Inter-Office Memo

A T A R I
Coin-Operated Games Division

To: Fred McCord/Eamonn McGrath   *F. Murphy*
                                             T. Guerin
From: Sam Deus

Subject: POLE POSITION - NAMCO BOARDS   Date: November 15, 1982

      This memo is to notify you of possible repair problems with games
using Namco boards. We have discovered serious timing problems in the Namco
design. We have corrected these problems in U.S. boards, however, there is
no good way to fix Namco boards without butchering the boards. Namco is
currently getting around the problem by selecting parts. All the boards we
will receive from Namco will be operational (I think). Two problem areas
are:

1.   On the video board location 9H 1C 74LS157, factory advises not
     to use Fairchild LS157's.
     Symptoms - Irregularities in motion objects
     Problems - 74LS157's are notorious in generating glitches when
                select line is switched which may generate improper
                write signals to buffer RAM. The other problem is
                if the part is too fast, load signal to sync
                counters may go away before the clock signal and
                result will appear as a skewed objects. The quick
                mickey-mouse fix for this is to put 100PF to
                1000PF capacitor at the input pin 10 or 14 to delay
                the signal.

2.   On the CPU board location 7J, 7H and 8H, 1C's 74L157 and
     2148's (8148 or 2149).
     Symptoms - Garbled music (should not effect engine sound or
                voice).
     Problems - Again output glitches on 74LS157 and propagation
                delay of the RAMS. Parts lists call for 55NS
                (access time) RAMS as a replacement for 7H and
                8H, however, it is not fast enough in worst case
                conditions. The parts NAMCO is selecting are
                around 25NS access time which no manufacturer
                guarantees. Increasing the size of the C70
                capacitor from 33PF to 100PF may help.

      I will be glad to support you if you need help. These boards
are too expensive to scrap. In addition, there are two more items I would
like to inform you on:

1.   There should be 4.7K pull-down resistor on the board near the
     edge connector (CPU) at the brake input. This modification
     does not effect the upright cabinets (since brake is grounded)

but needed in sitdowns. However, this resistor needed in all
boards to keep the interchangeability between uprights and
sitdowns.

2. Pull out the three EPROMS from the CPU board. These are
labeled PP2-12, 13 and 14. These will eliminate only the
crowd cheering sound when the goal is reached. PROMS of
course, are reusable and should go into stock.

SD:jdh

cc: Steve Calfee
     Chris Downend

<u>Inter-Office Memo</u>

FIELD SERVICE

2 2 NUV 1982

To: Dave Rogers

From: Sam Deus *Sam*

Subject: MODIFICATION/POLE POSITION BOARDS   Date: November 9, 1982

M.O.R
F. Murphy, T. Guerin, K. Hayes

This memo is to document the modification need on the NAMCO Pole Position boards. The attached blue line shows where to solder the 4.7K OHM pull down resistor on the CPU PC board.

This modification pulls down Pin 13 (brake) input to the ground through 4.7K OHM resistor.

SD:jdh
Attachment

cc: Chris Downend
     Eamonn McGrath, Ireland

Inter-Office Memo

A T A R I
Coin-Operated Games Division

To: Chris Downend

From: Sam Deus

Subject: COIN INPUT PROBLEM/POLE POSITION   Date: November 2, 1982

As you know, we detected a coin input nuisance problem on the Pole Position sitdown version, when two coins one credit option is selected.

To refresh your memory, the nature of the problem is: When a player puts a coin into coin input A and another into coin input B, the game does not register these as one credit until another coin comes in on either coin input A or B. What's more, the game totally forgets one of the first two coins at the end of the game depending upon where the third coin went in. I have mentioned this problem to Mr. Tashiro when he was visiting Atari. His response was (which we had already guessed) that the coin inputs are handled by custom chip. The custom chip is initialized at the beginning of the game from option switch settings and it keeps track of the coin counts and lets the program know when there is a credit. The program cannot keep track of the coin inputs. Therefore, there is no easy software solution and as you probably have guessed, changing the custom chip to do what we want is out of the question for all practical purposes. Of course the problem is typical for all multiple coin-one credit option selections. So far I have not received an official response from Namco which I relayed the problem through Riv on October 14, 1982.

The possible solutions to this problem are as follows:

1. Pursue the issue with Namco so they make both required hardware (custom chip redesign) and software changes (not enough time to catch all of the production run of sitdowns).

2. Seal the second coin input on all the sitdowns.

3. Put a label on top of coin mechanisms advising the player to put all the coins into one coin mechanism.

4. Live with the problem and advise the operators that players will be coming to them complaining that they lost a quarter and it is possible in multiple coin option settings.

5. Wire both coin input mechanisms into one coin input only and lose the split coin selection option.

6. Use a combination of the above solutions.

I have looked at other hardware solutions and they are not practical (requires an addition of decoder PROM). I need your advice as soon as possible. For additional information, please see attached coin option list.

SD:jdh
Attachment

cc: Dan Van Elderen
     Dennis Hawes
     Mary Fujihara
     Beth Falconer
     Steve Calfee

ATARI®

TO :   K.Hayes, F.Murphy, T.Guerin, M.O'Rourke , F. Martindale.

FROM :   E.Mc Grath   DATE :   24/11/82.

SUBJECT : Modifications to Namco PCB's as of 22nd Nov.

This memo documents all Modifications to the PCB that we are
aware of.

1.   4.7k OHM resistor to be installed , to ground the brake input
     on the CPU PCB (see attachment 1).

2.   Three E Proms, PP2 - 12, 13 and 14 must be removed from
     the CPU PCB. These can be programmed and added to stock.
     (attachment 1).

3.   Six E Prpms and 1 Prom from the Video PCB must be reprogrammed
     We will reprogram the E Proms with the new program which
     Kevin Hayes is bringing over.
     Since we do not have the prom blowing attachment K. Hayes
     is bringing over 100 proms for start up. The States may
     continue to supply us with this rom , alternatively it has
     been suggested that we purchase the attachment.

4.   For our Coinage requirements , it is necessary that the Coin 1
     options be on the right coin Mech (50p). This necessitates a
     swop of the Coin 1, Coin 2 wires at the Edge Connector.
     M.Spooner has been made aware of this and an ECN is in process.

Encl / 4 Copies.

TO :

FROM : E.Mc Grath.

SUBJECT :

DATE : 24/11/82.

5. Coin Option Interconnect Assy.
USA have found a problem in the Coin Inputs when options are set
at two coins 1 play or greater. Both coins must be put in the one
slot, otherwise the player looses a credit (see attachment 2).

The solution chosen was no 5 on the attachment sheet 2 and this
was brought about by using an additional Coin Option Interconnect
Assy.

This assy is necessary for all Coin Doors with identical Left and
Right Mechs. eg. 25¢, 25¢ Canadian and most Scandanavian Countries.
It is not necessary for doors with different denominations
eg 20p,-50p, 1dm-5dm.
The project engineer suggests that we ship the Interconnect Assy
as a kit. The Manual will detail its use.

Encl/ 4 copies.

Inter-Office Memo

FIELD SERVICE

To: Dave Rogers

From: Sam Deus *Sam*

Subject: MODIFICATION/POLE POSITION BOARDS

2 2 NOV 1982

M.O.R
F. Murphy, T. Guerin, K Hayes
Date: November 9, 1982

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SD:jdh
Attachment

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cc: Steve Calfee
    Chris Downend

Inter-Office Memo

A T A R I
Coin-Operated Games Division

To: ~~Chris Downend~~

From: Sam Deus

Subject: COIN INPUT PROBLEM/POLE POSITION   Date: November 2, 1982

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Pole Position sitdown version, when two coins one credit option is selected.

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     players will be coming to them complaining that they
     lost a quarter and it is possible in multiple coin
     option settings.

5.   Wire both coin input mechanisms into one coin input
     only and lose the split coin selection option.

ATARI

TO :   Distribution

FROM :   Eamonn McGrath   DATE : 3rd December, 1982

SUBJECT :   Pole Position Option Settings

Attachment 1 and 2 details the mistakes I have found in the Pole Position Supplement Manual. I have informed Sam Deus, Project Engineer, of these and he will have a Stuffer Sheet done up to cover these. We have agreed that both sitdows and uprights should be sent out at the one setting of 90secs per lap, 3 racing laps. This limits the duration of the game to under three minutes, and means more money in the cashbox for operators.

EMCG/vh

Distribution:

K. Hayes
T. Guerin
F. Murphy
N. Joyce
J. Hamilton

From the Desk of : Eamonn McGrath

TO : J. Hamilton, F. Murphy.

Games which are going to Canada must now be sent on 50¢ (2coins 1play) and the More Liberal Settings of

120 sec Play
4 Racing Laps

The Canadian Games will have the option Coin Interconnect Assy installed, along with the following Currencies

Tokens
25¢ USA
Belgian Francs
1 Norwegian Krona
1 Swedish Krona
1001 - Italy

INTER-OFFICE MEMO

ATARI®

TO :   Tony Guerin   cc K.Hayes.

FROM :   Eamonn Mc Grath *aul*   DATE :   December 1st 1982.

SUBJECT :   Pole Position Options.

The attached information details the set up requirements for
Final Q.C. of Pole Position Sitdown.

The only difference between Pole Position Sitdown and Upright
options is that the Sitdown is set out at a game time of
120 seconds and 4 laps.
The Upright is set for 90 seconds, 3 laps.

The reason for this is that the Sitdowns in USA are set out at
50 cents a play. The Uprights are at 25 cents a play.

As all of our games will be going out at the equivalent of 25¢
i.e 20p, 2 francs etc, should we adopt a midrange setting e.g.
100 seconds.

Your comments please.

Note the Manuals have different Settings
Suggested for u/R and Sitdown

To: Bob Burkhardt

From: Dave Wiebenson

Subject: Pole Position

22 NOV 1982 FIELD SERVICE

CC. Quality Control
J. Hamilton
T. Guerin
M. Rourke

Date: 10/13/82

REQUIREMENTS FOR VIDEO DISPLAY

1. Colors: The sky is blue, grass is green, roadway is dark grey with a white dashed center line, car tires are black with grey highlights, overhead "START" is red on yellow background. Car is orange, red, and blue. Self test has white letters on blue background.

2. Size: the picture is to extend to the top and bottom of the Bezel; no black outline is to show on top or bottom. The picture is to extend to the left and right of the Bezel plus or minus .250 inch.

3. Tilt: the picture is to be tilted no more than .250 inch.

4. Visibility: the player's score, lap time, and speed, and the top score are to be completely visible within the Bezel. In self test when the auxiliary coin switch is pressed, the two rows of numbers at the bottom of the screen are to be completely visible.

REQUIREMENTS AND SETTINGS IN SELF TEST

1. Neither brake nor gas pedal is to be depressed while the game is going into self test.

2. Once the game is in self test, the following parameters must be met:

   A. RAM ok   ROM ok

   B. Depress gas pedal. The two digit number by "ACCEL" is to increase linearly from 00 up to a value between 90 and A0.

   C. Depress the brake. The number by "BRAKE" is to switch from 00 to a value between 90 and A0. (Note: on the upright version, the brake is ~~a pushbutton switch on the accessory bracket inside the coin door~~). *GROUNDED AT EDGE CONNECTOR*

   D. Turn the steering wheel right. The number by "STEERING" is to increase. Turn the wheel left and the number is to decrease.

   E. "SHIFT" is to be "LO" when the gearshift is up, and "HI" when the gearshift is down.

✱ = SUGGESTED SETTINGS SIT DOWN

F. For the sit down games, the option switches at location 7E on the Namco PCB and location 9Ja on the Atari PCB are to be set so that 1 is on, 2 is on, 3 is off, 4 is on, 5 is off, 6 is on, 7 is on, and 8 is on.

The option switches at location 9E on the Namco PCB and location 9L on the Atari PCB are to be set so that 1 is off, 2 is on, 3 is off, 4 is on, 5 is off, 6 is off, 7 is on, and 8 is on.

The self test display is to show that coin 1 is 2 coins - 1 credit, coin 2 is 2 coins - 1 credit, time is 120, goal is 4, extended rank is B, and practice rank is C.

For the upright games all settings are the same except all switches on 7E or 9Ja are to be off so that coin 1 is 1 coin - 1 credit, coin 2 is 1 coin - 1 credit, time is 90, and goal is 3.

G. "AUTO START" is to be indicated on the self-test display.

H. On the Atari PCB only, the switch at location 6B is to be put in the off position.

I. Depress the gas pedal. Turn each volume control up and down one at a time to verify that all 4 (2 on upright) speakers are working and are independent of each other. Then turn all volume controls clockwise to maximum volume. Turn the two rear speakers (top speaker on upright) down using the two right most volume controls (left volume control on upright) until the sound at the player's normal playing position is equalized.

DW/br

NOTE : SINCE THIS GAME USES TWO AUDIO REG BRDS.
I ADVICE TO CHECK THE +5V SUPPLY ON
BOTH BOARDS TO SEE HOW CLOSE THEY
TO +5 VOLTS ON VERY FIRST RUNS.

✳ = SUGGESTED SETTINGS SIT DOWN

	Content	Status Of Switch							
		1	2	3	4	5	6	7	8
C O I N 1	1 coin / 1 cr.	OFF	OFF	OFF					
	1 / 2	ON	OFF	OFF					
	1 / 3	OFF	ON	OFF					
	2 / 1	ON	ON	OFF					
	3 / 1	OFF	OFF	ON					
	3 / 2	ON	OFF	ON					
	4 / 3	OFF	ON	ON					
	Free Play	ON	ON	ON					
C O I N 2	1 coin / 1 cr.				OFF	OFF			
	2 / 1				ON	OFF			
	3 / 2				OFF	ON			
	4 / 3				ON	ON			
T I M E	90						OFF	OFF	
	100						ON	OFF	
	110						OFF	ON	
	120						ON	ON	✳
G O A L	3								OFF
	4								ON ✳

✳ - SUGGESTED GAME SETTINGS SIT-DOWN ONLY

POLE POSITION

DIP SW. 9E.

		CONTENT	STATUS OF SWITCH							
			1	2	3	4	5	6	7	8
PRACTICE RANK	DIFFICULTY IN QUALIFYING	EASIEST A	OFF	OFF	OFF					
		B	ON	OFF	OFF					
		C	OFF	ON	OFF					
		D	ON	ON	OFF					
		E	OFF	PFF	ON					
		F	ON	OFF	ON					
		G	OFF	ON	ON					
		MOST DIFFICULT H	ON	ON	ON					
EXTENDED RANK.	DIFFICULTY IN RACE LAPS	EASIEST LAP A				OFF	OFF	OFF		
		B				ON	OFF	OFF		
		C				OFF	ON	OFF		
		D				ON	ON	OFF		
		E				OFF	OFF	ON		
		F				ON	OFF	ON		
		G				OFF	ON	ON		
		MOST DIFFICULT H				ON	ON	ON		
		KILOMETRES/HR.							OFF	
		MILES/HR							ON	
	A MODE ATTRACT	SOUND OFF								OFF
		SOUND ON								ON

✳ = SUGGESTED SETTINGS   SIT DOWN