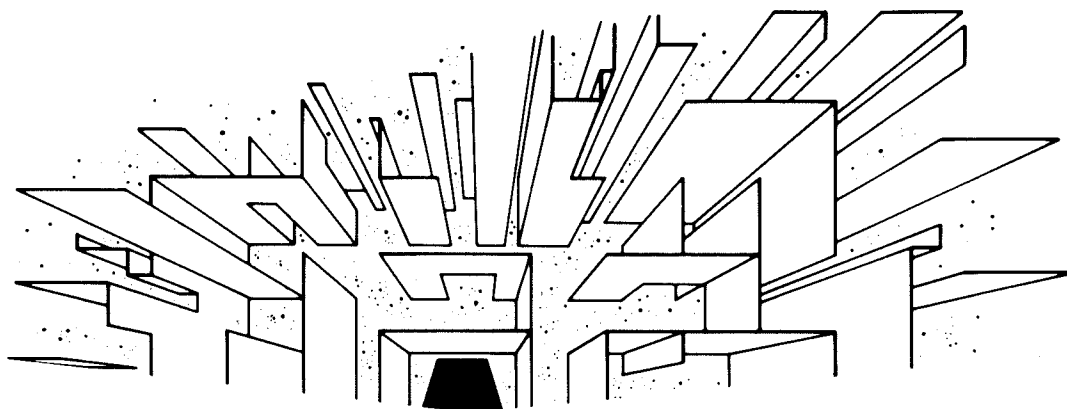


# Supplement To

The Adventures of  
**MAJOR HAVOC**™

## Conversion Instructions for Tempest™ TM-267, 1st printing



This Supplement contains changes to the Major Havoc Conversion Instructions for Tempest. Please incorporate these changes into the instructions before proceeding with the conversion.



 A Warner Communications Company



Add the following item to Table 1 Kit Parts (page 1):

<u>Part No.</u>	<u>Quantity</u>	<u>Description</u>
A035220-03	1	Coupler PCB



Add the following item to Table 2 Tools Required (page 3):

<u>Description</u>	<u>Purpose</u>
3/32-Inch Allen Wrench	Modifying the control panel



Change Figure 8 Modifying the Deflection PCB (page 19) as follows:

P700 should be P600 and P600 should be P700.



Replace the procedure from step 7 through 16 under "I. MODIFY THE CONTROL PANEL" (page 23 and 24) with the following:

7. Use a 1/4-inch hex driver and 3/32-inch Allen wrench to remove the two screws, nuts, and washers securing the Coupler PCB to the encoder-wheel control (save the screws, nuts, and washers for reassembly).
8. Use a 1/4-inch hex driver and 3/32-inch Allen wrench to install the replacement Coupler PCB (included in the kit) on the encoder-wheel control. Position the PCB so that the encoder wheel is centered between the plastic U-shaped photocoupler. Refer to Figure 20 in the Tempest manual for a detailed illustration of the encoder-wheel assembly.
9. Spin the encoder-wheel control to verify that it spins smoothly. If not, check the position of the Coupler PCB or remove any burrs on the encoder wheel.

! — WARNING — !

Some heat guns or hair dryers do not have thermal cutoff switches to prevent overheating. Do not allow the heat gun or dryer to become hot enough to cause a burn or destroy the gun or dryer. Also, do not allow the control panel to become hot enough to cause a burn.

10. Use a heat gun or hair dryer to apply heat directly to a corner of the control-panel decal.
11. Grasp the heated corner of the old decal and gently peel the decal off while you continue to apply heat progressively across the decal surface. Be careful to remove the decal evenly without burning or disturbing the old adhesive that remains on the control-panel surface.
12. Cut and remove a strip of the protective backing from the switch holes near the center of the Major Havoc control-panel decal (included in the kit).
13. Carefully position the Major Havoc decal, with the adhesive side down, so that the holes in the decal are aligned with the corresponding holes in the control panel. Then press the decal onto the control panel.
14. Slowly peel off the remaining protective backing from the inside toward each end of the control panel while using the palm of your hand to press the decal onto the control panel. Make certain that the Major Havoc decal is wrapped tightly around the edges and the adhesive is securely bonded to the front and back of the control panel.
15. Use a 3/8-inch hex driver to secure the encoder-wheel control to the control panel with the two nuts and washers removed previously.
16. Use a 5/8-inch open-end wrench to secure the two new leaf switches and pushbuttons (included in the kit) to the control panel. The red pushbutton is placed into the FIRE hole; the yellow pushbutton is placed into the SHIELD hole.
17. Connect the harness fast-on lugs to the appropriate switch terminals as shown in Figure 2 in TM-267. Connect the Coupler PCB connector to the Coupler PCB.

18. Install a 24-inch strip of 1/4-inch adhesive-backed foam tape (not included in the kit) to the top edge of the control panel as shown in Figure 2 in TM-267.



Replace the procedure under "J. MODIFY THE ATTRACTION PANEL" (page 25) with the following:

1. Remove the staples securing the attraction-panel decal to the frame.
2. Use a #11 X-ACTO™ blade (or suitable substitute) to cut the decal around the edges of the attraction-panel glass.
3. Remove the attraction-panel glass from the frame.
4. Lay the attraction-panel frame on a clean work surface and gently place the clean attraction-panel glass (included in the kit) into the attraction-panel glass recess in the frame.
5. Cut and remove a strip of the protective backing from around the grille slots in the Major Havoc attraction-panel decal (included in the kit).
6. Carefully position the Major Havoc attraction-panel decal, with the adhesive side down, over the attraction-panel frame so that the grille slots in the decal are exactly aligned with the grille slots in the frame.
7. Use the palm of your hand to press the Major Havoc decal evenly onto the frame.
8. Slowly peel off the remaining protective backing from the grille-slots toward the opposite end of the frame while using the palm of your hand to press the decal onto the frame. Make certain that the decal is tightly wrapped around the edges and the adhesive is securely bonded to the front and back of the frame.
9. Install staples or tacks on the back of the frame along the edge of the Major Havoc decal to secure the decal to the frame.



Change step 6 under "M. INSTALL THE SIDE-PANEL DECALS (OPTIONAL)" (page 29) to read as follows:

6. Align the decal with the rear and bottom edges of the cabinet.



Change the last paragraph in step 10 under "Q. INSTALL THE MAJOR HAVOC PRINTED-CIRCUIT BOARDS" (page 35) to read as follows:

(This will place the red/green wires at pins 1 and A up. The connector can be attached backwards without causing any damage, but the connector must be reversed for proper operation of the game.)



Change step 1 under "W. ADJUST THE DISPLAY", X/Y Center, Size, and Linearity (page 38) to read as follows:

1. Set the game self-test switch to the on position and obtain Screen 5, Diagonal Crosshatch display.



Add the following procedures after step 2 under "W. ADJUST THE DISPLAY", X/Y Center, Size, and Linearity (page 38):

3. Adjust the X and Y LINEARITY controls for the straightest possible diagonal lines in the Diagonal Crosshatch display.
4. Repeat steps 2 and 3 until the straightest possible diagonal lines are obtained (the linearity and size adjustments are interactive).



Change the second sentence under "Y. UPDATE THE GAME DOCUMENTATION" (page 40) to read as follows:



Modify the display manual (TM-183) schematics as shown in Figure 15 (for Versions 2, 3, and 4), Figure 16 (Versions 2, 3, and 4), or Figure 17 (Version 1).



Change the figure titles (pages 42 and 43) as follows:

Figure 16 Deflection PCB Schematic (Version 2, 3, and 4)

Figure 17 Deflection PCB Schematic (Version 1)