

JUNE, 2002

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Rushing around the NIGA show in San Diego is Cruz M. Bustamante, Lieutenant Governor of the State of California.

This month's Slot Tech Magazine may seem a little "mainstream" for some of our readers. It is, admittedly, a little heavy in the show coverage department, with two and a half pages devoted to some very abbreviated coverage of Summit Gaming's open house, the NIGA show and the Southern Gaming Summit.

So, why cover the shows at all if Slot Tech is a technical

magazine? Of what possible interest are these shows to a slot tech? I reckon the answer to that lies in my background as a technician.

As a technician, I have been pretty happy with my work. I love electronics. Troubleshooting is like detective work. Who dunnit? What's wrong? How quickly can I find the problem? You get the drill.

One day, I found the boss' stack of trade journals in the office and I started to read through them. I soon discovered a whole new world. It was a world of business. It was a world of manufacturers and trade shows. Moreover, it was a world in which I wanted to participate. Through the magazines, I got to know the personalities of the folks that make the business tick and the new products and services available to the industry.

My next step was to actually attend a show. Talk about excitement. There were all the newest machines; machines I had never seen before. I was able to play them all and take a look inside to see what made them tick.

While there, I began to recognize industry people that I had seen previously in the magazine. Yep! There they were, in the flesh. I screwed up the courage to start meet-



ing some of them. Many of them remain friends and industry associates some twenty-plus years later. They say, "It's not what you know but who you know." There's a lot of truth to that. Of course, it's best to be both well connected and competent.

I guess the point I am making is that, sure, you may be a slot tech now but one never knows what the future has in store. Through the connections I made at the trade shows, I have been tapped for numerous positions and assignments; jobs that I would likely not have had offered to me if I had remained locked up in the shop, cuffed to the workbench. I have seen the world on training missions for the US Army Recreation Machine Program and the United States Air Force Agency Services. Pretty good for a lowly tech, huh?

That's all for this month. See you at TechFest.

Randy Fromm

Randy Fromm's Slot Tech Magazine

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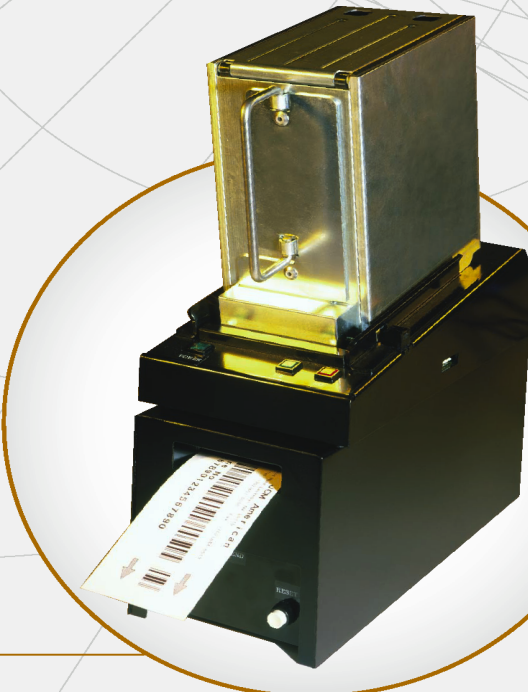


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TOOLS OF THE TRADE

By Bart Holden



While sifting through my mind for a topic that would appeal to our readers who still devote their time at work to the casino floor, I grasped for straws. I stared at various slot parts, test equipment, and co-workers hoping for an ounce of inspiration. As I reached into my shirt pocket for a mint, I felt a familiar item. It was the flashlight glasses that I had acquired about six months back. These glasses have been as precious as gold to me. Suddenly, I was smacked in the face with my subject. I would write about a few of the tools that my co-workers and I have bought or manufactured.

Adjustable Screwdriver

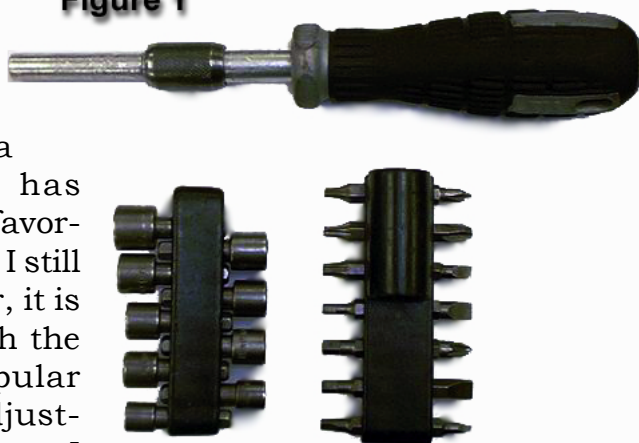
I first began using the adjustable screwdriver about eighteen months ago. A fellow slot technician had

loaned hers to me to remove a handle mechanism and boy was I hooked.

Replacing a handle mech has never been my favorite task and well, I still hate it. However, it is much easier with the help of the Popular Mechanics™ adjustable screwdriver. I purchased mine at Wal-Mart.™ This screwdriver not only adjusts from four to eight inches but it also comes with twenty four bits including Phillips, flat head, hex head, and ten metric and standard sockets. See figures 1 and 2.

What makes this the ultimate handle mech tool? This tool is all you need and then some. It adjusts out to remove and replace the three mounting nuts from the inside of the game. Additionally, it is magnetic which conveniently keeps the nuts from falling on or into the power supply. When it is

Figure 1



time to remove the hex head to detach the handle arm, the screwdriver adjusts to a number of desirable lengths and has the necessary hex bit.

Another advantage of this tool is the manner which it can be carried. The twenty-four attachments are held in two cases that attach to your belt and the screwdriver is placed through a cylinder on one of the cases like a holster. See figure 2. This will decrease the weight of your tool bag tremendously.



The adjustable screwdriver



Figure 2

Lock Tool Combo

This tool is a great addition to your tool bag. My co-worker introduced it to me four years ago. A friend had made it for her when she

worked in Reno. It is composed of a 7/16" wrench welded to a 7/8" deep well socket. See figure 3. I don't know of anyone who sells these, but with a little help, manufacturing your own isn't difficult. All you need is the wrench, the socket, and someone who welds.

Without fumbling around for two tools, you can easily remove the 7/16" nut and the 7/8" nut when removing or installing locks on your slot machines or bases. The deep well socket on the tool pictured was also ground down to approximately three inches to accommodate the limited space when installing door locks. The great advantage to this tool is that you can customize it to meet your particular needs.

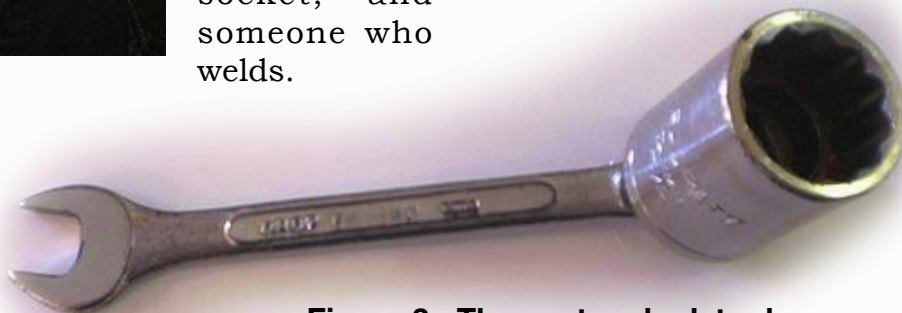


Figure 3 - The custom lock tool

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Secret Agent Flashlight Glasses

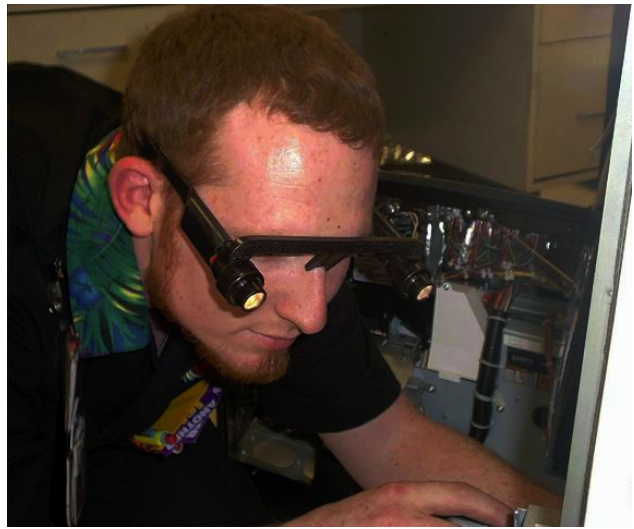
Lastly, I will talk about my favorite gear. I absolutely worship my flashlight glasses which I received from Wholesale Electronics. They are ideal for working inside slot machines and bases. They are completely hands free and shine wherever you look. They fit over prescription or safety glasses. They operate with four AAA batteries and automatically turn on when you put them on your head.

Here is a list of a few of the tasks made simpler with these glasses:

- Reconnecting harnesses to motherboards and power supplies
- Troubleshooting monitors
- Removing handle mechanisms
- Verifying lost bills in cash boxes
- Working on wiring in bases

The glasses are extremely durable. I have not been very gentle with them. They have been dropped, stepped on, and sat on and I have only had to change the batteries. Everything else has operated as intended or better.

These were just a few of the tools that make my job easier from day to day. I'm confident that you also have unique tools tucked away in your bags. I encourage you to email a picture and description of them to me. I'm always on the look out for cool gadgets and such. Talk to you next month.

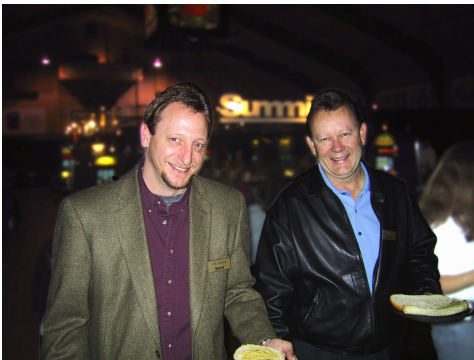


gets and such. Talk to you next month.

- Bart Holden
bholden@slot-techs.com

Slot Tech Show Coverage

Summit Open House and "Mini" TechFest



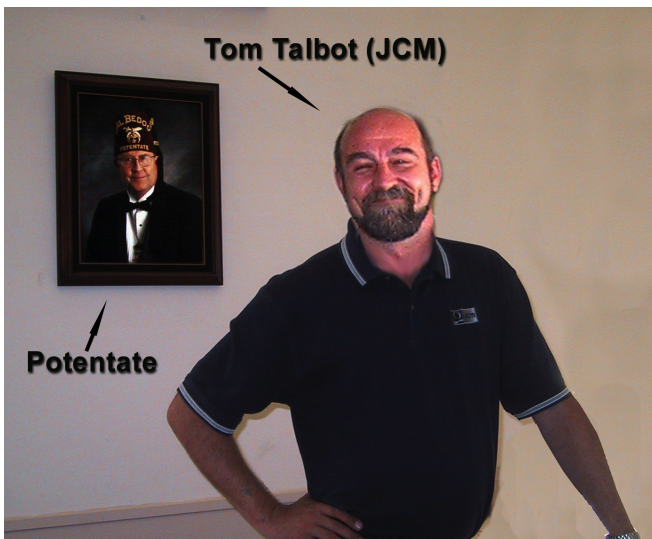
Summit Gaming's West Virginia representative Chris Chriscola (l) in the chow line with Summit partner Bill Rickett

Summit Gaming recently held an open house and customer appreciation day at the Al Bedoo Shrine Auditorium in Billings, Montana where the company is based. Customers were treated to 'round the clock food and drinks as well as a mini-TechFest over the two-day period.

Here we see JCM's Tommy Talbot in action going over their bill validator.



Other seminars were presented by 3M Touchsystems and Ithaca printers as well as a presentation on monitors by Randy Fromm.



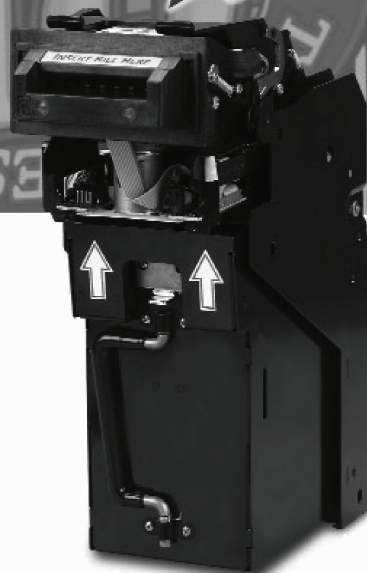
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WMS Gaming issues Certified Supplier Award to Coin Mechanisms, Inc.

Coin Mechanisms, Inc. has received the Certified Supplier Award from WMS Gaming for outstanding achievement and score on WMS' Supplier Evaluation System.

The award recognizes Coin Mechanisms Incorporated as a Certified Supplier. In a letter addressed to Coin Mechanisms, WMS Gaming congratulated the staff for its outstanding score on their Supplier Evaluation System, as well as their ability to consistently supply quality material, on time, to WMS Gaming.

WMS Gaming recently selected Coin Mechanisms' microprocessor controlled model MC-40 for use in its slot machines. The MC-40 features on-board credit optics, an updated coin path geometry to eliminate "shingling", as well as sophisticated timing algorithms which monitor the passage of each coin, confirming validation and acceptance and eliminating the risk of stolen coins or false tilts.

Coin Mechanisms, Inc. is the market leader in supplying coin validation devices to the global gaming machine industry. Its Coin Comparitor[®] and Micro Comparitor[®] platforms are offered as standard original equipment by every manufacturer of regulated gaming machines. Its



Intelligent Comparitor[®], used as part of the SmartMark security system, is the market leader in high security applications utilizing optical recognition of gaming tokens. The recently introduced DEFENDER Series offers the highest level of security yet offered for non-optically marked coins and tokens.

Coin Mechanisms, Inc. sells to original equipment manufacturers, distributors and directly to casinos. With its headquarters outside of Chicago, it offers field support through sales offices in Montreal, Sydney and Johannesburg, and through its European sales agent, Eurocoin Limited, in London.

Contact:

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Toll Free 800-323-6498

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The Manager of Supplier Quality, Joseph Tontodonato, and Senior Commodity Agent, Carmine Greco, both of WMS Gaming, presented Coin Mechanisms, Incorporated, a Certified Supplier Award to Stanley Pierz, President, Dileep Thomas, Quality Manager, and Linda Wawrzaszek, Customer Service Representative.

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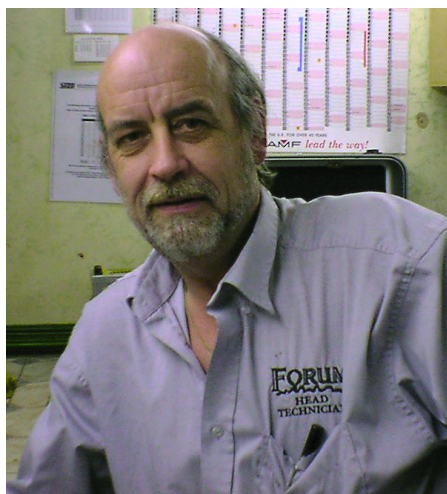
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A Plumber's Guide to Fruit Machines - Part 3

By Gordon Lowe



Now let us look at putting the accepted coin where we want it.

Section 1.f. Mars Sorters

Mars deals with this in the AWP with the 3, 4 or 8 way sorter, the 4 way being the most common. The original 4 way is simply two solenoids activating flaps within the sorter to divert the coins to their required route. This is controlled by the "routing plug." By means of links on this plug, any required routing of individual coins can be arranged. Further information on the routing plug can be found in Section 1.g.

More recently with technological advancement, we now have the "active" sorter. It uses the same principles as the earlier type but the solenoids are controlled by circuitry within the sorter. This again can result in routing problems when exchanging one type for the other. The simple

answer: Don't do it. Replace an active sorter with the same type and save yourself the time (and patience) involved with trying to reconfigure the routing plug. The active sorter was produced in response to problems that arose with validators accepting other than valid coinage configured by the validator. An active sorter can easily be altered to replace the standard 4 way sorter by cutting the white wire within the sorter.

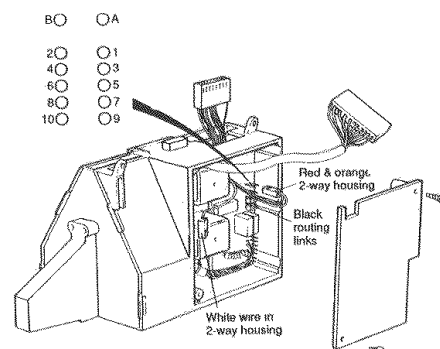
The 3 way sorter from Mars operates on the same principles of solenoids. No routing plug exists and routing is controlled by links inside the sorter that are accessed by removing the side cover. See illustration and Table 2 for more information.

Notes on Table 2 a.

Link pins 9 & 10 to enable acceptance of the 10p coin b. As with the 4 way sorter, any un-nominated coins will default to the cash box route, exit A. c.

Occasionally you will come across an MS125 with no white wire fitted. Should you wish to route the £1 coin to B

or C, disconnect the red or orange wire (whichever is not required) from the green plug that connects to the validator and reconnect to pin 3 of the same plug. This wire is then used as a substitute for the



white wire which is then dealt with as required in the table. An 8 way sorter usually is utilised where the AWP is designed so that when the payout tubes are full and coins are up to a level sensor (see section 2 on Payout assemblies) then any further coins are routed to either a second tube or to the cash box. This is not a sorter that is advisable to dismantle. Without the required jig to re-assemble this unit, you will find it a difficult, if not

Table 2 - 3 way sorter link info

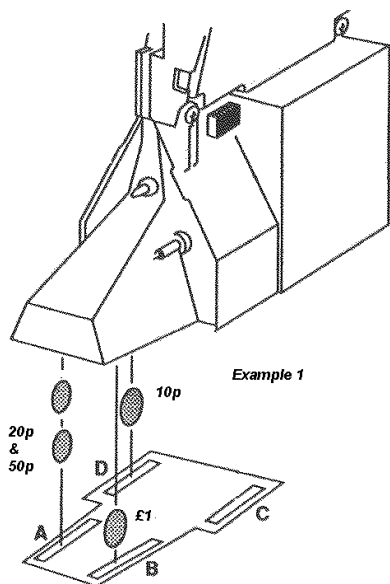
COIN TYPE	10p	20p	50p	1
SEP. EXITS				
B	5-6	1-2 Orange-B	1-2 Red-B	1-2 White-B
C	5-3	Orange-A	Red-A	White-A

impossible task.

Various replacement parts are available for all these sorters but it will be found that this is very rarely necessary. If you have routing problems, check physically that the flaps are free with no broken parts and that the return springs along with the plungers mounted at the side have not disappeared. It does happen!

Section 1.g. Mars routing plug configuration (ME/MS100 series)

The linking configuration required to route coins to particular sorter exits can at first be confusing. Then, when you think you have the hang of it, along comes a validator with a different amount of pins and it throws you completely. Better it throws you than you throw the validator across the room



The 'Field Engineers Manual for Amusement Products' based around the ME/Slot Tech Magazine

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MS100 series and available from Mars Electronics will be helpful when trying to make up a routing plug from scratch but I have tried to show a more straightforward way in Table 3 (the pinout configuration for the validator routing plug). First of all, see how many pins are on the validator, then write down which coin you want on which route.

For example, We have a 14 way connector on an MS126 and require the following, 10p to route D, 20p & 50p to route A (default cash box route) £1 to route B, no coin required to route C (see example 1).

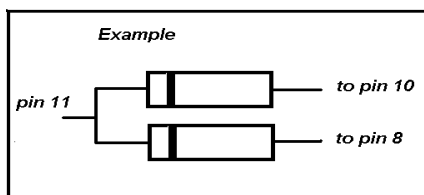
Normally coin A=5p, B=token, C=10p, D=20p, E=50p and F=£1 (unless the validator coin channels have been re-programmed for some reason, i.e. 50p line has been altered to accept £2 coin in place of it, coin B would then become the £2).

Then, from table 3, define the routing channels required. Replace the coins you have written down with the relevant coin letter. e.g. cross out the £1 and write against it 'F', etc. What you will then have written down should be - coin C-channel D, coin F to channel B, coins D & E to default cash box (A) any coins channels like this not connected will automatically go to route A. Route C is not required in this particular instance so what we must do is

link that route pin to one of the ground (0 volt) lines. What can happen if you don't do this is that one of the undefined coins (like the 20p & 50p coin in this example) are likely to take this route.

So now we look at the table against the 14 way column. From this we can see that the following links would be required: link pin 14 to pin 5, link pin 6 to pin 13 and pin 11 to 3,9 or 12 to disable route C. Finally, link pin 2 to pin 4 to enable the acceptance of the 10p coin. This final link will be required in all cases. (Later in the Plumber's Guide, you will be presented with a "Quickroute Guide" to make your life easier.)

If the case arises where you need to put 2 or more coins down the same exit (other than the default route A) this is simply done by the use of a pair of diodes. These can be just about anything, such as 1N4148 or any of the ubiquitous 1N400X series of 1 amp, general purposed diodes. The easiest way of showing how is to illustrate it as follows:



This will route both coins D & E, 20p & 50p (pins 10 & 8) to route C. Note the direction of the diodes with the banded ends (the cathodes) linked

together onto the required route pin (route C input pin 11 in this case).

Three coins required to the same route follows the same pattern. Just add a third diode to the required coin signal pin with the 3 diodes all linked at the cathode end to pin 11.

Having gone through all this procedure, I will now give you an easier way! Find another machine with the same routing, and copy the routing plug. Unfortunately, this is not always possible and you won't learn anything.

Table 3 detailing the routing plug connector on the validator warrants further explanation. Firstly, the INH A & C and the SCI pins. INH is abbreviation for inhibit. These are the inhibit connections for coins A and C which are tied together. SCI is the Steering Control Input which controls the routing of these same coins. It is worth pointing out here that coin A refers not to the 5p coin, but to the old 10p coin, so reference to the A coin in this instance can be ignored as we no longer have to handle this particular coin.

The INHA+C/SCI pin must be linked to the INHA+C logic input pin to enable the acceptance of coin C, usually the 10p. In all cases except the ME/MS111 validators, this link must be present. If no separator is fitted, a shorting link is required otherwise, this coin will be rejected. By linking the SCI logic input

pin to INHA+C/SCI pin the exit route of coin C will be exit C.

The above detailing is intended only as further information and would not be required under normal circumstances. Only where making up a routing configuration from scratch would this be of assistance.

The 8 way sorter routing can be complicated and once again finding another machine with the same routing configuration and copying the routing plug is the easy way round a problem. Table 4 shows the 20 way routing plug configuration required for the ME/MS129, 8 way sorter where a single coin is to a single exit. What may appear a little confusing is the two sets of exit

TABLE 3

14 WAY ROUTING CONNECTOR

PIN	FUNCTION	PIN	FUNCTION
1	SCI LOGIC I/P	2	INH C/SCI PIN
3	0 VOLT	4	INH C LOGIC INPUT
5	ROUTE D INPUT	6	F COIN SIGNAL
7	CONFIGURE INPUT	8	E COIN SIGNAL
9	0 VOLT	10	D COIN SIGNAL
11	ROUTE C INPUT	12	0 VOLT
13	ROUTE B INPUT	14	C COIN SIGNAL

18 WAY ROUTING CONNECTOR

1	INH C LOGIC INPUT	2	INH A LOGIC INPUT
3	SCI LOGIC I/P	4	INH C/SCI PIN
5	0 VOLT	6	INH C LOGIC INPUT
7	ROUTE D INPUT	8	F COIN SIGNAL
9	CONFIGURE INPUT	10	E COIN SIGNAL
11	0 VOLT	12	D COIN SIGNAL
13	ROUTE C INPUT	14	0 VOLT
15	ROUTE B INPUT	16	C COIN SIGNAL
17	A COIN SIGNAL	18	B COIN SIGNAL

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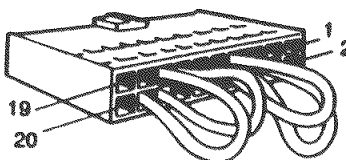
pin connections. The second set is used where coins are rerouted to another exit when payout tubes are full. Diode links are required in this situation and would advise referring to the "Mars Engineers Manual for Amusement Products" mentioned previously. When using this table take note that even numbered coin pins must be linked to even numbered exit pins, and odd numbered coin pins to odd numbered exit pins. i.e. coin D to exit 4 would require a link from pin 18 to pin 8. Also note any un-nominated coins will route to the default cash box exit 8.

TABLE 4

TOP ROW		BOTTOM ROW	
PIN	FUNCTION	PIN	FUNCTION
1	EXIT 7	2	EXIT 7
3	EXIT 6	4	EXIT 6
5	EXIT 5	6	EXIT 5
7	EXIT 4	8	EXIT 4
9	EXIT 3	10	EXIT 3
11	EXIT 2	12	EXIT 2
13	EXIT 1	14	EXIT 1
15	5P (COIN A)	16	TOKEN (COIN B)
17	10P (COIN C)	18	20P (COIN D)
19	50P (COIN E)	20	£1 (COIN F)

To be continued . . .

- Gordon Lowe
glowe@slot-techs.com



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TransAct Technologies Incorporated (Nasdaq: TACT), a leading producer of transaction-based printers for customers worldwide, has announced an alliance with American Gaming and Electronics, Inc. (AGE), a wholly owned subsidiary of Wells-Gardner Electronics Corporation (AMEX: WGA). Under the agreement, AGE will provide onsite maintenance, repair and replacement services to every casino in the U.S. and Canada for TransAct's Series 70 impact, and 700 and 800 thermal printer families.

Bart C. Shuldman, Chairman and Chief Executive Officer of TransAct Technologies, commented, "Having AGE on board gives us an experienced service partner to enhance our customer relationships and continue our penetration in the casino gaming market. AGE shares our commitment to providing fast and high quality service. With this alliance, AGE will have its team of service and sales professionals providing the casinos with onsite service and spare parts. This is essential to our growing list of casino gaming customers given that costly machine downtime is not an option. We are excited to have AGE join with Transact to offer the casino market world-class products and services."

Mark Komorowski, President of AGE, said, "We have spent a significant amount of time researching advanced printer options for the casino gaming market as it is a natural extension of our current business and customer base. It became overwhelmingly clear to us that TransAct was technically speaking, the stron-

Slot Tech Magazine

gest company in this segment with a superior, field-tested printer line. We look forward to helping TransAct and AGE further penetrate the casino marketplace."

For further informaton, contact:
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The Continuing Adventures of Test Fixture Development

By Herschel Peeler



In previous articles we have seen what the microprocessor instruction set looks like and overviewed a description of the board. In this article, we will put the two together and show how the program manipulates the circuits on the board. This serves as an excellent tutorial on elementary programming. Since the microprocessor used is quite popular in the gaming industry, this is also an excellent application of how some of the games operate in detail.

First we will review what assets the Telpar Printer Control Board has that is of concern to the program we will write. Memory is laid out as follows:

Memory and I/O spaces

0000 - 3FFF Program space

0000 - 1FFF RAM Data space

Since Program memory (the EPROM) and Data memory (the RAM) use different

Strobe lines, memory address can overlap. Reading and writing to addresses in the 8000 range reads the DIP switches or writes to U1 and U2.

8000 (Read) - Reads the 4-section DIP switch and the four extra inputs (OL, PF, E2, PO)

8001 (Read) - Reads the 8-section DIP switch.

8005 (Write) - Writes to the latch that feeds U1 and U2.

Of the program space, certain addresses have dedicated uses as specified by the design of the microprocessor. When we pull on the "reset" line, the microprocessor

starts executing at address 0000(hex). We must use these addresses to go to the routine that will be executed on Power up or reset. Since we do not want interrupts to interfere with this process, we must put an instruction here to disable all interrupts, followed by a jump to the routine that will do the reset (what ever we want to do after we get a reset).

Figure 1 shows an example of what this part of our program looks like. The column under "Addr" is what address the steps will be at in program memory. Under "Machine" is the actual machine code that

Addr	Machine	Assembly	Description
0000	02 01 00	LJMP 0100	Long Jump to address 0100 (Reset).
0003	02 02 00	LJMP 0200	Long Jump to address 0200 (Int 0).
0006			(unspecified, as yet)
0007			(unspecified, as yet)
0008			(unspecified, as yet)
0009			(unspecified, as yet)
000A			(unspecified, as yet)
000B	02 03 00	LJMP 0300	Long Jump to address 0300 (Tmr 0).
000E			(unspecified, as yet)
000F			(unspecified, as yet)
0010			(unspecified, as yet)
0011			(unspecified, as yet)
0012			(unspecified, as yet)
0013	02 04 00	LJMP 0400	Long Jump to address 0400 (Int 1).
0016			(unspecified, as yet)
0017			(unspecified, as yet)
0018			(unspecified, as yet)
0019			(unspecified, as yet)
001A			(unspecified, as yet)
001B	02 05 00	LJMP 0500	Long Jump to address 0500 (Tmr 1).
001E			(unspecified, as yet)
001F			(unspecified, as yet)
0020			(unspecified, as yet)
0021			(unspecified, as yet)
0022			(unspecified, as yet)
0023	02 06 00	LJMP 0600	Long Jump to address 0600 (Serial).
0024			(unspecified, as yet)
0025			(unspecified, as yet)
0026			(unspecified, as yet)
0027			(unspecified, as yet)
0028			(unspecified, as yet)
0029			(unspecified, as yet)
002A			(unspecified, as yet)
002B	02 07 00	LJMP 0700	Long Jump to address 0700 (Tmr 2).
002E			(unspecified, as yet)
002F			(unspecified, as yet)
...			
0100	75 A8 00	MOV A8, #00	Move to address 0XA8, #00 (Disable all
			Interrupts)
0103	90 80 00	MOV DPTR, 8000	Set up the Data Pointer to point to address 8000
0106	E0	MOVX A, @DPTR	Move what is at address 8000 to the Accumulator
0107	F8	MOV R0, A	Move the Accumulator to R0.
			(The beginning of our Reset routine)

IE - Interrupt Enable Register (0XA8)

7	6	5	4	3	2	1	0
EA	--	--	ES	ET1	EX1	ET0	EX0

will be in that address. Two hexadecimal digits to one byte of memory. Under "Assembly" is what that machine language does in something close to human language. Under "Description" is the action being performed in plain English.

At address 0000, 0001 and 0002, we have our first instruction that requires three bytes. When the microprocessor gets a reset, it will jump to the beginning of our routine at address 0100(hex). To keep with the same conventions used by IGT and most others, when referring

to a hexadecimal number we will prefix it with a "0X." Text "0X0100" refers to a hexadecimal number "0100." Now you know what those error codes that start with "0X..." are on those error screens.

Inside the microprocessor, address 0XA8 is our Interrupt Enable Register. Clearing it to all zeros disables the microprocessor's ability to respond to an interrupt.

After disabling interrupts, we will check to see what operation we are to perform by reading the DIP switches. We

set up the Data Pointer to address 0X8000, and read that address into the Accumulator. We then save that value in internal register R0. Following instructions can analyze R0 and see what switches are set.

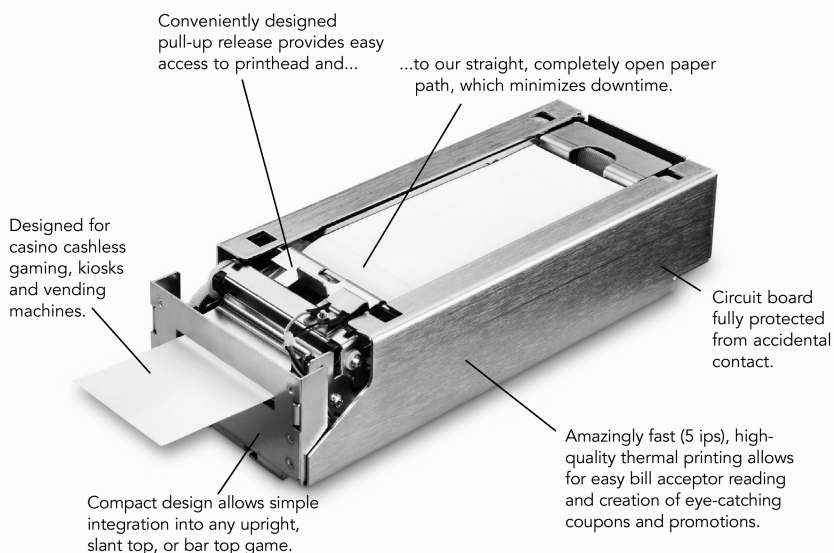
All games read the DIP switches in a fashion similar to this. This is why you must cycle the power on games before changes in DIP switch settings take effect.

Similarly, we have jumps to other routines that will eventually handle various Interrupts. The addresses 0100, 0200, 0300, and such, were chosen arbitrarily. We could have put them anywhere in program memory.

- Herschel Peeler
hpeeler@slot-techs.com

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The 9th annual Southern Gaming Summit was as exciting as ever. Each year the number of booths grows by leaps and bounds. It was held May 8-9, 2002 at the Mississippi Coast Coliseum and Convention Center in Biloxi, Mississippi and drew visitors from every gaming jurisdiction including a record number of attendees from the tribal nations.

The manufacturers' booths were heavily dominated by television show themed slots with titles such as Beverly Hillbillies, Hollywood Squares, Survivor and Elvira. I found it interesting that Konami has broken into the slot machine industry with some great video games, featuring interactive bonuses that you would expect from a company founded in the arcade business.

Wholesale Electronics and Happ Controls had great booths set up. They handed out copies of Slot Tech Magazine to all of the slot technicians who stopped for a visit.

SGS 2002 Showcases Television Themed Slots



Show coverage by Bart Holden

With TV show based slots being a major theme at the summit, IGT unveils its new progressive video slot machine, "The Beverly Hillbillies". Granny sits atop the machine in her rocker with her shotgun and bottle of Jed's XXX white lightning.



Here are two new proprietary slot machines from AC Coin and Slot. On the left is the Hotline slot machine complete with the handset, which is not permanently attached to the machine. Is it just me or can the rest of you picture an angry patron turning this into a weapon? On the right is the Monster Match, which plays the song "Monster Mash" while being played. Both feature bonus reels and random multiplier bonuses on the top box.

And what gaming summit would be complete without the free food and drink booths. Everyone seemed to be having a great time networking, eating, drinking, and trying out the new slot machines.

One of the products featured at the Southern Gaming Summit is the Dataman S4 Validator. It is capable of performing 100% bit by bit comparisons with the master program while fitting in your hand. It supports EPROMs, EEPROMS, and FLASH up to

4Mbits. And best of all, when compared to other validation units, it is inexpensive. Look for a feature article on this device coming soon to Slot Tech magazine.

Another of the new products displayed at the summit, the JCM intelligent cashbox is awesome. It utilizes a tracking system to ensure that the correct box is installed in your slot machines. That's right no more mix ups and the annoying variances they cause. If the wrong cashbox is placed in a machine, the validator is disabled. For a brief look at the intelligent cashbox, refer to page 22 in this issue of Slot Tech.

- Bart Holden



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Slot Tech Magazine writer Bart Holden and 2002 Rock and Roll Hall of Fame inductee Isaac Hayes. Mr. Hayes is forever linked to his 1971 hit "Theme from Shaft" which earned him an Academy Award for best score and became a number one hit. Today Mr. Hayes stays busy as the top rated radio personality for New York City's 98.7 KISS-FM and performing as the voice of Chef on Comedy Central's "South Park". He attended the Southern Gaming Summit to promote WMS Gaming's new Hollywood Squares slot machine in which he is featured.



Slot Tech Magazine

This is Bally Gaming's new 2-coin progressive Playboy slot machine, Miss January 1996 Playboy Playmate Victoria Fuller, and me. The machine was pictured in Slot Tech Magazine March 2002 in the coverage of ICE but without the bunny. *Randy, I couldn't resist. If Popeye had been around I would have stayed away. Ok, maybe not.* The slot machines are available as either \$1 or \$5 games.

June, 2002



Elvira sits atop this new slot machine from IGT.



Another of WMS Gaming's new slot machines, Pac-Man is sure to be a hit at casinos. I had to wait forever to get a picture of the slot machine without someone playing it. They stayed busy all afternoon.

Page 19

By Martin Dempsey



Sphinx & Multi Risk From Stella At Prague Show

Top managers need to be on the pulse of innovation, so everybody was quick to see the shine of the new STELLA INTERNATIONAL stars; the AWP games SPHINX and MULTI RISK were exclusively released for the Czech market on the 'WORLD OF ENTERTAINMENT 2002' in Prague. SPHINX and MULTI RISK are especially developed for Czech arcades. In addition to the exciting basic game with five different stakes (1 to 5 credits), both games feature the dynamic No-Lose Risk Ladder allowing top wins of up to 750 credits with the option to risk half the win. MULTI RISK really takes risk to the max, offering a second Up-To-The-Top Risk Ladder. Strategic players have to decide when to change between the two risk ladders for maximum chances. Stella International is dedicated to producing only the highest quality of entertaining games and products. To find out more information about Stella International, please visit the website at <http://www.stella-international.de> or contact Susanne Rose. Phone +49 (0) 5741-273-515.



"Oh My God, They're Killing The Competition!"

Maygay are proud to announce the official launch of the very latest 50p / £20 SWP from Maygay Machines, the smutty yet sensational South Park. First seen in prototype form at ATEI 2002, this game is now tried, tested and ready to rock 'n' roll. Brought to you in association with Comedy Central, creators of this comic cartoon classic, South Park combines the irreverent smash hit hilarity of the cult television series with the challenge of not one, but two, repeatedly proven SWP concepts. Dudes, this baby really does kick ass! The game itself is a blend of general knowledge trivia and keen observation. Kyle, Cartman, Kenny and Stan provide the multiple-choice options and correct selections provide the player with the opportunity to select pairs of characters from a grid. "Well, there you have it, case closed." For further information, please contact Nick Hardy, Maygay Group Marketing Manager. Tel: +44 1902 792 320. E-mail: nick@maygay.com



Go On, Be A Devil!

Red Gaming has launched Demon Streak, its brand new low-tech £25 jackpot AWP game for bingo clubs and arcades. Steve Wooding at Red Gaming commented; "Reaction to this game has been fantastic. Since Demon Streak's preview at ATEI

this year the product has performed very well indeed on test and we are really pleased with the feedback regarding the visual impact as well as the cashbox data." Demon Streak gameplay offers players the chance to trigger a 'Demon Streak', if both 'devils' appear at the same time on the winline, along with further 'hidden' features from flaming fruit symbols. Steve Wooding added "In order to cater for all players, we have provided an easy play feature on Demon Streak, which has proved really popular during testing. This feature enables any combination of auto start, auto hold and auto nudge to be easily activated via 3 selectable buttons. "With Demon Streak stylishly presented in a Showtime compatible Rio cabinet, it all adds up to a new game with maximum impact and entertainment for maximum earnings!" For further information, contact Trevor Greenwood, Tel: + 44 (0)1132 2254444. Email trevor.greenwood@mediaworksocl.com

R. Franco At Torremolinos 2002

R. Franco attended the recent edition of the Torremolinos Show with a stand inspired by its star AWP machine "Kiss the Frog", its latest AWP machine with two lines of reels and a mechanical roulette on top. This attractive game offers the possibility of obtaining prizes up to 400 coins with simple bets and 600 coins with simultaneous bets. R. Franco also presented the AWP's with the best performances in 2001, that have reached the top sales figures in its domestic market, Santa Fe Lotto, Casino Sorpresa and Santa Fe Mini, all adapted to all Autonomous Regions. Within its Casino range R. Franco presented four



R. Franco's King Solomon's Mines

different models: Multi Deck Poker, Lucky in Love (reels), King Solomon's Mines and Golden Puppy (video), the latest one with new glass and more attractive additional features. Franco Vending attended the Show with its popcorn vending machines and with regards to the Bingo industry, BINGdata presented its latest and most advanced terminals, communication and interconnection systems with new bingo designs. This new plant will enhance and improve the manufacturing processes that will result in fast production and better services to all R. Franco's clients.

Technology From Austria Defines Swiss Casino Standards

The new Swiss casino operations have achieved exemplary status throughout Europe not only in terms of legal regulation and control, they will also be setting new international standards in slot gaming and electronic live games. Standards that are defined by Austrian cutting-edge casino and slot gaming technology, as Austrian Gaming Industries (AGI) supply nearly 60 per cent of the new gaming devices, giving the company undisputed market leadership in Switzer-

land, says AGI managing director Jens Halle. According to Mr. Halle, the enormous amount of trust placed by the new Swiss casino operators in the wholly-owned subsidiary of the Novomatic Group of Companies is based on a large number of factors: The deliveries will incorporate the leading products in electronic live games such as Multi-Player Roulette systems and Touchbet

Live Roulette installations as well as the newest StreamLine Series which thanks to their ultra-slim design will make the Swiss casinos the most elegant modern gaming facilities in the world, concludes AGI's Managing Director. For further information contact Karl Neidel, Communications Manager. Tel. +43 2252 606 ext. 242.

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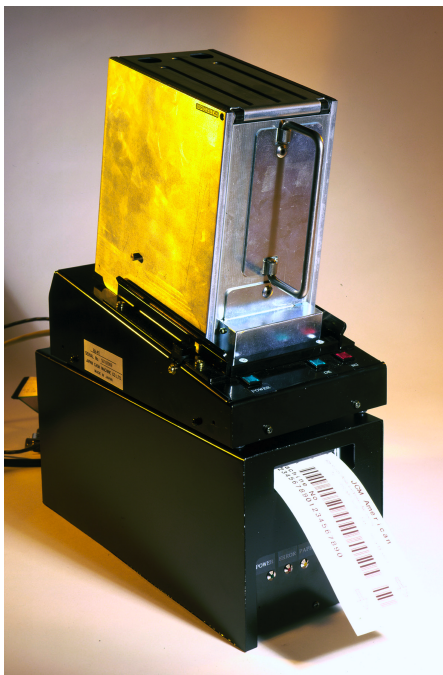
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Great G2E Gadgets for Slot Techs – The Saga Continues



Widgets...gadgets...gizmos...Call them what you will, but a slot tech can never have too many state-of-the-art tools, especially when they're designed to make his life easier and keep the casino floor alive with the sound of slot machines humming, jingling and jangling.

JCM American Corporation, the world's leader in developing bill validators and related gaming technologies, knows how to keep slot techs happy and two new products in particular, each on display at G2E 2002 (booth #420), are designed to fit the bill. "Our overriding goal is to make the job of the slot tech easier by providing tools, information, training, quick part delivery and component exchange programs," said Tom Nugent, director of sales and marketing, JCM. "At G2E we want slot techs and

managers to test drive our new technology and ask us hard questions about how this technology keeps the slot machines running."

Introducing the Sentry™ – Easy Diagnostics for the Slot Tech

One of JCM's key G2E gadgets will be the Sentry, an icon-based bill acceptor accessory that ensures maximum slot machine uptime by quickly diagnosing a game-stopping glitch and alerting the slot tech via a brilliant light show of green, orange, red and blue LED's, easily seen from 100 yards away. The six icons indicate three types of required service: "no cash box access," "cash box access required" and "remove validator for service." Designed to work with the JCM bill acceptor, the Sentry is adaptable to slot machine configurations and software protocol.

"The benefit of the Sentry is simple yet strategic," said Nugent. "If the casino operator's goal is to maximize slot usage, the slot tech needs to know there's a problem with a bill validator and what it is, and he needs to know right away. Otherwise, that machine can sit on the casino floor overnight or for days before somebody realizes the validator is out of

order. And it's far better for the slot tech to hear about it from a JCM Sentry than from a casino patron!"

The Sentry is more than a technical gadget, however – it's an internal information unit with a last-bill denomination indicator to help settle disputes and software to track consecutive rejects, distinguishing between repeat attempts with a crumpled bill and possible attempts to pass counterfeits. The Sentry will be up and running at JCM's G2E booth, where staffers will offer demos, and will be installed on many of the OEM slot machines displayed at the show. "We hope to see slot techs at the JCM booth because they are the professionals who make decisions on maintenance," said Nugent. "Our message will be that, for slot techs, the Sentry is a given in their game."

Intelligent Cash Box: Say Goodbye to the Dumb Safe

Slot techs planning a trip to G2E to check out the latest techno gear will welcome JCM's new Intelligent Cash Box (ICB), engineered to significantly reduce key entry errors during soft count reconciliation. Harnessing the power of a highly sophisti-

cated memory module, the ICB tracks itself from slot machine to soft count room, with little or no manual intervention, as it lets casino personnel know how many bills are inside, what time the cash box was installed and what game the box came from.

With a cash box this smart, there are fewer chances of errors and theft as the safe is transported from the casino floor to the accounting office. "Variances are expensive," Nugent said, "and every time one occurs it has to be investigated. Keeping variances to a minimum maximizes slot machine play as well as the slot tech's extremely valuable time and expertise."

Another plus for the Intelligent Cash Box is that, if the slot tech tries to start a game, he may be unaware of a problem. "In effect, the JCM system tells him, 'I'm not ready to go yet', thereby helping him diagnose a problem before a patron can spot it," said Nugent. Additionally, when the slot tech or casino staffer is putting in a cash box, he doesn't have to wand the bar code on the machine or on the box because the JCM software handles this. "Just pick up the box and go!" said Nugent.

To learn more about G2E 2002, to exhibit or to pre-register for free exhibits-only admission and discounted conference rates, prospective attendees can visit www.globalgamingexpo.com.

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Omniview

By Dion Anderson



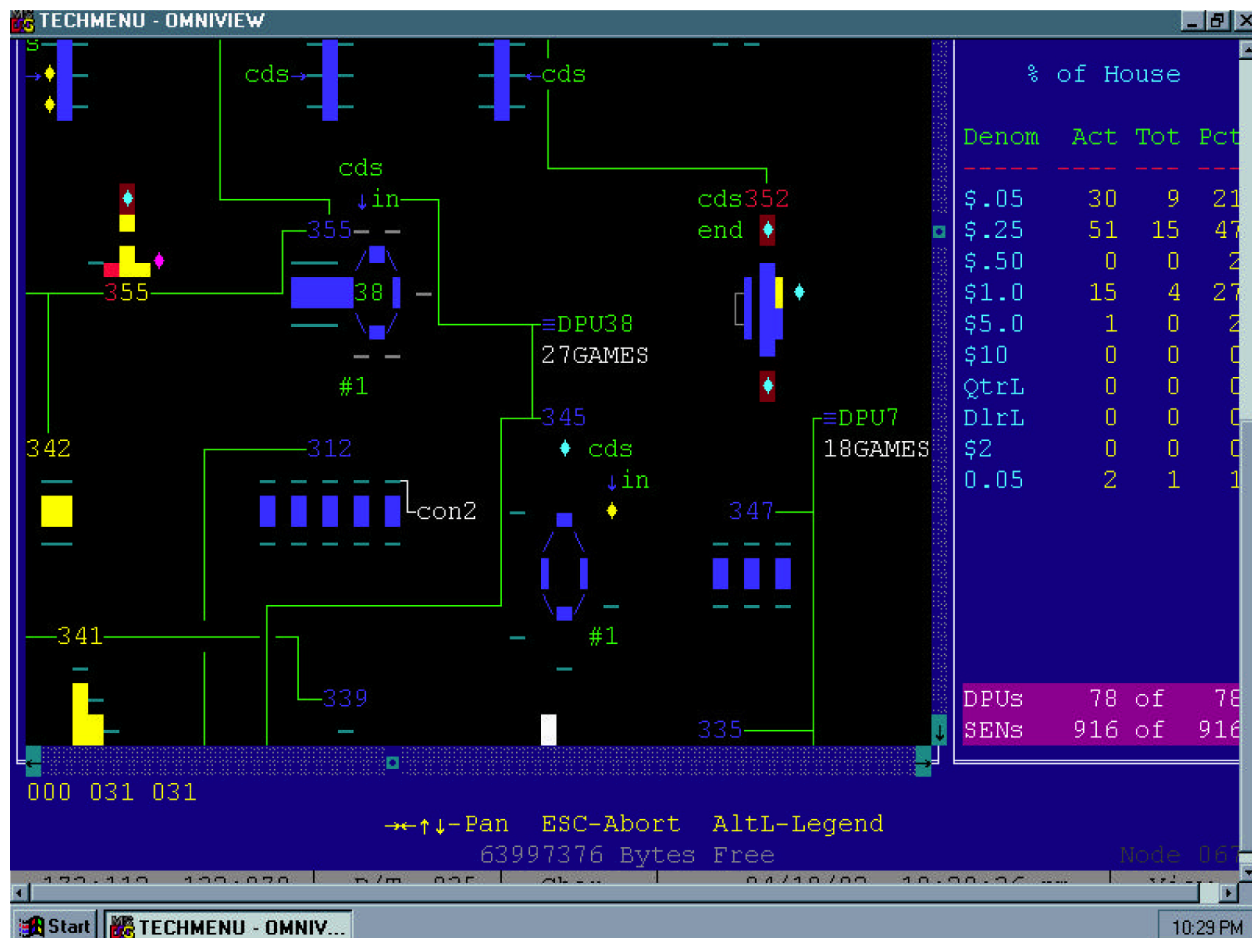
When you log in to the tech menu of CDS, go into the Oasis program menu. From there, go in to Omniveiw. Af-

ter logging into Omniveiw, if there is no floor plan present you will have a blank screen. On the bottom of the screen there will be from left to right, right, left, up and Down arrows. This indicates that you should use your keyboard arrows to move around the screen.

Then there will be f1-CHAR (characters), f2-REPEAT, f4-DPU, f9-SAVE, f10-MENU, ATL-L-LEGEND. Selecting f1 will give you all kinds of angles, lines and blocks at

the bottom of the screen. These are the things you will use to piece together your floor plan.

Again, scroll through them using the arrow keys on your keyboard. Once you find the item you wish to use, hit ENTER and it will appear on your floor plan. You can hit f2 and repeat the symbol as many times as you need until you hit f1 and select a different one. If while working on the floor plan you accidentally hit f1, just hit Esc



Omniview let's you see at a glance what's going on on the slot floor.

and it will back out of the char menu. F4 is for your DPUs. Hit f4 and a DPU symbol (it looks like three lines) will appear on the floor plan wherever the cursor is at the time.

To address the DPU, move your cursor on the symbol and hit enter. At the bottom of the screen, it will ask you for the DPU number. Just type in the DPU ID number and hit enter. The DPU is now assigned whatever number you gave it. You can move the cursor back on to it and it will give all the stats for all the games on the line. You can have as many DPUs in Omniveiw as you wish without causing any problems to anything else in the system. As Omniveiw is not real time like the floor monitor, it comes in handy for troubleshooting line problems. On the floor monitor, you will get a line Xed out. In Omniveiw, you'll get symbols. If you do have a line problem, watch Omniveiw and it will show you the first game to go off line. That's a good place to start looking for problems.

When you are designing your floor plan, use the f9 key whenever possible as you will find that if you do not, and you try to move or copy a big portion of the floor plan to another spot, it will freeze and you'll lose everything not saved.

F10 is the menu or sub menu. You'll now see EDIT, FIND, VIEW, ATTR, COPY, CLEAR, OPTIONS, and QUIT

Slot Tech Magazine



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at the bottom of the screen. "Edit" I have found no use for. Find is almost self-explanatory. It will find text machines. It will also find players and players cards and it will give all the player info like validator action, coin-in and the house expected win. It will also give you the player rating. "View" moves you around the floor in pan mode which is a lot faster than normal for scanning the floor.

ATTR is the function you'll use to color all of your designs. Once selected, you'll get a submenu with TEXT, WALLS and SLOTS. Choose the one you wish to color and hit enter. You will get a variety of colors from which to choose. Pick your color and hit enter again. Notice that after you select ATTR or any other option, your cursor will be flashing blue. For example, if you want to move a bank of games, select F10 then move your cursor over the entire object you wish to move and hit enter. The copy function works the same way.

In the F10 menu, you'll see "Options." Selecting this will give you a choice of "Display" or "Parameters." With the parameter option, you can change the player rating system. "Display" will give you Oasis, Blackbart, Headcount, Cardhead count. Oasis will display all the info of games and players in the box on the left-hand side of the screen. Blackbart will display game meter info. Head counts will give you the denominations and percentages of all the

games on the floor and the percentages of in-play games. Carded gives you the same, just carded percentages.

I hope this info will help you in designing a perfect floor plan. The illustration is just to give you an idea of what I have done with the program. You can use it to get an idea of where you want to go with the program.

I have assigned all the DPUs and have run all the lines to show where the ins and outs are and how many games are on the line, in addition to controller info and where they are. I do recommend that when you assign games with their IDs, get it as close as possible to the floor to save

time when locating games. To insert a new game after you have drawn the bank of games, just hit "insert" on your keyboard. It will be hard to see because it's a dark gray but if you insert a game, save it, close the program and come back to it, the game will be a light gray. Then, just move the cursor onto it, hit enter, give it the sent ID number, hit enter again, give it the DPU number and it's ready.

Have fun. It's worth the time.

Here's a quick CDS tip. If you come across a display with just a bar across the top of it and inserting your card will not do anything, change the E2 and it will come back up.

- Dion Anderson
danderson@slot-techs.com



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By Robert Sult



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Refurbished/exchanged, estimated cost is \$69.90.
You can save money by fixing it yourself..

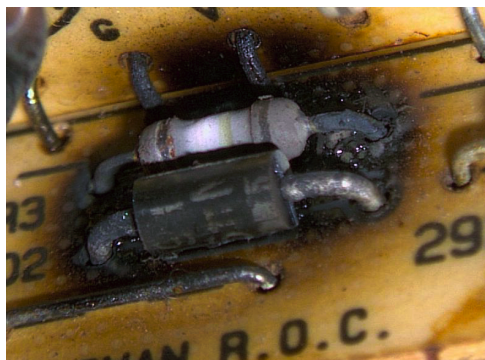


1) I always replace C9 - C10 - C11
the 1000uF 16 volt capacitors

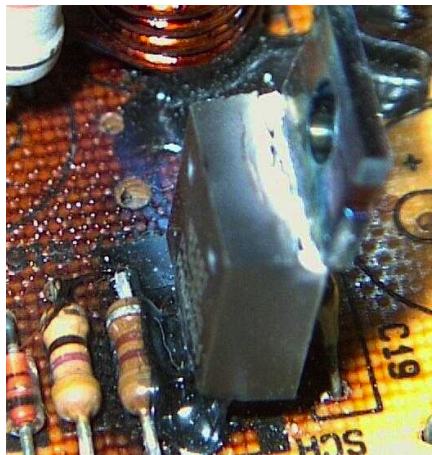


2) Also on the small board on the side (A-201),
I always replace C101 the 100uF 25 volt cap

Slot Tech Feature Article

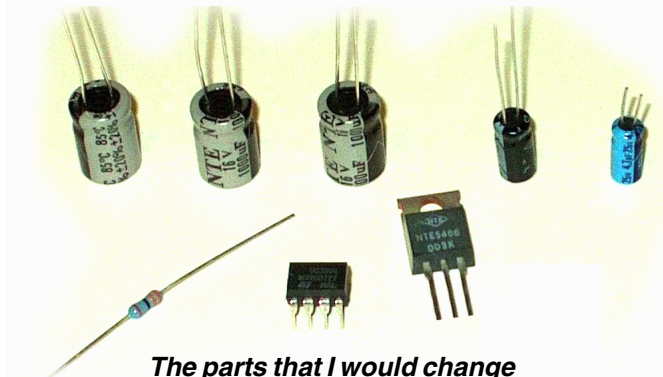


3) Look at & test R3 the 33 ohm 1/4
watt resistor. If discolored or burned,
Replace it.



4) Look at & test SCR the BT151R
(600 VRM 10 A) Cross Ref Part NTE 5466

QTY	DESCRIPTION	Est. COST	Est. TIME
	To open the Silver Box and look for the Obvious		1 Min
	Replace (5) Radial Electrolytic Capacitors -		9 Min
	(1) 33 Ohm Resistor - (1) SCR BT151		
3	1000 uF 16 Volt Capacitor	\$0.40	
1	100 uF 25 Volt Capacitor	\$0.15	
1	4.7 uF 25 Volt Capacitor	\$0.14	
1	33 Ohm Resistor	\$0.11	
1	BT151 Cross Ref ECG5466	\$0.75	



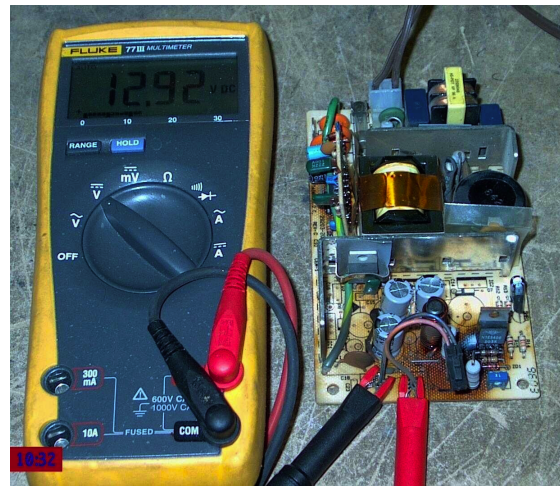
The parts that I would change

Note: In most cases you would be done and would only have to reassemble the unit.

Est. Cost at this point = \$1.55

Est. Time 13 ~ 14 Min

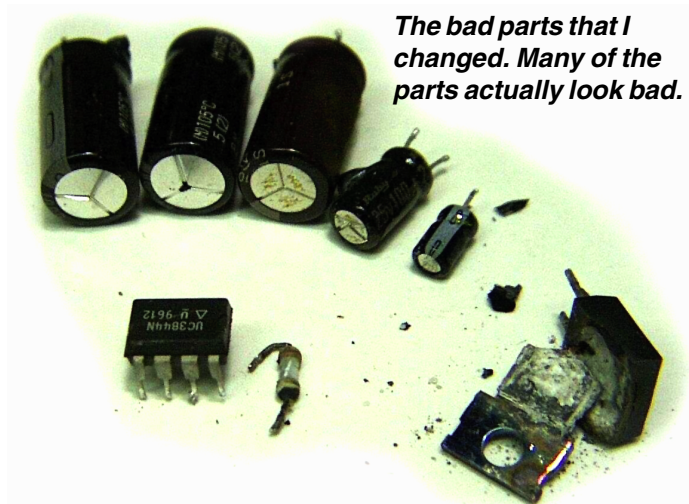
Sometimes you will get one like I got here, where I did not get 12 volts.



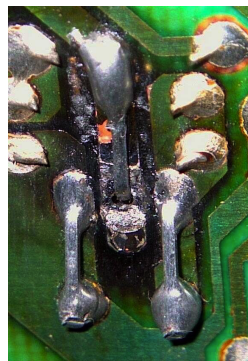
Qty	DESCRIPTION	Est. COST	Est. TIME
	Remove the sideboard for the 2 nd Time and replace the IC Then Retest for 12 Volts.		4 Min
1	UC3844 Cross Ref: NTE7098 Current Mode Pulse width Modulator	\$2.56	

Estimated cost and time for the TOTAL JOB - \$4.11 and 18 Minutes!

That's also including the reassembly of the power supply and marking it "repaired." That is an Est. Savings of \$65.79 without considering the time. You figure out the rest!

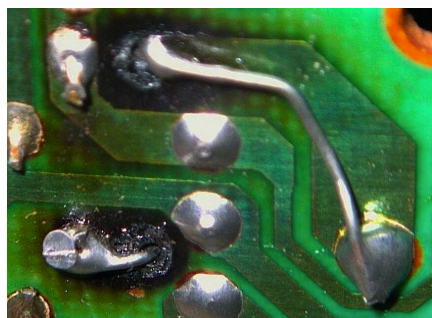


The bad parts that I changed. Many of the parts actually look bad.

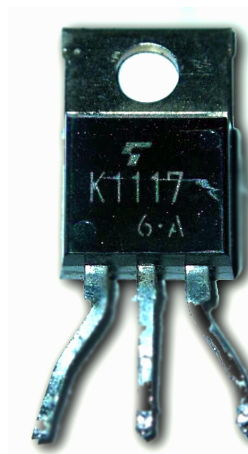


Also: When the SCR (BT151) is burned, you will find one or more traces have also burned off. Just use the legs of the SCR to insure that the proper connection is made (no need for a jumper wire).

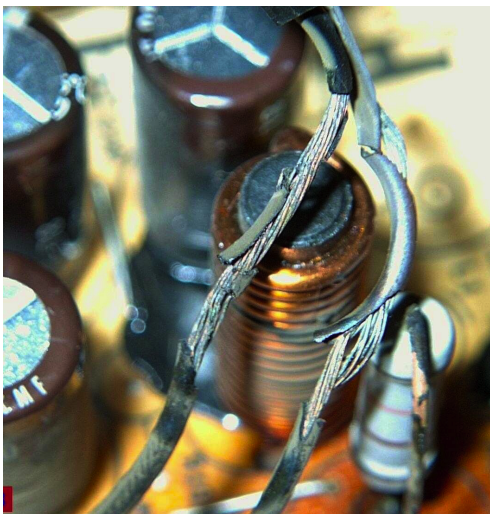
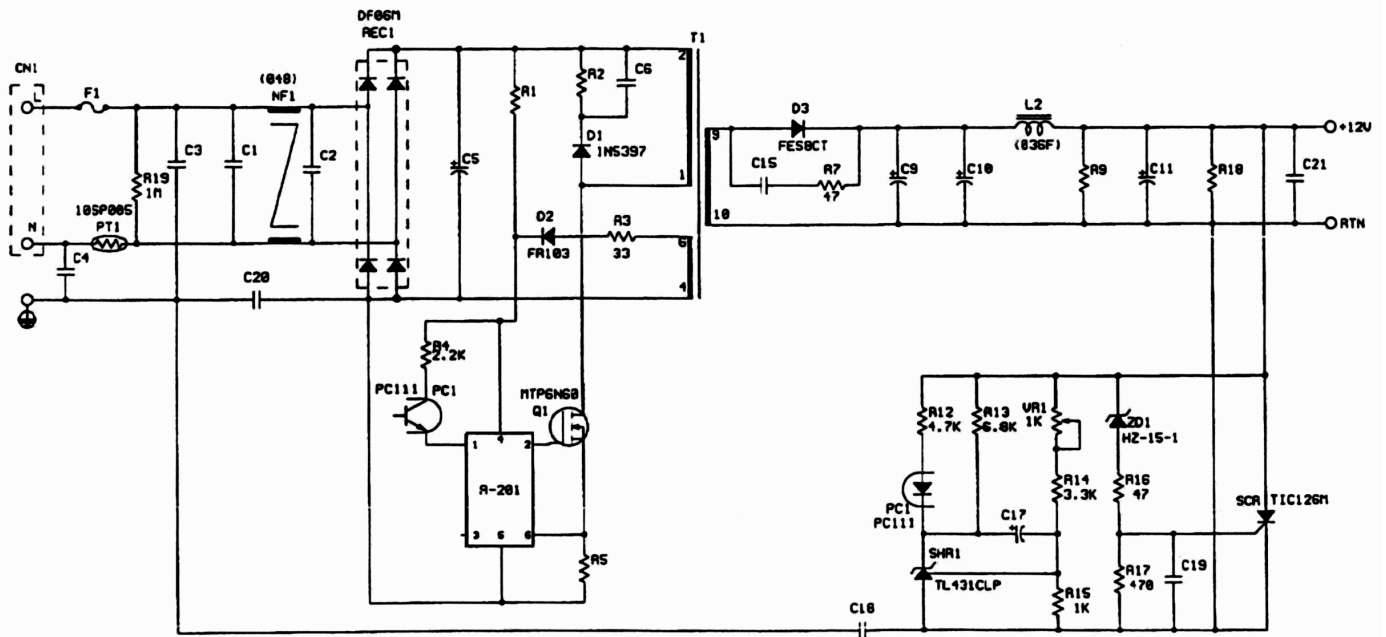
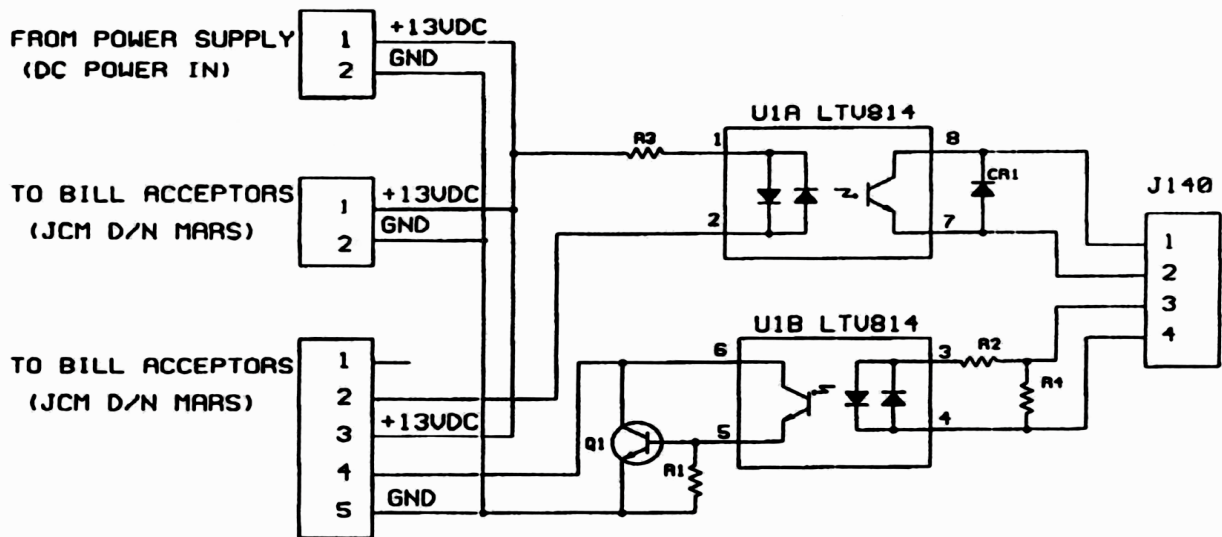
Now that should have about 95% of the power supplies working. The other 5% is reserved for things that I have not seen or fixed yet.



When the resistor burns, it will also burn the traces off the printed circuit board. You do not have to use a jumper wire. Use the wire of the resistor to make the connection.



I had a power supply come in for repair and found a blown fuse. This was the first time I had seen a fuse blown on the power supplies. I found that 2SK1117 MOSFET was shorted. I replaced both the 2SK1117 and the 2 amp fuse. The power supply checked out good.



This is what happens when wires touch the output load resistor.



The side board (A-201)

- Robert Sult
result1@result1.net

Tiny bubbles, unassuming and nearly invisible, the color of shiny smoke adorn the ceilings of every casino in the world. Surveillance, the eye in the sky, the necessary evil. If you are in any gaming property at any time you can rest assured someone is watching you. That someone is a guy like Darrin Hoke, Director of Surveillance at Circus, Circus Reno.

He's been in the gaming industry sixteen years, and twelve with Circus' Surveillance department. I met Darrin as my instructor at the University at Nevada-Reno's Gaming Management classes. He was teaching fraud reduction and risk management, quite well I might add. It was clear that he, like me, loved the sound of his own voice, so I asked him for an interview. He agreed. Big surprise.

STM: So, people who cheat slot machines are out there. I've always pictured a gang. You know, a chop shop-like operation with seedy characters plotting their next big score on an unsuspecting casino. Or is it one criminal genius bent on world domination via the gaming industry?"

DH: It's usually very well organized. They're very intelligent. Some are MIT graduates. They get the new slots, old slots; you name it and study them carefully.

STM: Sure, you can buy them on e-bay

DH: Then they reverse engineer it. It seems very simple. They tear it apart piece by piece until they find a flaw or a way in. In Las Vegas, when law enforcement raided one home they found cheating de-

vices and slot machines all over the house. Seventy percent of the cases are related to drugs. Either they are financing their habit or they sell drugs to finance the cheating.

STM: What is the coolest cheat you've ever seen? I mean you looked at that and said, "Wow, I've got to respect this guy's effort".

DH: The light wand was the most damaging device ever to hit the market. The monkey paw and the kicked stand paled in comparison.

I was very fortunate to be in the right spot at the right time. In 1991, I arrested these two guys from Oklahoma. This was the first arrest of a cheater using a light wand in the state of Nevada, ever. No one had ever seen it before. So when I was watching this activity, I thought it was quite strange. I could see the inside of the tray lighting up. They beat the machine for three hours as I watched because I just couldn't figure out what they were doing. When I arrested them, they had over \$9000 in the back of their van. They had been in the state less than twelve hours.

STM: What I want to know is, how do they learn this stuff in Oklahoma? Does the light wand still work?

DH: Yes. One particular bad guy, Michael Balsamo, used a light wand up until 1999 or 2000. He's in custody now.

Someone To Watch Over Me

By Ken Locke

S T M :
How about the use of EPROMs for cheating?

DH: An EPROM level cheat would definitely be an inside job. The tech would have to put in a bogus chip. I recall this one where they used a combination of coins that would act as a trigger to activate a jackpot. Once the EPROM received the proper combination, it was all over.

STM: How did you catch that?

DH: I'll tell you, it had nothing to do with surveillance, nothing to do with audit; it had nothing to do with investigations. I had a snitch working for me that told me. And, once we started looking at the W2G reports and started seeing a pattern of who these people were and whom they were associated with, then we were able to identify what was going on.

STM: A snitch. That is so Andy Sipowicz. You're going to make my readers very paranoid.

DH: You've got to figure out the information. A snitch can be your most valuable tool. Sometimes they have a lot to gain by being an informant. Sometimes they have a lot to lose. But if you can play the person right, you can get a lot of out of him.

STM: Are slot techs sometimes the bad guys?

DH: Yeah, I have arrested my

share of slot techs. When the bill validator first came out, we as an industry didn't understand or realize what we needed to do to prevent money getting out when they jammed. What was the policy when it jammed? What do you do with that money? Well, nobody knew. Some of the slot techs took advantage of that. 'Well, where does the money go? I don't know. I guess I'll put it in my pocket.'

STM: I've warned in the past about a little low-rent cheat by turning the sensitivity on a coin comparator way down so that, say, a dollar machine would accept half-dollars or even quarters.

DH: I've never seen it happen in my property, but I have heard of it. I don't know where they would have a huge gain in that. The worst one however is when a slot tech had set up a quarter machine to work for nickels.

STM: You mean they would just change the denomina-

tion?

DH: Yeah, but with the bill validators, most definitely we took the biggest hit. I am aware of a situation where a property lost \$32,000 before anybody noticed. The machine was placed out on the floor as a conversion. It was supposed to be tested by a supervisor and it wasn't, and it gets out on the floor and then it starts its cheating. The system is supposed to pick up more than 3 hopper fills in an 8-hour period of time. It didn't. The people who were supposed to sign the malfunction cards didn't pay attention to the previous entries. So, the whole thing failed except for surveillance was seeing an individual who was playing the game 24/7 and wasn't getting off of it. They were able to see him put in a \$20 bill and subsequently checked the meters on the machine.

STM: You've seen some cheats using the player tracking devices, haven't you?



Darrin Hoke (l) Director of Surveillance at Circus, Circus Reno with Ken Locke

DH: I had a couple of different scenarios. In 1996, we had guy who was figuring out a way to put a piece of paper into the card reader, get it all the way to the back where the pressure spring is, slide over the paper and pull out his card. By doing this, he kept the optic open and it would continue to read his card. What it would do is accumulate points and

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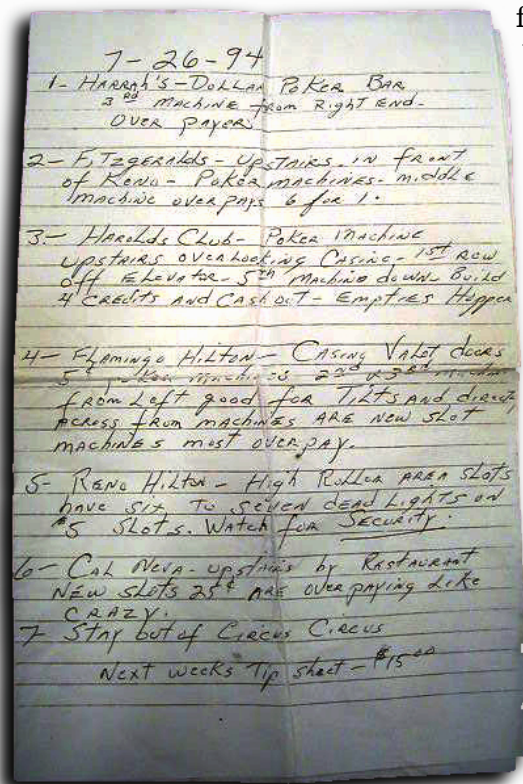


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A tip sheet from a "snitch."

credits on his legitimate account from other people's play.

We did arrest him for a felony crime burglary. Later it was reduced down to "obtaining money under false pretenses".

STM: There's a difference between stealing and obtaining money under false pretenses?

DH: Technically, yes.

STM: If you caught a slot technician wiping a booger on a customer's seat, would that be considered assault? *Ok, I didn't really ask him that. I don't think any of us want to know the truth.*

DH: In another scam that we found, we had a guy who would jam the card in several times very, very quickly. He was jamming dirt and dust in order to accomplish the same thing. He had over 600 slot machines open for play at the same time in a 24-hour period so unless he was The Flash, there was no way he could've done that.

STM: When I heard that for the first time, I thought to myself 'why doesn't a player tracker system flag that?' And, I have looked around and there are no systems that will do that. Maybe there is and I haven't seen it. Somebody's going to write me and say 'my System X can do that, so every body should install System X in their property.' But that's a simple case of a tech just cleaning the damn thing, right?

DH: Canned air will blow that all out completely. The scary thing about this situation is that it's an integrity issue to your own system. In other words, how many people could have lost comps and points that legitimately played a slot machine but their card never registered? How many people did not get what they're expecting as a result of a little switch?

STM: That's amazing to me. You get somebody who might drop \$12,000 in one weekend. They're expecting major comps and points and the end of their stay, they only have enough get a pair of cheap sunglasses.

DH: Of course, we are going to look at that and take care of that customer but until that happens, we don't realize the failings in our own operations.

STM: What other goodies do you have?

DH: Well, we talked about using a snitch before. (At this point, he presents to me a withered, hand written note). This is what they call a tip sheet. It runs about \$25 here in Northern Nevada, in Vegas about a \$100. Basically, people will go out into different casinos and figure out machines that they believe are

over paying, bonus games, security, what to watch out for and so on. I am really proud of this because I am one of the few good guys who have this thing.

STM: Now I see why you're proud of this thing. Number 7 says, "Stay out of Circus, Circus."

DH: When I broke into this business, I felt very strongly that we weren't doing enough to be proactive. I really felt like the guys that were silver mining and credit claiming were really the ones we needed to target because those were the guys who were doing all these other things as a crime of opportunity. They were the guys who were going to give us that word of mouth; who were going to keep the criminals out of our casinos. That's the thing I am really proud of. We've reduced the amount of crimes that occur in our facility down to almost nothing.

STM: Not once have you mentioned table game cheating and I know you have a specific philosophy on card counters. Tell us about that.

DH: I think card counting can be very dangerous to a casino when the teams are doing it but it's not an activity that's illegal. For the most part, people who are card counters are grinding out about eleven dollars an hour.

STM: So they could go out and get a gig driving a forklift for the same amount of money.

DH: Yeah, but I am paying my surveillance guy twelve to fifteen dollars to watch a guy making eleven an hour, who isn't doing anything wrong, who could be stopped by a simple shuffle of the deck. We're busy watching the Volkswagen and the Mercedes is driving out the door.

STM: That's amazing.

DH: I tell you I have taken flack for it but I won't make apologies for saying it. It seems a little silly for us to concentrate all that time on an activity that isn't even against the law. In a way, it actually works for us because it makes some people believe the game is beatable. But only a small percentage of the population can beat it so, what the heck? Let them have their day.

STM: What should a slot tech be looking for when spotting cheats?

DH: It's body language. It's clusters of visual information that leads you to believe that he's doing something wrong. It's going to be up to you to stick with or ignore it. Is he avoiding eye contact? Are they trying to locate the cameras? What type of dress are they wearing? Are they, for instance, wearing a fanny pack from a local casino? Because

when you go to Maui, do you wear a Maui t-shirt?

STM: You know, no matter how technologically advanced things get out there, it's still a very human job, isn't it?

DH: Of course. One of the things that slot mechanics can do to help surveillance . . . *(at this point I should have pointed out that we really don't like to be called **mechanics** but hey, this guy's probably packing a heater)* is that when they see something that they know isn't right, don't just lock up and pretend it's no big deal. Something had to create that situation. You've seen a person play a slot machine a thousand times. The minute you see that person playing the machine differently, it sticks out like a sore thumb. They might as well be wearing a big neon sign that says, "I am a dummy and trying to cheat a slot machine."

As soon as it doesn't look right, drop a dime to me in surveillance.

STM: (I love that cop talk) You know, I have seen that the culture in some casinos is that Surveillance is the bad guy. That you are Big Brother and communicating with you is not to be done. But you want them to come talk to you, don't you?

DH: I think the Cloak and Dagger days of casino surveillance are over. We are dealing with a lot more information. We have to rely on support staff equally as much as they rely on us. I need to have those people telling us what's going on so we can all succeed. We're no longer working in those dark surveillance rooms. We're working more broadly and that's the key to it. If you close your mind to all these resources because you don't believe they can help you, then you are limiting your own abilities to get the job done.


- Ken Locke
ken.locke@igt.com

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Sycuan Casino's own Daniel Tucker (l) speaks to the crowd during the ribbon-cutting ceremony at the start of the NIGA show in San Diego. With him are Cruz M. Bustamante, Lieutenant Governor of the State of California (m) and NIGA Chairman, Ernie Stevens (r).



Aristocrat's Roy Steventon keeps things running at the show. Roy has been with Aristocrat for three years.



There is something special about this High Speed 3RV reel slot from WMS Gaming. Can you tell what it is?

A look inside another 3RV reveals all. This is a video reel slot with a difference. It's amazing how a simple thing like having a reel glass in front of the CRT helps to complete the illusion. This is an esthetically pleasing machine.



California is the land of ticket printers. Infinite Peripherals showed theirs.



Anthony Powless of the Mill Hotel & Casino plays Pac Man from WMS Gaming.



The most enthusiastic person in gaming, Greg Kobe shows his "Kobetron" chip verification device to a couple of slot techs. Next time you're at a show, stop by to say hello to Greg. Spending a few minutes with him is like having a double shot of espresso!



Sigma showed a variety of games in different cabinets.



The most popular booth of all, Sysco carved up roast Beef sandwiches

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TechFest is for slot techs of all skill levels, from novice techs who want to learn the basics of BV and hopper maintenance to advanced techs that need to brush up on monitor repair.

SCHEDULE OF EVENTS

Wednesday, August 14th, 2002

9:00 am - 12:00pm
How Monitors Work - Part 1
Theory of Operation - Beginning level

1:15pm - 3:15pm
Asahi Seiko - Hopper troubleshooting and repair

3:30pm - 5:30pm
3M Touchsystems - Touchscreen Technology

Thursday, August 15th, 2002

9:00 am - 12:00pm
How Monitors Work - Part 2
Narrow Down the Problem - Intermediate Level

1:15pm - 3:15pm
Mars Electronics, Inc. - BV troubleshooting and repair

3:30pm - 5:30pm
Coin Mechanisms, Inc. - Coin Comparitor technology and repair

Friday, August 16th, 2002

9:00 am - 12:00pm
How Monitors Work - Part 3
Circuit Analysis and Component Level Troubleshooting - Advanced Level

1:15pm - 3:15pm
Sencore - Monitor Troubleshooting and Repair - Using sophisticated test equipment to speed through monitor repairs

3:30pm - 5:30pm
Seiko ticket printers - Printer troubleshooting and repair.



Visit the website at slot-techs.com
for more information

Space is limited - Register today!
TechFest I and II were both sold-out events.

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Additionally, current and future articles more-or-less assume that readers are already familiar with what has been covered in past issues. This editorial policy assures that Slot Tech Magazine's contributing writers are not limited to "writing down" to the level of a novice technician but are free to continue to produce the most comprehensive technical articles in the gaming industry.



Randy Fromm's

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