "off".

~~1st-2nd~~ Coin Chute Adjustment Plug:

Located on the 2 coin unit, on the front cabinet mounting board. This plug provides positions to give 1 play for 1 coin or 2 plays for 1 coin thru the 2nd (dime) coin chute. Note: when this plug is set for 2 plays 1 coin, the brown-white (male plug) wire on 3rd coin chute adjustment must be in position 2.

3rd Coin Chute Adjustment Plug:

Located on the front cabinet mounting board. This plug provides positions to give 2 to 6 plays for 1 coin thru the 3rd (quarter) coin chute, orange-white (male plug) wire. See 2nd coin chute note above for use of brown-white (male plug) wire.

Hi-Score Special Feature Adjustment Plug:

Located on front cabinet mounting board. This plug provides positions to award credits, add-a-ball or 5000 points for special award.

Tilt Adjustment:

Located on the front cabinet mounting board. This plug provides for ball-to-ball tilt or game tilt adjustment.

When the ball goes into the out hole, the game will add the bonus score lit to the total score of the player up.

Ball Per Game Adjustment Plug: (Missing from original document)

Located on front cabinet mounting board. Changes from 3 balls per game to 5 balls per game.

3-5 Ball Adjustment Plug: (Missing from original document)

Located on bottom of playfield. Affects lighting of BON VOYAGE targets. When set for 3 balls per game, lighting an "O" will light also light the opposite "O", lighting "V" will also light "Y" and vice-versa, and lighting "A" will also light "G" and vice-versa.

Spinner Feature:

Whenever the ball flips the spinner, located in the center of the playfield, it will score 100 points and advance the spinner lite one position for each revolution. ~~When the spin lite completes one cycle, it will advance the bonus score lite one thousand points. This part does not appear to be accurate.~~

~~Yellow and Green Lanes Feature:~~

~~When ball in play strikes a captive ball in either left or right alley, the captive ball is kicked over the roll overs and at the target in the alley. The roll overs score 1,000 points, when the lane lite is lit, they advance the bonus score lite. The targets when hit, score 1,000 points and when the target lite is lit it awards a "special". The special is adjustable for a credit or an extra ball. The yellow lane is lit by the top left lane roll over, the yellow mushroom bumper or a ball in the top eject hole. These lane lites remain lit for the duration of the play of the ball.~~

~~The lanes target lites are lit when the bonus score lite of 15,000 is lit.~~

~~Top lanes feature:~~

~~Top left lane roll over:~~

~~—— (1) Lites yellow lane lite.~~

~~—— (2) Lites yellow thumper bumper lite.~~

~~—— (3) Scores 500 points.~~

The above red text does not belong here, allegedly it goes with "Champ".

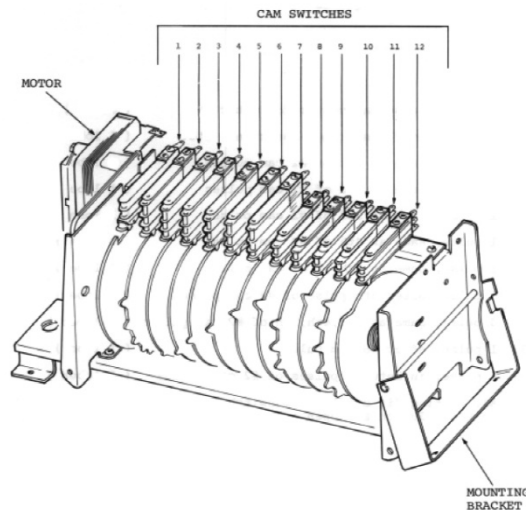
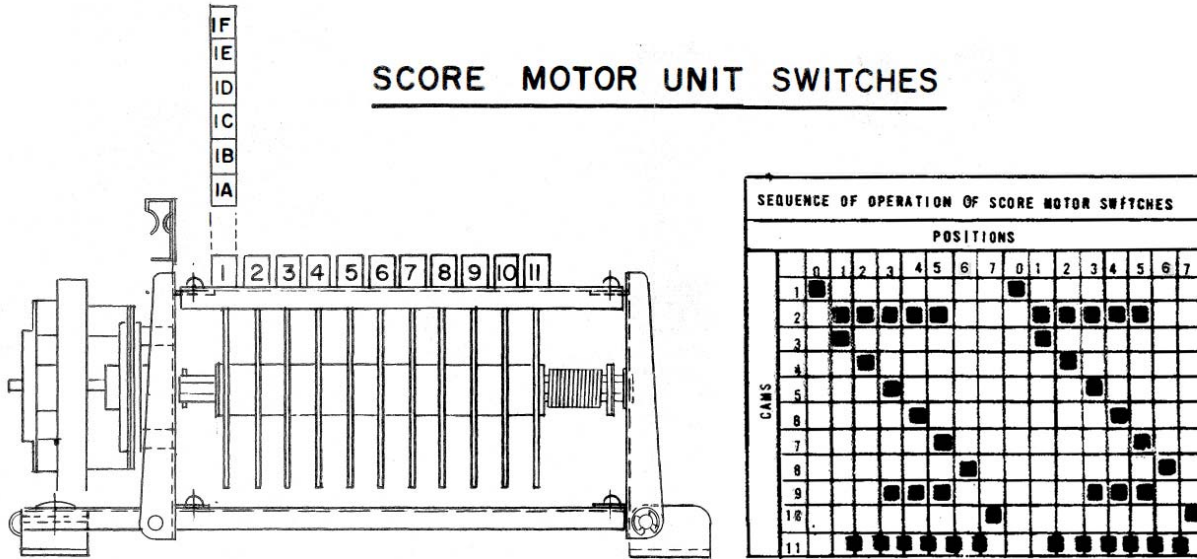
#1016 "BON VOYAGE"

Parts List

MISCELLANEOUS	PART NO.	ASSEMBLY COILS	PART NO.
Transformer	E-122-95	Coin Lock Out	FC-33-2600
Score Motor (Dom.)	E-119-354	Knocker	C-27-1000
Score Motor (Export)	E-119-411	Chimes (3)	CC-31-2000
Total Play Meter	E-32-1700	Thumper-bumpers (2)	A-25-1000
		Top Hole Eject	A-25-1050
RELAY COILS		Outhole Kicker	A-25-950
Delay	G-31-1600	Sling-shots (3)	A-26-1200
Coin	G-31-2000	Flippers (2)	AF-25-600/28-800
2nd Coin Chute	G-31-2000		
3rd Coin Chute	G-31-2000	UNIT COILS	
Credit	G-31-2000	2 Coin (Step Up)	CD-29-1600
Lock	G-33-2800	Credit (Step Up)	B-26-1100
Reset	G-31-2000	Credit (Reset)	C-28-1100
Game Over (Latch)	G-31-2000	Score Drums (4) Step Up	CD-29-1600
Game Over (Trip)	G-31-2000	00-90 Step Up	CD-29-1600
Score Reset	G-30-1500	Call Count (Step Up)	B-26-1100
Tilt (Latch)	G-31-2000	Ball Count (Reset)	C-28-1100
100,000 (Latch)	G-31-2000	Spinner	CD-29-1600
100,000 (Trip)	G-31-2000		
Game (Latch)	G-31-2000	UNIT DISC	
Game (Trip)	G-31-2000	Ball Count	W-1042-246
Top Hole	G-31-2000	00-90 (Inside)	W-999-28
Bonus Score	G-31-2000	00-90 (Outside)	W-999-29
Outhole	G-31-2000		
Ball Index	G-32-2500	UNITS WIPERS	
1,000 Point	G-31-2000	Ball Count	AS-1046-756
100 Point	G-31-2000	00-90 (Inside)	A-1618-3A
10 Point	G-31-2000	00-90 (Outside)	A-1918-4A
500 Point	G-31-2000		
3000 Point	G-31-2000		
Spinner	G-30-1500		
Special	G-31-2000		
Thumper-Bumpers (2)	G-31-2000		
Spot	G-31-2000		
"AGE" 2	G-31-2000		
"BON"	G-31-2000		
"VOY"	G-31-2000		
Trip Relays (10)	D-28-500		

This section has been completely replaced, the original description is incomplete and has errors.

SCORE MOTOR UNIT SWITCHES



**SCORE MOTOR: 26 RPM, Normal cycle is 1/2 revolution.
Provides Program Sequence, Pulsing, & Timing.**

CAM	FUNCTION	1/2 CYCLE
1	Index cam also carry-over for motor run	Dwell
2	5 pulse cam for scoring, resetting, etc.	5 Lobes
3	1 pulse, same as 1st of #2 cam pulses	1 Lobe
4	1 pulse, same as 2nd of #2 cam pulses	1 Lobe
5	1 pulse, same as 3rd of #2 cam pulses	1 Lobe
6	1 pulse, same as 4th of #2 cam pulses	1 Lobe
7	1 pulse, same as 5th of #2 cam pulses	1 Lobe
8	1 pulse, after 5th pulse of #2 cam pulses	1 Lobe
9	3 pulse, same as 3rd, 4th, 5th of #2 cam pulses	3 Lobes
10	1 pulse, after #8 cam pulse	1 Lobe
11	6 pulse, in between pulses of #2 cam pulses	6 Lobes
12	cam switch is closed on 1/2 revolution and open on other (if used)	Alternating

BON VOYAGE SCORE MOTOR SWITCHES

Switch	Default	Schematic	Wire Colors	Function
1A	NC	B30	Y-B, G-R	Trips game over relay thru coin relay
1B	NC	C9	GRAY-R, Y	Opens circuit to lockout coil when motor runs
1C	NC	J11	Y, BLU-Y	Stops scoring of 1000 point and B, O, N rollover when motor runs
1D	NC	D21	BLU-R, O-N	Latches or trips game relay before motor runs
1E	NC	J20	Y, R-B, Y-BR	Opens outhole relay circuit while motor runs, energizes #1 Bonus relay
1F	NC	D8	B-W, W, R-Y	Opens circuit to credit button and runs motor
2A	NO	E11	GRAY, O-R	Pulses score reset relay
2B	NO	E26	G-B, W-G	When coin relay is energized, resets ball count unit
2C	NO	J11	Y, BR	Supplies 5 counts for 500 point relay and spot/BON/VOY/AGE relays (5000)
3A	NO	D28	W-BLU, BLU-O	Steps credit unit on possible match at end of game
3B	NO	D20	GRAY-R, O-B	Energizes total play meter through coin relay switch
3C	NO	G5	W, W-B	With #4F switch scores 2000 for hole relay
3D	NO	D25	R-W, W-B	Depending on adjustment plug steps ball count unit on special
3E	NO	J2	BR-Y, Y	Scores 1000 bonus when "B" is tripped
3F	NO	D25	W-R, BR-R	Depending on adjustment plug steps credit unit on special
4A	NO	C30	BLU-G, G-R	Trips game over relay at end of game
4B	NO	E26	W-B, O	Through the coin and game relays add the ball count unit
4C	NO	J2	Y-B, Y	Scores 1000 bonus when "O" is tripped
4D	NO	J2	Y-R, Y	Scores 1000 bonus when "Y" is tripped
4E	NO	G6	R-G, W-B	With #9C motor switch scores 4000 points for hole relay
4F	NO	G6	W, B-R	With #3C switch scores 2000 for hole relay
5A	NO	E26	G-B, BLU-W	Resets ball count unit when outhole relay is energized
5B	NO	E26	W-B, O	Through the coin and game relays add the ball count unit
5C	NO	H2	O-G, Y	Scores 1000 bonus when "N" is tripped
5D	NO	H2	O-R, Y	Scores 1000 bonus when "A" is tripped
5E	NC	C7	W-R, Y-R	2 count adjustment for coin chute relays
6A	NO	G2	BLU-R, Y	Scores 1000 bonus when "V" is tripped
6B	NO	G2	BLU-Y, Y	Scores 1000 bonus when "G" is tripped
6C	NC	C7	G-W, Y-R	3 count adjustment for coin chute relays
7A	NO	B19	R-B, Y	Energizes hole kickers
7B	NO	G2	GRAY-Y, Y	Scores 1000 bonus when "O" is tripped
7C	NO	G2	R-W, Y	Scores 1000 bonus when "E" is tripped
7D	NC	C6	G-Y, Y-R	4 count adjustment for coin chute relays
8A	NO	H19	W-G, W-BR	Energizes outhole relay thru bonus relay
8B	NC	D11	G-B, Y	Locks in reset relay until motor is near end of cycle
8C	NC	F19	BLU-Y, Y	Lock in for coin relay
8D	NC	B4	O-B, Y	Lock in for hole relay
8E	NC	J22	O-R, G-W	Locks in ball index relay
8F	NC	C6	BLU-W, Y-R	5 count adjustment for coin chute relays
9A	NO	D27	W-B, O-G	Add 3 more to ball count unit thru coin relay and balls per game
9B	NO	G5	BLU-R, W-B	Scores 3000 points for hole relay
9C	NO	G6	R-G, W-B	With #4E motor switch scores 4000 points for hole relay
9D	NO	H5	G-W, B-R	Scores 3000 points when 3000 point relay is energized
10A	NO	G21	GRAY-B, GRAY-Y	Energizes #2 Bonus relay
10B	NC	J4	Y, GRAY-W	500 point and 3000 point relay lock in
10C	NC	B6	Y-R, Y	Safety lock for coin chute relays and 6 count adjustments
10D	NC	J19	Y, B-W	Lock in for outhole relay
11A	NO	B29	BR, Y	Make available 6 counts through coin chute relays to credit unit

TME DELAY CIRCUIT

Purpose of the time delay circuit is to prevent unnecessary abuse of the machine it is installed in. The time delay relay is energized anytime one of the slam switches are made to contact. There are two factory installed slam switches. one on the front door and one on the mechanism mounting board. (any number of slam switches could be installed by the operator, to meet his individual requirement). The switches should be adjusted to have approximately 1/16" gap between the contacts. The weighted blade should be adjusted to attain the desired sensitivity. Decreasing the gap between contacts will make switch more sensitive. Opening the gap will reduce sensitivity. The total time the delay relay is energized. can be varied by changing the #455 lite bulb mounted on the delay relay frame. If unable to get a short enough time of delay, get a Westinghouse #455 bulb; these units are considerably faster. If still unable to bring the time down, check the location voltage. It should not be under 49.5 V.A.C. on the transformer secondary.