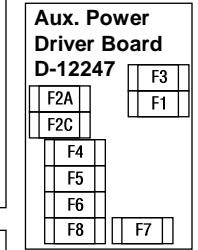
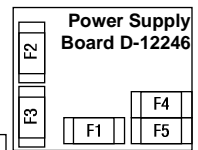
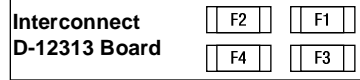
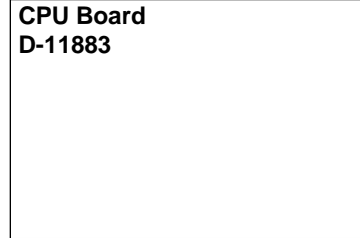
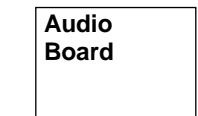


Dr. Dude and his Excellent Ray (16-2016)

FUSE LIST

| Power Supply Board D-12246       |                               |                  |
|----------------------------------|-------------------------------|------------------|
| F1                               | 100V Display Power Input      | 3/8A, 250V, SB   |
| F2                               | +100V Display Power Output    | 1/8A, 250V, SB   |
| F3                               | -100V Display Power Output    | 1/8A, 250V, SB   |
| F4, F5                           | 5V & 12V Logic Power Input    | 7A, 250V, SB     |
| Aux. Power Driver Board D-12247  |                               |                  |
| F1                               | +25V Special Solenoids        | 2-1/2A, 250V, SB |
| F2A                              | +25V A-Line Solenoids         | 2-1/2A, 250V, SB |
| F2C                              | +25V C-Line Solenoids         | 5A, 250V, SB     |
| F3                               | +25V Controlled Solenoids     | 2-1/2A, 250V, SB |
| F4                               | +50V Solenoids                | 2-1/2A, 250V, SB |
| F5                               | Right Flippers                | 2A, 250V, SB     |
| F6                               | Left Flippers                 | 2A, 250V, SB     |
| F7                               | 50Vac Input                   | 4A, 250V, SB     |
| F8                               | 25Vac Input                   | 7A, 250V, SB     |
| Interconnect Board D-12313-50007 |                               |                  |
| F1                               | General Illumination (Brown)  | 5A, 250V, SB     |
| F2                               | General Illumination (Yellow) | 5A, 250V, SB     |
| F3                               | General Illumination (Green)  | 5A, 250V, SB     |
| F4                               | General Illumination (Violet) | 5A, 250V, SB     |
| BackBox Fuse                     |                               |                  |
| F1                               | +18V Controlled Lamps         | 8A, 250V, N.B.   |
| LINE FILTER                      |                               |                  |
| Foreign                          |                               | 4A, 250V, SB     |
| Domestic                         |                               | 8A, 250V, SB     |



SOLENOID/FLASHER TABLE

| Sol No.          | Function                                | Solenoid Type | Wire 1 Color | Connections      |                     | Driver Transtr | Solenoid Part Number Flashlamp Type |        |
|------------------|---|---------------|--------------|------------------|---------------------|----------------|-------------------------------------|--------|
|                  |   |               |              | CPU Brd          | Playfield / Cabinet |                | Playfield                           | Insert |
| 01A <sup>3</sup> | Outhole                                 | Switched      | Vio-Brn      | 1P11-1 (Gry-Brn) | 5J1-9: 5J4-9 (A)    | Q33            | AE-23-800                           |        |
| 01C <sup>3</sup> | Mixer Heart flasher                     | Switched      | Blk-Brn      |                  | 5J5-9 (C)           |                | #89 / #906                          |        |
| 02A <sup>3</sup> | Shooter lane feeder                     | Switched      | Vio-Red      | 1P11-3 (Gry-Red) | 5J1-7: 5J4-8 (A)    | Q25            | SM-1-26-600                         |        |
| 02C <sup>3</sup> | Mixer Gab flasher                       | Switched      | Blk-Red      |                  | 5J5-8 (C)           |                | #89 / #906                          |        |
| 03A <sup>3</sup> | Top left popper                         | Switched      | Vio-Orn      | 1P11-4 (Gry-Orn) | 5J1-6: 5J4-7 (A)    | Q32            | AE-26-1200                          |        |
| 03C <sup>3</sup> | Mixer Magnet flasher                    | Switched      | Blk-Orn      |                  | 5J5-7 (C)           |                | #89 / #906                          |        |
| 04A <sup>3</sup> | Middle right popper                     | Switched      | Vio-Yel      | 1P11-5 (Gry-Yel) | 5J1-5: 5J4-6 (A)    | Q24            | AE-23-800                           |        |
| 04C <sup>3</sup> | Magnetic flasher                        | Switched      | Blk-Yel      |                  | 5J5-5 (C)           |                | #89 / #906                          |        |
| 05A <sup>3</sup> | Not used                                | Switched      | Vio-Grn      | 1P11-6 (Gry-Grn) | 5J1-4: 5J4-5 (A)    | Q31            |                                     |        |
| 05C <sup>3</sup> | Gab flasher                             | Switched      | Blk-Grn      |                  | 5J5-4 (C)           |                | #89 / #906                          |        |
| 06A <sup>3</sup> | Knocker                                 | Switched      | Vio-Blu      | 1P11-7 (Gry-Blu) | 5J1-3: 5J4-4 (A)    | Q23            | AE-23-800                           |        |
| 06C <sup>3</sup> | Heart flasher                           | Switched      | Blk-Blu      |                  | 5J5-3 (C)           |                | #89 / #906                          |        |
| 07A <sup>3</sup> | Right drop target                       | Switched      | Vio-Blk      | 1P11-8 (Gry-Vio) | 5J1-2: 5J4-2 (A)    | Q30            | AE-23-800                           |        |
| 07C <sup>3</sup> | Drop target flasher                     | Switched      | Blk-Vio      |                  | 5J5-2 (C)           |                | #89                                 |        |
| 08A <sup>3</sup> | Not used                                | Switched      | Vio-Gry      | 1P11-9 (Gry-Blk) | 5J1-1: 5J4-1 (A)    | Q22            |                                     |        |
| 08C <sup>3</sup> | Raygun flasher                          | Switched      | Blk-Gry      |                  | 5J5-1 (C)           |                | #89                                 |        |
| 09               | Not used                                | Controlled    | Brn-Blk      | 1P12-1           | 5J2-9: 5J6-9: 2J4-9 | Q17            |                                     |        |
| 10               | Playfield G.I. relay                    | Controlled    | Brn-Red      | 1P12-2           | 5J2-8: 5J6-8: 2J4-5 | Q9             | 5580-09555-01 <sup>4a</sup>         |        |
| 11               | Insert middle flasher                   | Controlled    | Brn-Orn      | 1P12-4           | 5J2-6: 5J6-7: 2J4-6 | Q16            | #89 / #906                          |        |
| 12               | A/C select relay                        | Controlled    | Brn-Yel      | 1P12-5           | 5J2-5               | Q8             | 5580-09555-01 <sup>5</sup>          |        |
| 13               | Magnet                                  | Controlled    | Brn-Grn      | 1P12-6           | 5J2-4: 5J6-5        | Q15            | AE-26-1200                          |        |
| 14               | Big Shot                                | Controlled    | Brn-Blu      | 1P12-7           | 5J2-3: 5J6-3        | Q7             | AE-23-800                           |        |
| 15               | Big Shot flasher                        | Controlled    | Brn-Vio      | 1P12-8           | 5J2-2: 5J6-2        | Q14            | #89                                 |        |
| 16               | Mixmaster Motor                         | Controlled    | Brn-Gry      | 1P12-9           | 5J2-1: 5J6-1        | Q6             |                                     |        |
| 17               | Left jumper bumper                      | Special #1    | Blu-Brn      | 1P19-7           | 5J3-7: 5J7-7        | Q75            | AE-23-800                           |        |
| 18               | Left slingshot                          | Special #2    | Blu-Red      | 1P19-4           | 5J3-6: 5J7-6        | Q71            | AE-26-1200                          |        |
| 19               | Right jumper bumper                     | Special #3    | Blu-Orn      | 1P19-3           | 5J3-3: 5J7-3        | Q73            | AE-23-800                           |        |
| 20               | Right slingshot                         | Special #4    | Blu-Yel      | 1P19-6           | 5J3-4: 5J7-5        | Q69            | AE-26-1200                          |        |
| 21               | Bottom jumper bumper                    | Special #5    | Blu-Grn      | 1P19-8           | 5J3-2: 5J7-2        | Q77            | AE-23-800                           |        |
| 22               | Not Used                                | Special #6    | Blu-Blk      | 1P19-9           | 5J3-1: 5J7-1        | Q79            |                                     |        |
| Flipper Circuits |   |               |              |                  |                     |                |                                     |        |
|                  | Lower right flipper                     | Flipper       | Orn-Vio      | 1P19-1           | 2J5-5: 2P10-7       |                | FL11630/50VDC                       |        |
|                  | Lower right flipper switch <sup>2</sup> | Switch        | Blu-Vio      |                  | 2J10-1: 2P8-15      |                |                                     |        |
|                  | Lower left flipper                      | Flipper       | Orn-Gry      | 1P19-2           | 2J5-4: 2P10-8       |                | FL11630/50VDC                       |        |
|                  | Lower left flipper switch <sup>2</sup>  | Switch        | Blu-Gry      |                  | 2J10-2: 2P8-14      |                |                                     |        |
|                  | Upper right flipper                     | Flipper       |              |                  |                     |                |                                     |        |
|                  | Upper left flipper                      | Flipper       |              |                  |                     |                |                                     |        |

Notes:  
 1. Wire colors, except flipper Orn-Vio and Orn-Gry, are ground connections (to coil terminal with unbanded end of diode). Flipper Org-Vio and Orn-Gry wires connect from CPU Board to flipper button switch on cabinet.  
 2. Flipper connections are from flipper button switch to flipper coil.  
 3. "A" circuits are pulsed, when Sol. 12 is de-energized; "C" circuits are pulsed, with Sol. 12 energized. Wire colors in brackets are those from respective A and C terminals corresponding to the J1-terminal connection listed for the Aux. Power Driver Board, which controls the device pulsing by Sol. 12.  
 4. Relay is mounted on Relay Board: (4a) p/n C-11998-1: (4b) C-11902-1.  
 5. Relay is mounted on Aux. Power Driver Board, D-12247, in the backbox.

LAMP MATRIX

| Column                 | Red ← Yellow (B+) →      |                         |                           |                          |                          |                                   |                           |                         |
|------------------------|--------------------------|-------------------------|---------------------------|--------------------------|--------------------------|-----------------------------------|---------------------------|-------------------------|
|                        | 1 Yellow-Brown 1J7-1 Q66 | 2 Yellow-Red 1J7-2 Q64  | 3 Yellow-Orange 1J7-3 Q62 | 4 Yellow-Black 1J7-4 Q60 | 5 Yellow-Green 1J7-6 Q58 | 6 Yellow-Blue 1J7-7 Q56           | 7 Yellow-Violet 1J7-8 Q54 | 8 Yellow-Grey 1J7-9 Q52 |
| 1 Red-Brown 1J6-1 Q80  | Jackpot 1 Million        | I Test 25K              | Raygun's Lamp 1           | Reflex X                 | Mix Master Heart         | Right Drop Target Hot Score       | Magnetic R.e.f.i.e.x. 3   | Jackpot Lit             |
| 2 Red-Black 1J6-2 Q81  | Jackpot 2 Million        | I Test 50K              | Raygun's Lamp 2           | Reflex E                 | Mix Master Mag.          | Right Drop Target Lite Million    | Magnetic 5K               | Million                 |
| 3 Red-Orange 1J6-3 Q82 | Jackpot 3 Million        | I Test 75K              | Raygun's Lamp 3           | Reflex L                 | Mix Master Gab           | Right Drop Target Double Jackpot  | Magnetic 25K              | GaZillion               |
| 4 Red-Yellow 1J6-5 Q83 | Jackpot 4 Million        | I Test 100K             | Raygun's Lamp 4           | Reflex F                 | Magnetic Award           | Right Drop Target Lite Extra Ball | Magnetic 50K              | Super Dude (Top)        |
| 5 Red-Green 1J6-6 Q84  | Jackpot 5 Million        | Raygun's Special        | Raygun's Lamp 5           | Reflex E                 | Heart Award              | Right Drop Target Bonus Boost     | Gab R.e.f.i.e.x. 2        | Major Dude              |
| 6 Red-Blue 1J6-7 Q85   | Jumper Value 1K          | Raygun's Extra Ball     | 2X                        | Reflex R                 | Gab Award                | Heart 5K                          | Gab 5K                    | Cool Dude               |
| 7 Red-Violet 1J6-8 Q86 | Jumper Value 2.5K        | Raygun's R.e.f.i.e.x. 1 | 4X                        | Big Shot                 | Shoot Again              | Heart 25K                         | Gab 25K                   | Party Dude              |
| 8 Red-Grey 1J6-9 Q87   | Jumper Value 5K          | Bag of Tricks           | 6X                        | Playfield 2X             | Left/Right Outlane       | Heart 50K                         | Gab 50K                   | Plain Dude (Bottom)     |

SWITCH MATRIX

| Column                | White → Green ←         |                       |                              |                          |                         |                         |                          |                        |
|-----------------------|-------------------------|-----------------------|------------------------------|--------------------------|-------------------------|-------------------------|--------------------------|------------------------|
|                       | 1 Green-Brown 1J8-1 Q45 | 2 Green-Red 1J8-2 Q49 | 3 Green-Orange 1J8-3 Q44     | 4 Green-Yellow 1J8-4 Q48 | 5 Green-Black 1J8-5 Q43 | 6 Green-Blue 1J8-7 Q47  | 7 Green-Violet 1J8-8 Q42 | 8 Green-Grey 1J8-9 Q46 |
| 1 White-Brown 1J10-9  | Plump Bob Tilt          | Shooter Lane          | Left Outlane                 | Reflex X                 | Mixer Gab Top           | Mixer Magnet Top        | I Test Target            | Right Flipper          |
| 2 White-Red 1J10-8    | A/C Relay C-Side        | Outhole               | Right Outlane                | Reflex E                 | Mixer Gab Middle        | Mixer Magnet Middle     | Magnet Target            | Left Flipper           |
| 3 White-Orange 1J10-7 | Start Button            | Ball Trough #1        | Right Return Lane            | Reflex L                 | Mixer Gab Bottom        | Mixer Magnet Right      | Top Left Popper          | Right Loop             |
| 4 White-Yellow 1J10-6 | Right Coin Switch       | Ball Trough #2        | Left Return Lane             | Reflex F                 | Mixer Heart Left        | Not Used                | Left Jet Bumper          | Not Used               |
| 5 White-Green 1J10-5  | Center Coin Switch      | Ball Trough #3        | Right Drop Target 1 (Top)    | Reflex E                 | Mixer Heart Middle      | Not Used                | Right Jet Bumper         | Not Used               |
| 6 White-Blue 1J10-3   | Left Coin Switch        | Heart Target          | Right Drop Target 2          | Reflex R                 | Mixer Heart Right       | Middle Middle 10 points | Bottom Jet Bumper        | Not Used               |
| 7 White-Violet 1J10-2 | Slam Tilt               | Enter Left Ramp       | Right Drop Target 3          | Big Shot                 | Top Left 10 points      | Middle Bottom 10 points | Left Slingshot           | Not Used               |
| 8 White-Grey 1J10-1   | High Score Reset        | Score Left Ramp       | Right Drop Target 4 (Bottom) | Middle Right Popper      | Not Used                | Middle Top 10 points    | Right Slingshot          | Not Used               |

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