OPERATING INSTRUCTIONS

There are several variable options that can be obtained on 'DAMBUSTERS'. These options can be selected by means of the test programme.

To enter the test mode the test switch on the inside of the machine (situated behind the coin door on the left) must be operated.

To go from one test procedure to the next this test switch must be pressed once each time. The full cycle entails 7 depressions of this switch.

At the first press of the switch the machine enters the test mode which is explained below:

1. 1st press of the test switch

   CROSS HATCH

   This is displayed on the screen to enable the monitor to be set up correctly for convergence.

2. 2nd press of the test switch

   TALLY AND HOURS OPERATED

   This display shows the amount of money the machine has taken since leaving South West Research Limited also the amount of time the machine has been switched on.

3. 3rd press of the test switch

   DIP SWITCH – DESCRIPTION – STATUS

   This displays on the screen the current selection of the tiny 'Dual-in-line' switches located on the electronics board. Access to these can be gained via the back door.

   The operation of these switches is explained as follows:

   DIP SWITCH 1 – 2nd COUNTER

   This capability exists to charge the 50p coin mechanism to accept 10p coins, and vice-versa, by operating switch number 1 on the 'dual-in-line' switches.

   The 50p coin mechanism corresponds to the 2nd counter situated on the side wall near to the test switch. The 2nd counter is the one below the 1st counter.

   DIP SWITCH 2 – GAME COST

   The game cost may be changed from 10p to 20p per game by operating switch number 2 on the 'dual-in-line' switches.

   The ON column as shown on the screen is for 20p and the OFF column is for 10p. Operating switch number 2 will read on the right-hand side of the screen either ON or OFF.
3. DIP SWITCHES – DESCRIPTION – STATUS (continued)

DIP SWITCHES 3 & 4 – HITS ALLOWED

The number of lives lost per hit i.e. damage to aircraft, can be changed to vary game difficulty by operating switches numbered 3 & 4 on the 'dual-in-line' switches.

When operated these switches change the status on the far right of the screen to read ON or OFF.

Decide the number of lives the player is allowed to lose per game from the list of 3, 4, 5, 6. Operate switches 3 & 4 to read downwards to correspond with the number chosen reading from left to right. An example of this would be both switches in the ON position for a game allowing 6 lives to be lost, then the game will end.

DIP SWITCH 5 – SPARE 1

This switch is a game test switch and MUST be left in the OFF position.

DIP SWITCH 6 – SPARE 2

The Union Jack in the Attract mode can be removed by operating switch number 6 on the 'dual-in-line' switches. This facility can be used when the machine is situated in sensitive areas or countries.

The Union Jack will be displayed when the switch is in the OFF position. To remove the Union Jack the switch will need to be in the ON position.

4. 4th press of the test switch

MAXIMUM GAME SELECTION

This facility can be used to select the maximum amount of time allowed per game. Decide the number of minutes to be allowed from the Game Time List of 9 mins, 4.5 min, 2 mins, and 1.8 mins.

By moving the joystick upwards or downwards make the red brackets enclose the corresponding number in the option list of 1 to 5. Press the Bomb button to set and to print out the Current Selection.

5. 5th press of the test switch

TEST – SCREEN ALIGNMENT

When the test switch is pressed for the fifth time the machine enters into a Confidence Test of Electronics and will stop and display any faulty areas, if not it will continue up to the SCREEN ALIGNMENT display.

6. 6th press of the test switch

COLOUR BARS

This display shows colour bars for monitor alignment.

7. SWITCH TEST ROUTINE

This display allows you to test the fire buttons, the coin mechanisms, and the Joystick movements and Bomb button. When these are operated one at a time a
7. SWITCH TEST ROUTINE (continued)

red oblong will show against each description to indicate that they are functioning correctly.

To test the coin mechanism an appropriate coin must be dropped through when the door is
open; the coin being collected in the hand. When the coin is going through the mechanism the
red oblong will flash on the screen. Try this test a few times to double-check. The coin
mechanism test can be done without incrementing coin counters or giving any credits.

To exit from the test programme press player one and player two buttons simultaneously.

In conjunction with the test programme and video display monitor can be set up. Brightness or
brilliance, however, is best set up in the Attract mode. This is best adjusted when the pages are
changing and the characters cannot be seen as a grey shadow before the vertical sweep of
colour fills the screen.

All other adjustments are done in the test mode by cycling to the required test using the
test switch.

SOUND VOLUME

The volume of all sounds will be altered by a small potentiometer situated next to the 'dual-in-line'
switches on the electronics board.

SWEAR WORDS

The games board programme will automatically reject most swear-words on the high score 'Roll of
Honour' display. However, if you find offensive words on the 'Roll of Honour' there is a key switch at
the back of the machine near the bottom on the right which, when operated, will remove all the
names and offensive words. It will, however, keep the actual high scores on the screen. If the key
switch is inadvertently left in the ON position each page of the attract mode will quickly flash
around. The operation of this key switch during a 'game play' will not interrupt the player, but it will
clear the offensive words.

N.B. This switch is the only switch which is not tested in the test mode.

INITIALISATION

This is done prior to the board or complete machine leaving the factory. It puts the coin counters,
total taken and hours the machine is on back to zero, (test 2).

If the machine requires Initialisation at any time in the future please contact South West
Research Limited.
**DAMBUSTERS EDGE CONNECTOR PIN-OUT**

**ALL SWITCH TO 0 VOLTS**

**THE COUNTERS RETURN TO +12 VOLTS**

<table>
<thead>
<tr>
<th>0 Volts</th>
<th>A 1</th>
<th>0 Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Volts</td>
<td>B 2</td>
<td>0 Volts</td>
</tr>
<tr>
<td>+5v + -2%</td>
<td>C 3</td>
<td>+5v + -2%</td>
</tr>
<tr>
<td>+5v + -2%</td>
<td>D 4</td>
<td>+5v+ -2%</td>
</tr>
<tr>
<td>N/C</td>
<td>E 5</td>
<td>N/C</td>
</tr>
<tr>
<td>N/C</td>
<td>F 6</td>
<td>N/C</td>
</tr>
<tr>
<td>50p/10p Count</td>
<td>H 7</td>
<td>10p only counter</td>
</tr>
<tr>
<td>50p/10p Credit</td>
<td>J 8</td>
<td>10p only credit</td>
</tr>
<tr>
<td>Test Switch</td>
<td>K 9</td>
<td>Bomb</td>
</tr>
<tr>
<td>Fire Rear</td>
<td>L 10</td>
<td>Fire Forward</td>
</tr>
<tr>
<td>2 Plyr (pilot) St</td>
<td>M 11</td>
<td>1 Plyr (pilot) St</td>
</tr>
<tr>
<td>N/C</td>
<td>N 12</td>
<td>Down Descend</td>
</tr>
<tr>
<td>Right (Increase throttle)</td>
<td>P 13</td>
<td>Left (Throttle back)</td>
</tr>
<tr>
<td>Swear Word Key Switch</td>
<td>R 14</td>
<td>Up Climb</td>
</tr>
<tr>
<td>N/C (Ov SGN)</td>
<td>S 15</td>
<td>0v SCRN</td>
</tr>
<tr>
<td>Red</td>
<td>T 16</td>
<td>Blue</td>
</tr>
<tr>
<td>Synch</td>
<td>U 17</td>
<td>Green</td>
</tr>
<tr>
<td>N/C</td>
<td>V 18</td>
<td>Sound</td>
</tr>
<tr>
<td>+12v</td>
<td>W 19</td>
<td>+12v</td>
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<tr>
<td>+12v</td>
<td>X 20</td>
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<tr>
<td>0 Volts</td>
<td>Y 21</td>
<td>0 Volts</td>
</tr>
<tr>
<td>0 Volts</td>
<td>Z 22</td>
<td>0 Volts</td>
</tr>
</tbody>
</table>

N.B. All 0 volts connection must be wired together
All +5v connection must be wired together
due to currents drawn.
NOTE - ALL NODES CONNECT ON EDGE CONNECTORS