

# N.F.L. MODIFICATION KIT

## NO. 3

*Bally*

MIDWAY MFG. CO.

10601 W Belmont Avenue  
Franklin Park, Illinois 60131  
U.S.A.



Phone: (312) 451-9200 Cable Address: MIDCO Telex No.: 72-1596

**WARNING**

**THIS GAME MUST BE GROUNDED. FAILURE TO DO SO MAY RESULT IN DESTRUCTION TO ELECTRONIC COMPONENTS.**

ELECTRICAL BULLETIN: FOR ALL APPARATUS COVERED BY THE CANADIAN STANDARDS ASSOCIATION (CSA) STANDARD C22.2 NO. 1, WHICH EMPLOYS A SUPPLY CORD TERMINATED WITH A POLARIZED 2-PRONG ATTACHMENT PLUG.

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR. UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

**Bally MIDWAY**

*Invites You To Use*

**OUR TOLL FREE NUMBERS FOR SERVICE INFORMATION CONCERNING THIS GAME, OR ANY OTHER BALLY MIDWAY GAME YOU NOW HAVE ON LOCATION.**

**CALL US FOR PROMPT, COURTEOUS ANSWERS TO YOUR PROBLEMS.**

**VIDEO —> Continental U.S. 1-800-323-7182**

**PINBALL —> Continental U.S. 1-800-323-3555**

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W A R N I N G

The parts contained in this field conversion kit must be installed without deviation from the instructions contained in this manual and kit. Failure to follow these instructions in every detail may result in the creation of illegal interference to radio and TV reception.

BALLY MIDWAY Mfg. Co. has verified that this field conversion kit, when installed in the game(s) specified in this manual, complies with the requirements in Part 15 of the FCC rules for a Class A computing device. Operation of this equipment in a residential area may cause unacceptable interference to radio and TV reception, requiring the operator to take whatever steps are necessary to correct the interference.

BALLY MIDWAY Mfg. Co. will not be responsible for incomplete or improper conversions, or installation in a game for which this field conversion kit is not intended. If this field conversion kit is installed in a game that is not specified in this manual or in a previously converted game, the operator is required to take whatever steps are necessary to insure compliance with the requirements in Part 15, Subpart J, of the FCC Rules for a Class A computing device.

S P E C I A L   N O T E :

DO NOT DISCARD ANY OF THE PARTS YOU REMOVE  
WHEN MAKING THE MODIFICATIONS EXPLAINED IN  
THIS MANUAL.

THEY WILL BE RE-USED IN FUTURE CONVERSION KITS!

**N.F.L. MODIFICATION KIT**

**NO. 3**

**M051-00B43-A002**

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\* SPECIAL NOTE \*  
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BEFORE Installing this Modification Kit, BE SURE your game has had "N.F.L. Football Modification Kit No. 2" installed in it!!

INSTALLATION

1. Turn the power to the game OFF.
2. Perform ALL of the Steps called out in "N.F.L. MODIFICATION KIT NO. 1" for the parts included in this kit.

However, **DO NOT** reinstall your games rear access door. When you reach that stage of your modifications, RETURN TO STEP 3 BELOW OF THIS PAGE AND CONTINUE WITH YOUR MODIFICATIONS.

3. Now that you have modified your game's C.P.U. Printed Circuit Board, you are ready to locate your game's I.P.U. Printed Circuit Board.
4. Be sure the power to your game is still OFF.

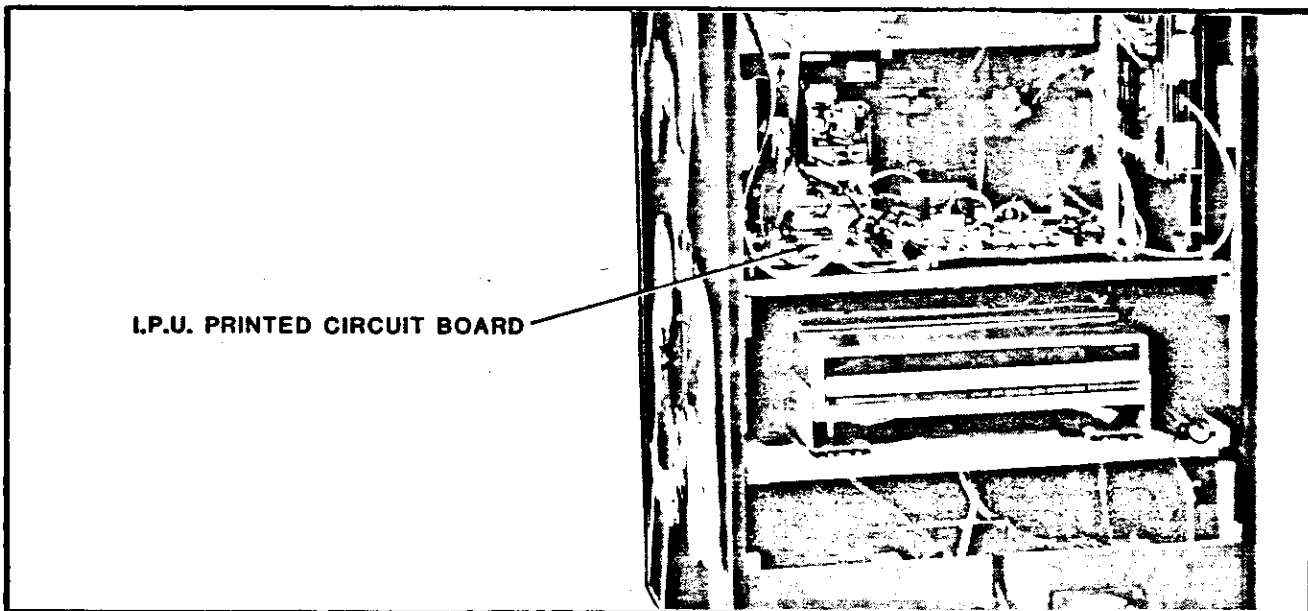
5. The I.P.U. Printed Circuit Board is located on the left side of your game's Printed Circuit Board Mounting Shelf as indicated in the following illustration.
6. Disconnect all cabling from the Printed Circuit Board. There are cables at several of it's sides.

If you are not sure if you will remember where all these plugs will go when you re-assemble your game, we'd like to suggest that you make a small drawing showing all the plugs and where they were removed from.

7. Do not forget to disconnect the Ground Strap from this Printed Circuit Board Assembly.
8. Remove the screws that hold the I.P.U. Printed Circuit Board Assembly Retainers to the P.C.B. Mounting Shelf.

These are now free and can be lifted out the rear of the cabinet and set aside.

9. The I.P.U. Printed Circuit Board Assembly is now also free and can be lifted out the rear of the cabinet.



I.P.U. PRINTED CIRCUIT BOARD

FCC/identification label installation.

NOTICE

DO NOT INSTALL the enclosed FCC/identification label if:

- a The kit is installed in a game that is not specified in this manual.
- b The kit is installed in a previously converted or modified game, even if it is specified in this manual.
- c The kit is installed improperly or incompletely in a game specified in this manual.
- d The kit is installed in a non-BALLY MIDWAY Mfg. Co. game cabinet.

When performing any of the above listed, not authorized conversions the operator is required to take whatever steps are necessary to ensure compliance with the requirements in Part 15, Subpart J, of the FCC Rules for a Class A computing device.

Perform the following procedure to install the FCC/identification label on the game cabinet:

1. Remove the existing FCC compliance, Game Identification and Origin labels and associated staples from the back of the game cabinet.
2. If needed, draw a line through the game name(s) that do not apply. (On FCC/identification label - third line on the left side)
3. Remove protective backing from the conversion kit FCC/identification label. Do not touch the adhesive.
4. Firmly apply the FCC/identification label to the upper back side of the game cabinet, between the two handgrips/vents.

## REPLACING THE

### I. P. U. CODE EPROMS

1. Place the I.P.U. Printed Circuit Board Assembly you just removed from your game on a flat clean work surface.
2. Referring to the following illustration and your own I.P.U. Printed Circuit Board, locate the indicated 2 I.P.U. Code EPROM's on YOUR I.P.U. Printed Circuit Board.

They are at Board Locations (coordinates) A2 and A4.

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\* SPECIAL NOTE \*  
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THE NEXT STEPS OF THIS PROCEDURE **MUST** BE CONDUCTED WITH EXTREME CARE TO AVOID DAMAGING THE PROGRAM STORED IN THE EPROMS YOU ARE ABOUT TO REPLACE. WE SUGGEST EVERY PRECAUTION LISTED - NO MATTER HOW SILLY IT MAY SEEM TO YOU.

IF THEY ARE EXPOSED TO IT, THE SMALLEST AMOUNT OF STATIC ELECTRICITY (the kind that gives you a shock after you walk across a rug and reach for a grounded metal object) CAN PERMANENTLY DAMAGE THE PROGRAM STORED IN THE EPROMS YOU ARE GOING TO REPLACE.

3. Ground yourself **BEFORE** handling each EPROM. This can be accomplished in many ways, for example: if you are working next to the game cabinet and if it is still plugged into the wall outlet - just touch the Ground Strap you removed from the Printed Circuit Board Assembly, you could touch the metal center screw which holds the plug plate in place over your wall outlet, or you could touch the grounding strap of your work bench if that is where you will be conducting the modifications.
4. Gently work a small screwdriver under the EPROM you want to remove. At the same time, grasp it with your other hand and lift up gently. Guide it out of the socket in this manner to help avoid damaging the EPROM's pins and the pins of it's socket.
5. Set the removed EPROM aside.

6. Ground yourself again.
7. Pick up the replacement EPROM and install it in the socket you just emptied. **DO NOT TOUCH IT'S PINS!!**

**WARNING:** The notch at one end of the EPROM **MUST** be matched to the end of its intended socket, which contains a similar notch. If you put the EPROM in it's socket backward and turn on the power to the game, you will ruin it.

8. Ground yourself again **BEFORE** replacing the next I.P.U. EPROM found at location A4.
9. To reassemble your game, simply reverse the appropriate parts of this procedure.
10. With the power ON, replace your game's current video disc with the NEW one provided in your Modification Kit.
11. Reinstall and secure your game's Rear Access Door.