APACHE 3

^{TM}

INSTALLATION AND SERVICE MANUAL

including

Schematic Diagrams

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APACHE - 3

UPRIGHT GAME, MODEL 1US39

SERVICE AND OPERATION MANUAL

Table of Contents

1. GENERAL INFORMATION

A. Installation and Set-Up

Locate the door keys supplied and remove the Rear Access Door.

Check the Main Harness for loose or unplugged connectors, and check for secure mounting of the monitor, power supply, and game pcb. Stabilize the cabinet using the leg levelers in the floor of the cabinet to prevent the game from rocking.

The selectable options have been pre-set at the factory for optimum player appeal. However, to set the game up for your specific requirements, refer to the operator selectable options on Page 3 in Chapter 2, Section A of this manual.

Remove the power cord from the inside of the cabinet and insert the strain relief plate into the slot at the bottom of the rear access door opening. Plug the AC cord into a grounded 117 VAC outlet and flip the power switch to the ON position. Allow 2 to 3 minutes for the monitor to warm up and check for proper demonstration mode video on the screen. Insert the proper coinage into a coin slot and start a game. Check for proper operation of all joystick controls and switches.

1. GENERAL INFORMATION

B. System Adjustments

The Volume Control, Coin Counter, and Service Switch are located on the Service Panel. The Service Panel is located inside the Coin Door, mounted on the wall of the cabinet on the left side.

The Coin Counter increments once for every coin dropped through either coin entry slot.

Apache-3^{tm} utilizes stereo sound. However, a single Volume Control is used to adjust the overall loudness of the game sounds. NOTE: The volume control potentiometers on the Main pcb are pre-set to mid-range at the factory and should not be adjusted.

The Service Switch can be used to add credits to the game without incrementing the Coin Counter.

The fuses for the AC power line and the 12 volt Supply are located on the Power Supply assembly. The fuse holders are labeled as to the proper fuse ratings. The line fuse should be 3 A slow blow, and the 12 volt fuse (used for coin door lamp circuit) should be 1 A fast blow.

The +5 vdc adjustment level control on the Power Supply's Switching Regulator is pre-set at the factory. In the event that an adjustment is required, measure the +5 volt level present at the game logic pcb with a Digital Multi-Meter while adjusting the output level of the Switching Regulator. The voltage must measure between +4.90 vdc to 5.10 vdc at the game logic pcb for proper operation.

> **WARNING: DANGEROUS VOLTAGE LEVELS ARE PRESENT IN AND AROUND THE MONITOR AND POWER SUPPLY ASSEMBLY. ADJUSTMENTS AND REPAIRS SHOULD BE ATTEMPTED ONLY BY QUALIFIED ELECTRONIC TECHNICIANS.**

┌───┐
│   A.   Operator Selectable Options   │
└───┘

The APACHE-3^{tm} game allows for operator adjustable pricing, difficulty, etc. These are accessed by the two dipswitches located on the game pcb. Tables 1 and 2 outline the available options. Note that both coin slots are wired to the "Coin-1" input.

CAUTION! Turn Power OFF before changing dip switch settings!

DIPSWITCH 1: **Game Price settings for BOTH left and right acceptors**

	1	2	3
1 Coin - 1 Credit	ON	ON	ON
2 Coins - 1 Credit	OFF	ON	ON
3 Coins - 1 Credit	ON	OFF	ON
1 Coin - 2 Credits	OFF	OFF	ON
1 Coin - 5 Credits	ON	ON	OFF
1 Coin - 6 Credits	OFF	ON	OFF
2 Coins - 3 Credits	ON	OFF	OFF
3 Coins - 2 Credits	OFF	OFF	OFF
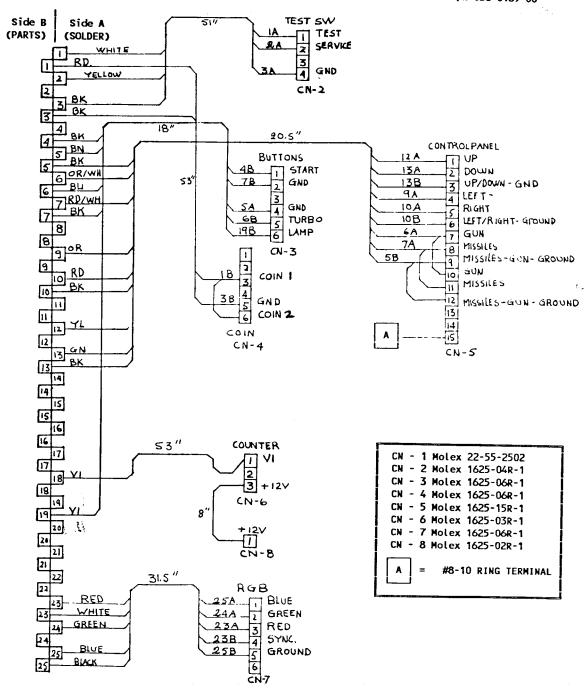
DIPSWITCH 2: Game Option Settings

	1	2	3	4	5	6	7	8
3 Lives	ON	ON				A	N	A
4 Lives	OFF	ON				L	O	L
5 Lives	ON	OFF				W	T	W
6 Lives	OFF	OFF				A	U	A
Difficulty: Medium			ON	ON		Y	S	Y
Difficulty: Easy			OFF	ON		S	E	S
Difficulty: Hard			ON	OFF			D	
Difficulty: Hardest			OFF	OFF		O		O
Attract Mode Sound ON					ON	F		N
Attract Mode Sound OFF					OFF	F		

IMPORTANT NOTICE: Apache 3 is a **ONE PLAYER GAME!**

B. Main Harness Wiring
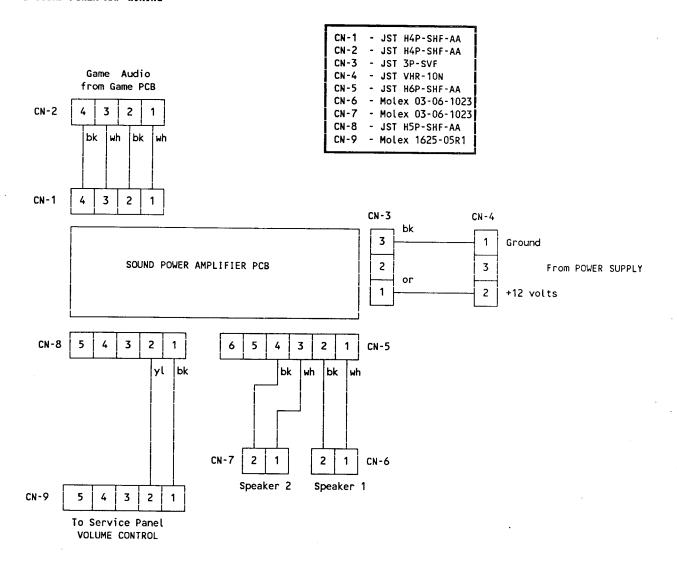
APACHE 3   MAIN HARNESS
P/N 036-0169-00

Side B (PARTS)	Side A (SOLDER)		

TEST SW

1A	1	TEST
2A	2	SERVICE
	3	
3A	4	GND

CN-2

51" WHITE
1 RD
2 YELLOW
3 BK
BK
4 BK
5 BN
BK
6 OR/WH
BU
7 RD/WH
BK
8
9 OR
10 RD
BK
11
12 YL
13 GN
BK

18"   20.5"

BUTTONS

4B	1	START
7B	2	GND
	3	GND
5A	4	
6B	5	TURBO
19B	6	LAMP

CN-3

53"

	1	
1B	2	COIN 1
	3	
	4	
3B	5	GND
	6	COIN 2

COIN
CN-4

CONTROL PANEL

12A	1	UP
13A	2	DOWN
13B	3	UP/DOWN - GND
9A	4	LEFT -
10A	5	RIGHT
10B	6	LEFT/RIGHT- GROUND
6A	7	GUN
7A	8	MISSILES
5B	9	MISSILES-GUN-GROUND
	10	GUN
	11	MISSILES
	12	MISSILES-GUN - GROUND
	13	
	14	
A	15	

CN-5

53"   **COUNTER**

	1	VI
	2	
	3	+12V

CN-6

8"

| | +12V |
| | 1 |

CN-8

31.5"   **RGB**

25A	1	BLUE
24A	2	GREEN
23A	3	RED
23B	4	SYNC.
25B	5	GROUND
	6	

CN-7

RED
WHITE
GREEN
BLUE
BLACK

CN - 1	Molex 22-55-2502
CN - 2	Molex 1625-04R-1
CN - 3	Molex 1625-06R-1
CN - 4	Molex 1625-06R-1
CN - 5	Molex 1625-15R-1
CN - 6	Molex 1625-03R-1
CN - 7	Molex 1625-06R-1
CN - 8	Molex 1625-02R-1

| A | = | #8-10 RING TERMINAL |

C. Sound Wiring

APACHE-3 SOUND POWER AMP WIRING

```
                Game  Audio                    CN-1  - JST H4P-SHF-AA
               from Game PCB                   CN-2  - JST H4P-SHF-AA
                                               CN-3  - JST 3P-SVF
      CN-2  │ 4 │ 3 │ 2 │ 1 │                  CN-4  - JST VHR-10N
            │bk │wh │bk │wh │                  CN-5  - JST H6P-SHF-AA
                                               CN-6  - Molex 03-06-1023
                                               CN-7  - Molex 03-06-1023
      CN-1  │ 4 │ 3 │ 2 │ 1 │                  CN-8  - JST H5P-SHF-AA
                                               CN-9  - Molex 1625-05R1
```

```
                                          CN-3              CN-4
                                                   bk
                                           │ 3 │─────────│ 1 │  Ground
        SOUND POWER AMPLIFIER PCB          │ 2 │         │ 3 │      From POWER SUPPLY
                                                   or
                                           │ 1 │─────────│ 2 │  +12 volts
```

```
 CN-8 │ 5 │ 4 │ 3 │ 2 │ 1 │      │ 6 │ 5 │ 4 │ 3 │ 2 │ 1 │  CN-5
                 │yl │bk │              │bk │wh │bk │wh │


                                  CN-7 │ 2 │ 1 │   │ 2 │ 1 │  CN-6
 CN-9 │ 5 │ 4 │ 3 │ 2 │ 1 │            Speaker 2   Speaker 1

        To Service Panel
        VOLUME CONTROL
```

D.   DC Distribution Harness

CN-3
(JST 3P-SVF)

CN-2
(Molex 03-06-1023)

CN-1
(Molex 19-09-2-69)

To
POWER
SUPPLY

CN-3		
1	+12 Volts	To Sound
2		Power Amplifier
3	Ground	

CN-2		
1	+12 Volts	To
2	Ground	Control Panel ("Turbo" Lamp)

or

bk

or

bk

CN-1

| 2 |
| 1 |
| 5 |
| 4 |
| 3 |
| 6 |

CN-4
(JST VHR-10N)

bk

bk

rd

rd

CN-4		
7	Ground	
8	Ground	
3	+5 Volts	To GAME PCB
5	+5 Volts	
1		
2		
4		
6		
9		
10		

3. REPLACEMENT PARTS LIST

NOTE: All replacement parts must be ordered through an authorized DATA EAST Distributor. Please order by **both** DATA EAST part number **and** part description.

A.   500-0038-00   UPRIGHT GAME, APACHE-3

Part Number	Description	Comments
031-0005-00	Speaker, 8 Ω, 5 inch	
365-0015-00	Cabinet Assy, 1US39, Apache	w/rear door & bezel
366-0001-00	Rear Door	(for cabinet assy)
380-0002-00	Bezel, Monitor, Black Cardboard	
380-0006-00	Bezel, Monitor, Wood	(Monitor Card Support)
510-0004-00	Coin Door Assy	w/plastic cashbox
510-0065-00	Monitor, Universal H/V	Wells-Gardner
510-0153-00	PCB set, Apache-3	
510-0154-00	PCB Assy, Sound Amp	
545-0004-01	Cash Box, Plastic	
780-0122-00	Manual, Apache-3 Upright	
810-0039-00	Underlay, Monitor, Apache-3	
820-0047-00	Decal, Side, Apache-3	
830-0044-00	Plex, Marquee, Apache-3	

B.   515-0029-03   SERVICE PANEL ASSEMBLY

Part Number	Description	Comments
090-0002-00	Coin Counter, 12 volt	w/internal diode
123-0011-00	Potentiometer, 25K, 1/2 watt	Volume Control
180-0024-xx	Pushbutton Assy, w/Microswitch	(any color will do)
535-0084-00	Bracket, Service Panel	

C.   510-0002-03   POWER SUPPLY ASSEMBLY

Part Number	Description	Comments
001-0012-00	Switching Regulator	+5 V @ 11A, 12V @ 2A
010-0001-00	Transformer, Isolation	1 A (min) @ 115 VAC
150-0005-00	Filter, Noise	Corcom 1011L
200-0002-00	Fuse, 1 A Fast Blow	for Coin Door Lamps
200-0011-00	Fuse, 3 A Slo Blow	115 VAC Line Fuse
205-0003-02	Fuse Block, 2 pole	
515-0002-01	Power Cord Assy	w/strain relief plate
660-0003-00	Fish Paper	(safety cover)

3. REPLACEMENT PARTS LIST

NOTE: All replacement parts must be ordered through an authorized DATA EAST Distributor. Please order by **both** DATA EAST part number **and** part description.

D.   510-0152-00   CONTROL PANEL ASSEMBLY

Part Number	Description	Comments
120-0068-00	Resistor, Power, 300 Ω, 5 W	
165-0009-00	Lamp, #161	(for "Turbo" button)
180-0021-00	Microswitch	(for pushbuttons)
180-0024-02	Pushbutton Assy, w/Microsw	Red
180-0025-00	Pushbutton Assy, Lighted	"Turbo"
535-0089-00	Control Panel, Bare, Apache	(no overlay)
800-0037-00	Overlay, Control Panel, Apache	
800-0038-00	Overlay, Steering Assy, Apache	

E.   515-0028-00   STEERING ASSEMBLY
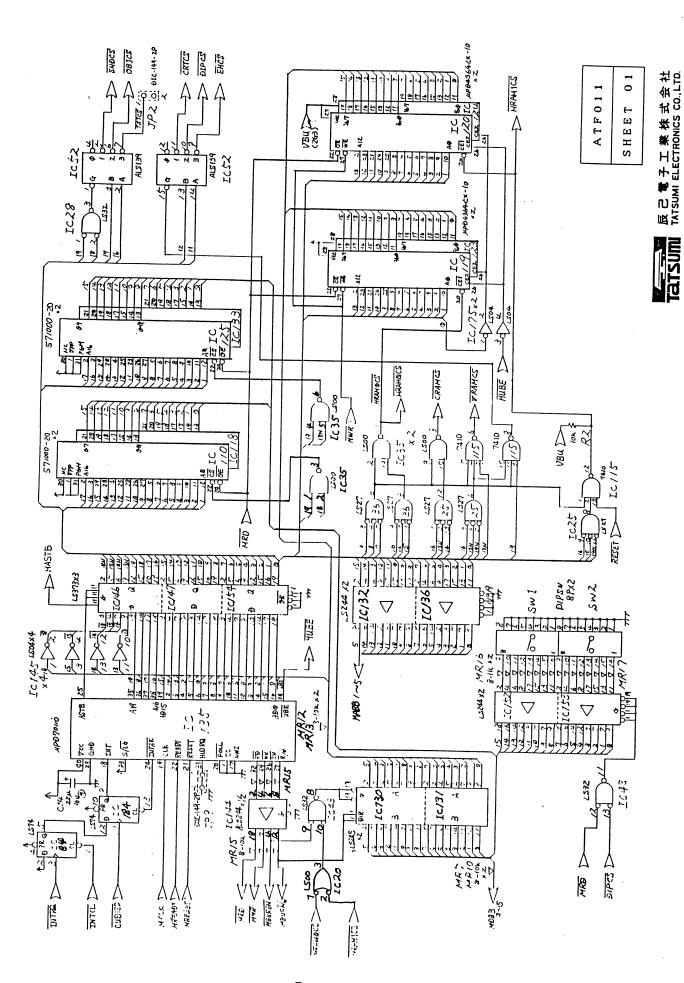
Part Number	Description	Comments
123-0004-53	Potentiometer, 5K Ohm	Type EJ - Extra life
180-0021-00	Switch, Cherry #E63-00A	Thumb Button & Trigger
234-0006-05	Screw, Socket Head Cap, 8-32 X 3/4, self locking	
244-0009-00	Washer, Split Lock, #8	
266-0004-00	Spring, Compression	(Trigger and Thumb Button)
267-0001-00	Spring, Torsion, Steering	(left/right)
267-0002-00	Spring, Torsion, Handle	(up/down)
280-0007-00	Bushing, Thumb Button	
353-0001-00	Pushnut, 0.12 Dia	for Thumb Button
455-0048-00	Trigger	
530-0022-00	Shaft, Handle	(up/down)
530-0023-00	Pin, Spring Handle	
530-0024-00	Shaft, Steering	(left/right)
535-0091-00	Controller Cover	without Apache-3 overlay
545-0008-00	Button, Thumb	

APACHE-3

Schematic Diagrams
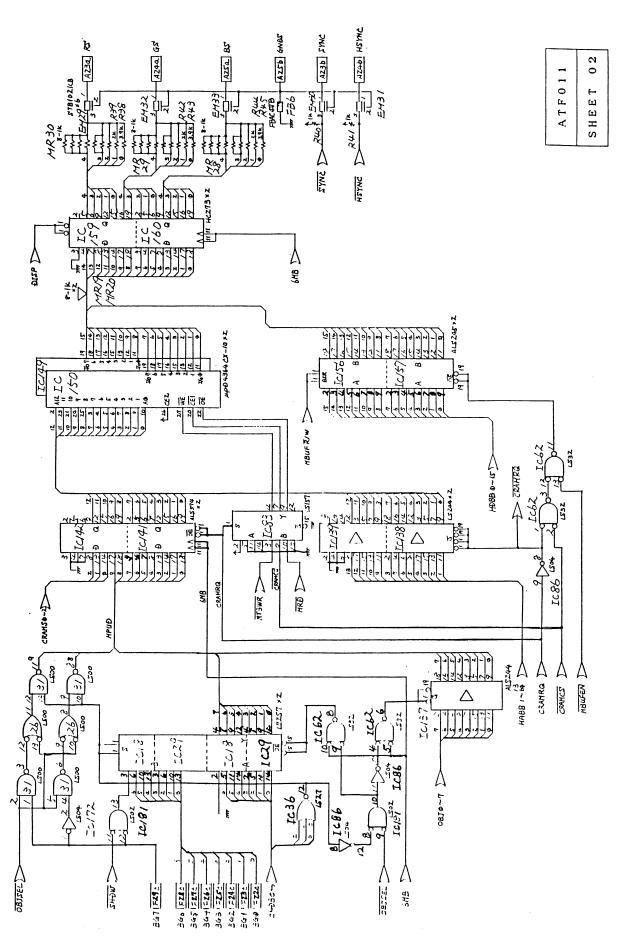
Program Board — ATF011
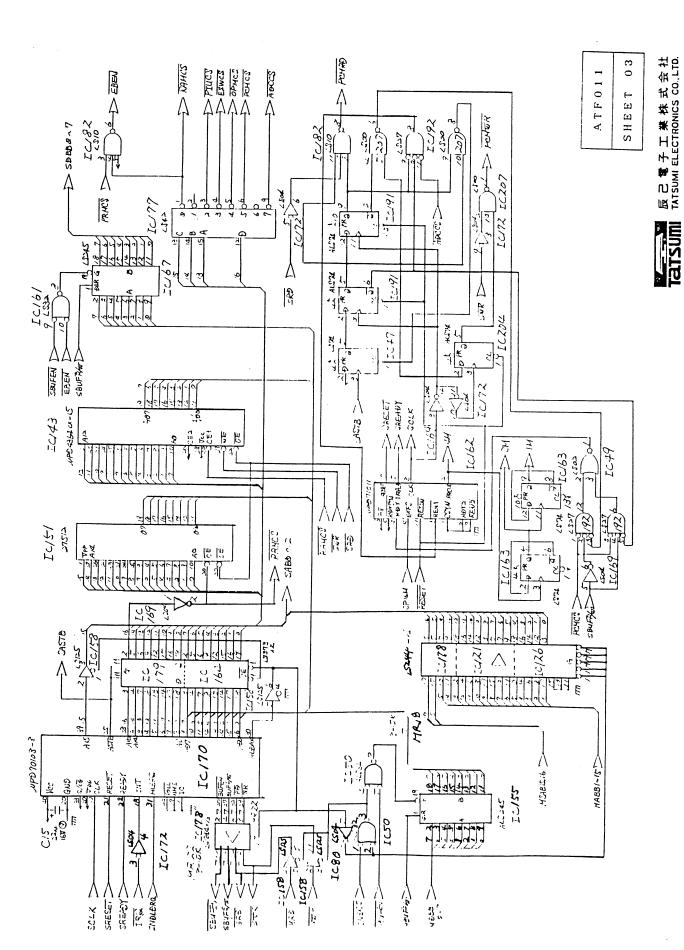
Logic Board — ATF012A

Sound Power Amp — TF02PA
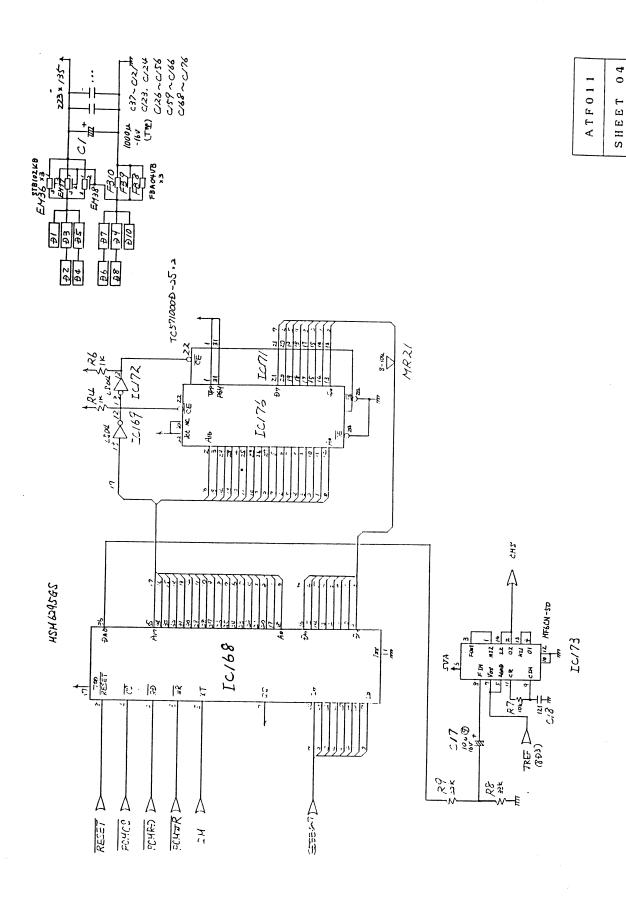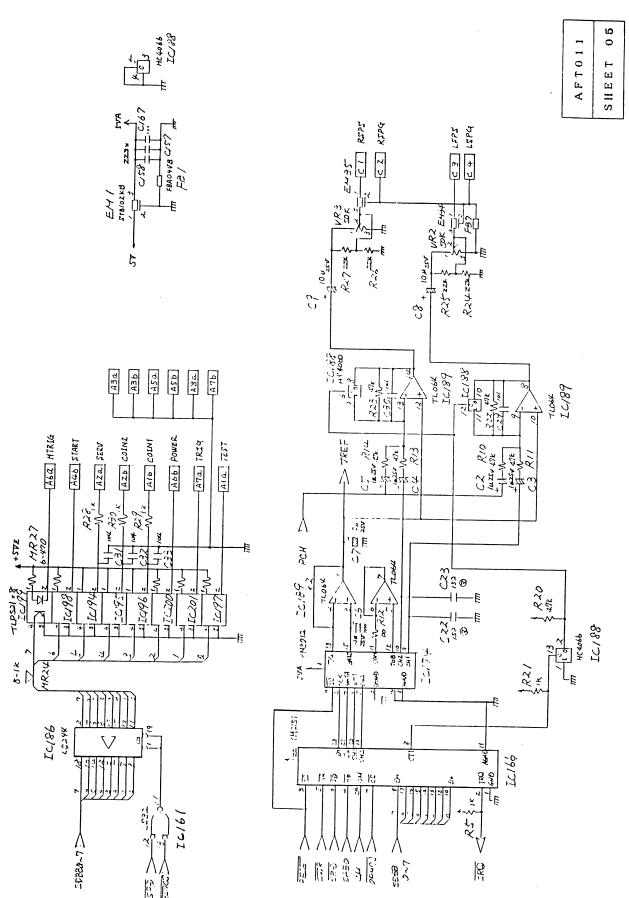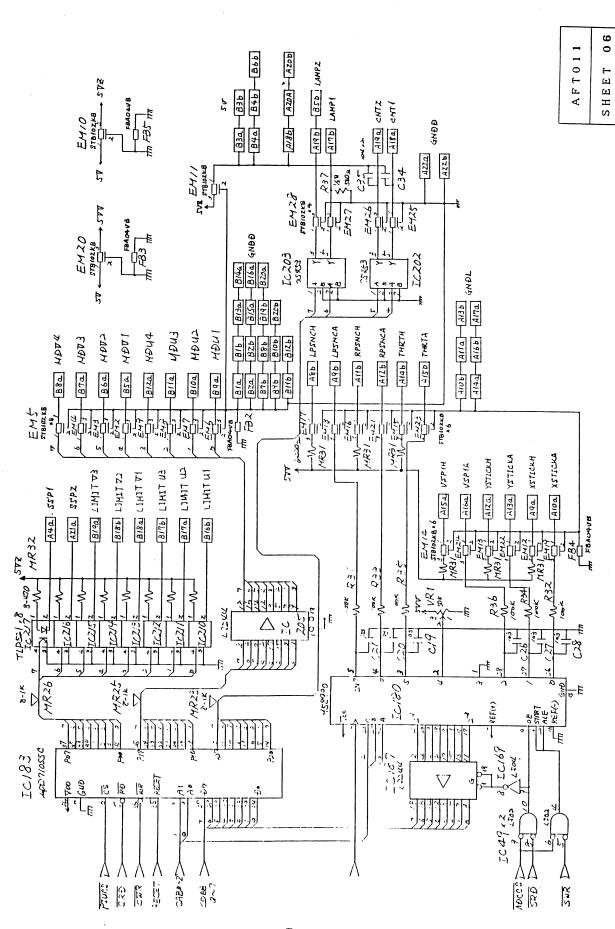
ATF011
SHEET 02

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TATSUMI ELECTRONICS CO.,LTD.

TATSUMI

ATF011
SHEET 03

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TATSUMI ELECTRONICS CO., LTD.

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ATF011

SHEET 07

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ATF012A
SHEET 01

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TATSUMI ELECTRONICS CO.,LTD.
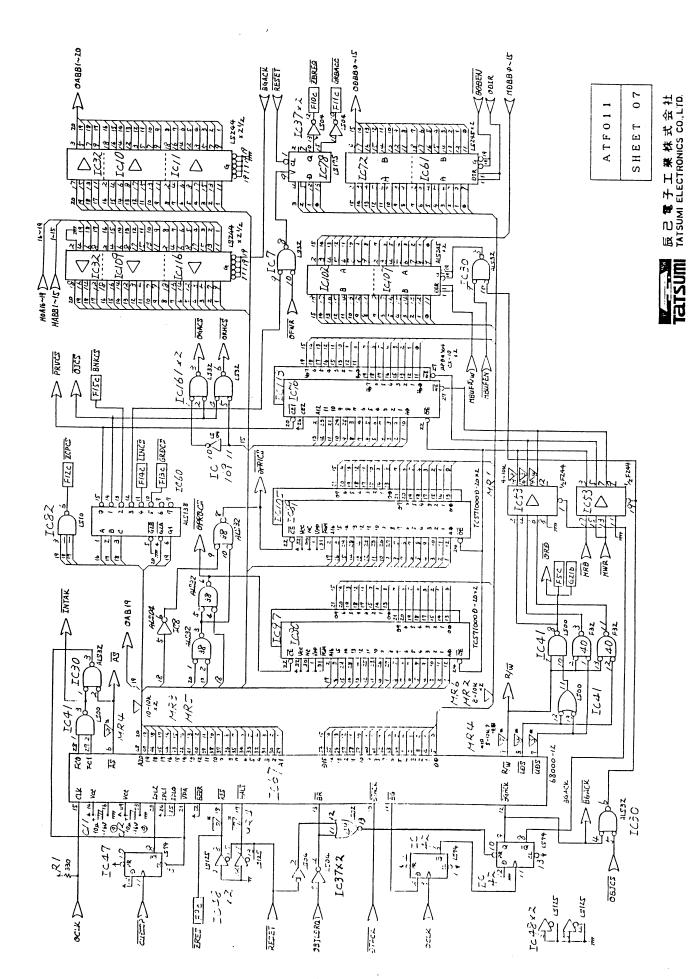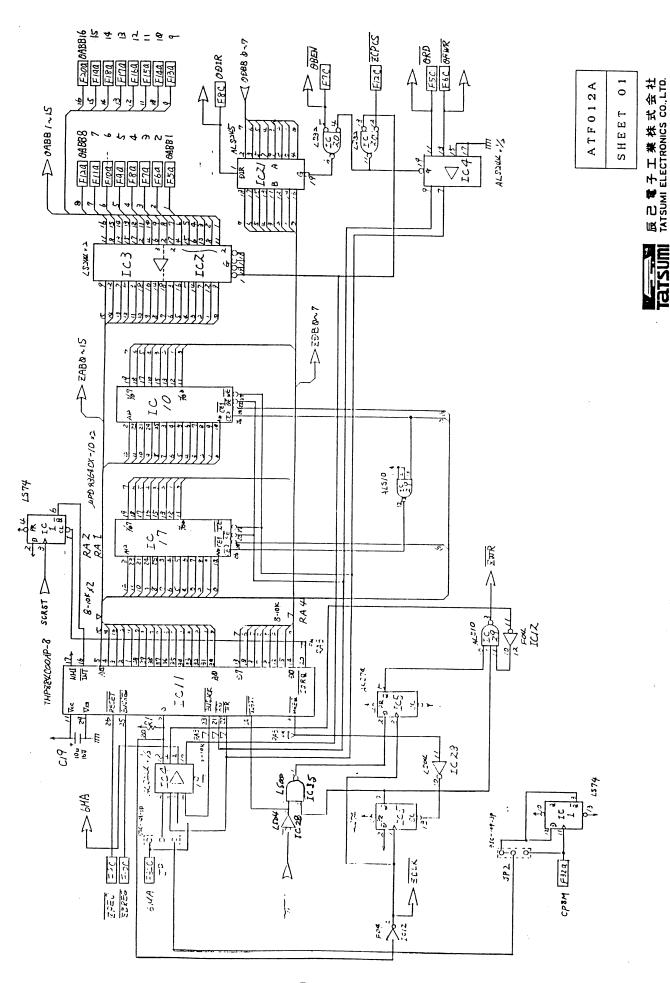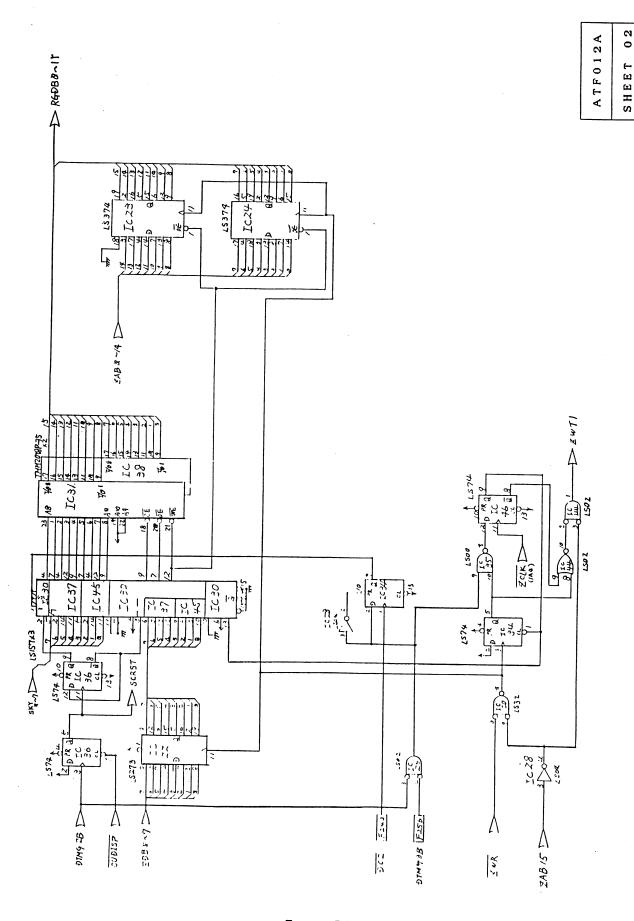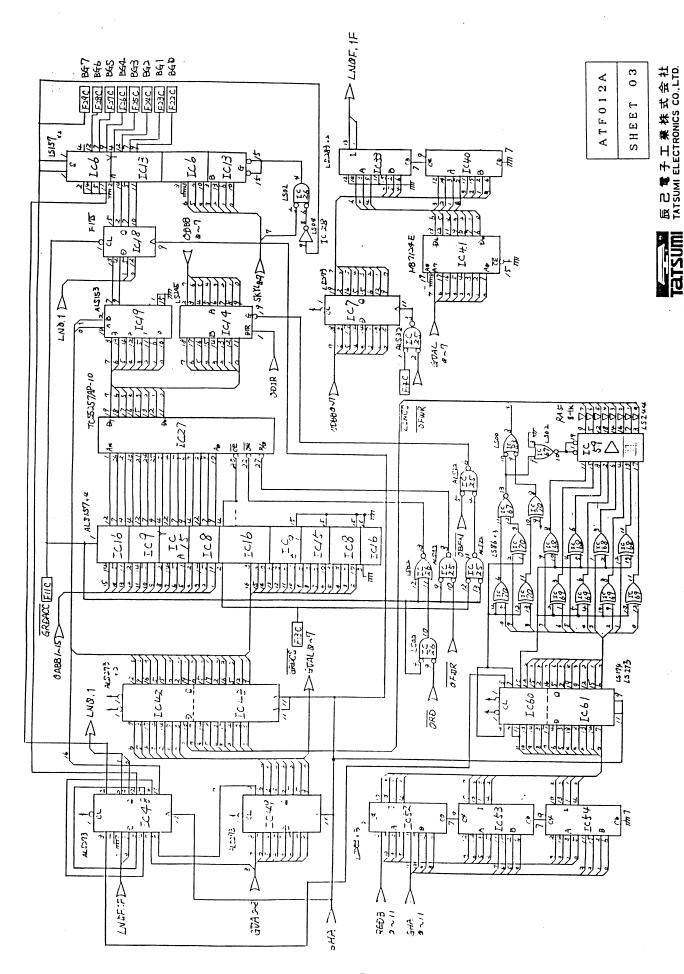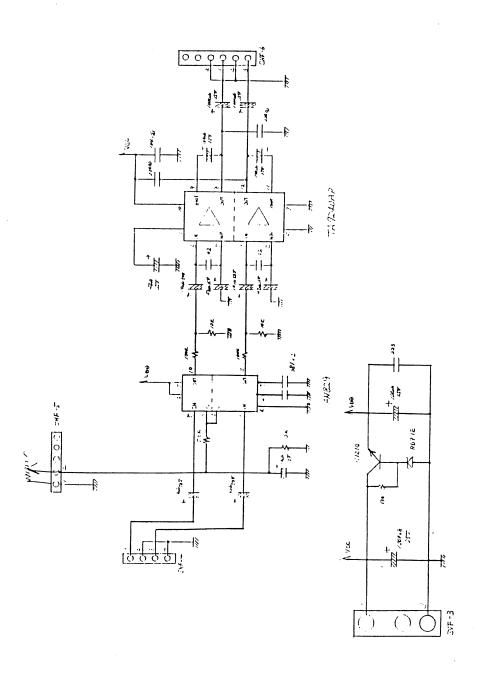
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This APACHE-3[tm] Installation and Service Manual includes schematic diagrams, and should answer almost all of the technical questions thay you may have. Should you require additional, or more detailed information, you should contact the DATA EAST distributor from whom you have purchased the game. His highly qualified staff will, most likely, be able to answer your questions, or give you the proper direction. If, after consulting with your distributor, you still require additional assistance, you may contact the DATA EAST service department at (408) 286-7080, between the hours of 8:00 AM and 5:00 PM Pacific time. When contacting your distributor, or when contacting DATA EAST, please be prepared to provide the serial numbers for the game pcb (printed on the original product seal), the "AAMA PROTECT" sticker, and the game cabinet.

DATA EAST welcomes all constructive feedback, both negative and positive. We would be pleased if you would write us directly with you comments conserning our products and services. Our address is:

Data East USA, Inc.
470 Needles Drive
San Jose, CA 95112
Attn: Customer Service Dept.

Be sure to indicate whether you wish to have your name added to our mailing list for service bulletins and product updates. The form below is provided for your convenience

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APACHE-3[TM] CUSTOMER RESPONSE

COMPANY NAME:_____

ADDRESS:_____

CITY:_____STATE:_____ZIP:_____

TELEPHONE:_____

YOUR NAME:_____TITLE:_____

GAME CABINET SERIAL NUMBER_____

PCB SERIAL NUMBER_____AAMA #_____
(from Original Product Seal)

ADD YOUR COMPANY TO OUR DIRECT MAIL LIST? (circle one)   YES   NO

COMMENTS:_____

_____

_____

_____

_____