

March 2008

SLOT TECH MAGAZINE

Slot Machine Technology for the North American Gaming Industry

Mysteries of the Nile
A Four Level Mystery Progressive

The Plow
The card reader-cleaning tool that really works

Quick & Simple Repairs #36

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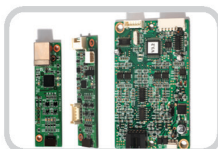
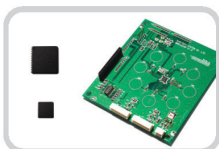
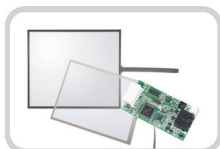
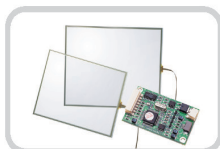
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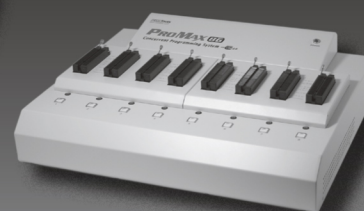
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Slot Tech Editorial

Subject: Aristocrat power problems
To: pporath@slot-techs.com

Hi,
Reading your issue with Aristocrat problems in the January 2008 issue of Slot Tech Magazine, brought back memories of problems we had at mohegan Sun a few years back. We had a bank of 10 Aristocrat uprights, and every once in a while, a game would just go dead. We would throw power supplies at it, and everything else we could think of, and then all of a sudden it would start working. Once a game was down and waiting for a new power supply, and another game on the bank was shut down for another problem. Someone tried the game waiting for the poer supply, and it came up! What we found was that the power supplying this bank had low voltage, and Aristocrat power

supplies have a low voltage shut-off. Once in awhile the voltage would dip too low, and one machine would shut-off. With that machine off, the others would stay up! We changed to heavier extention cords, and moved the outlets around a bit, and never had any more problems with that bank.

Drew Tracey

Dear Pat,

I just received my copy of the February issue of Slot Tech magazine and was glancing through the articles. I saw your quick and simple fix for IGT "Trimline" No Credit for a \$20 Bill and thought I would send you a message.

One day I was called to an AVP with bonus topper. The supervisor said that a customer had put in a \$20 bill and it didn't register. The bill was removed from the cash box and returned to the customer. The supervisor walked away and the customer put the \$20 bill back into the game. Again it did not register and the same supervisor came back and removed the bill from the cash box and put the bill into the machine himself. Again the \$20 bill did not register. The supervisor called me over that time to check out the problem. I looked at the game event log and saw that the "bonus device" had been causing a lockup. When I power reset the game the tilt cleared and \$60 in credits were issued.

I was a tech supervisor at the time and was continually reminding the technicians that these games have event logs that will help them in solving game issues. Some listen and some don't but even though I am mostly off the floor now I still go out to fix problem machines and find that technicians still don't take advantage of one of the best "tools" on the floor. Perhaps an article should be written on using this tool.

I am not saying that this was the issue with your machine but I



don't like to use words like "Magic" when talking to customers. It doesn't instill confidence in your abilities to help them out though most probably don't take it too seriously and you did give them a plausible explanation before you left.

Thanks for your articles. I would have liked to have more like them when I was first working as a tech and am sure there are many techs out there that really appreciate your efforts. Sounds like you are still working with coins and the older machines. I REALLY miss working on the old mechanicals and my motto was "If you ain't bleeding you ain't working." When I started I really didn't have much of a clue and our casino was in a deal to buy old junkers REALLY cheap from an old and established casino and it was my job to piece as many of them together as I could. It was stressful at first but I really learned a lot and loved every minute spent at our warehouse.

Thanks again,

Gordon Howe

Thanks for taking the time to write, Gordon

Randy Fromm
Randy Fromm

Randy Fromm's Slot Tech Magazine

Editor

Randy Fromm

Technical Writers

Ted Befus, Jason Czito,
Kevin Noble, Herschel W.
Peeler, Pat Porath, Vic
Fortenbach, Will McCance

International Contributor

Martin Dempsey

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Well, here we go again. Casino Regina is hosting another first of its kind launch, not just for Canada but for North America (or so I was told). We're the first site to officially install and run the latest creation from PGI. It's called Mysteries of the Nile, a four-level mystery progressive, running on the new Secure Progressive Controller SPC.

We're going to go over the installation of PGI's Impressions® LCD kit for the IGT S2000, the installation of the SIB and game configuration.

The kits came from PGI with everything needed to make this installation happen. However, there were some snags along the way that I will bring to light as well as where we feel things can improve for everyone else out there should your casino decide they want this on their floor.

Mysteries of the Nile

A Four Level Mystery Progressive

By Ted Befus

There were two different kits for each machine: One Impressions kit and one SIB kit. Figure #1 shows the contents of the Impressions kit. The kit contains a 15" Kristel LCD panel and the controller for that panel. On top of the controller you will see a small PCB. Its purpose is to convert the signal from the SPC into a format that the LCD controller can handle. There are a couple of power supplies and the associated cabling to connect everything. There are a couple of things not pictured. One is the LCD mounting bracket and a power cable to split the IGT 120V output in the

top box (before someone writes to me, I DO NOT mean the "Y" cable in the picture. There is a cable that connects to the IGT top box distribution that is not pictured here).

The installation of this kit is really quite simple on the S2000. Figure #2 shows the majority of the parts installed; behind the mounting bracket you see the LCD controller, and its power supply. The split power cable I mentioned can be seen hanging out of the game on the right hand side. It has a female end that couples with the Y cable in figure #1 to run



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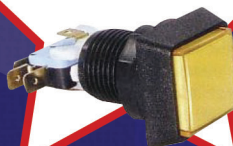
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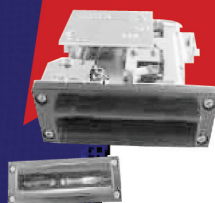
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both power supplies (the LCD and LCD controller).

We found a convenient spot to place the LCD controller behind the bracket. The LCD controller is run off of a flash card that contains a wealth of information as well as the machine's location on the link (we have 16 games on the link so the cards are addressed 1-16).

Next we will look at the SIB kit. The kit is laid out in figure #3. It includes the SIB, another power supply, the associated harnessing to interface the SIB to the game and to the SPC, and a connecting board (called an in-machine breakout board) to connect the SIB to the SPC and to the other games in the link. With the older style SIBs and controllers, each SIB had to be individually addressed. With the SPC and newer software, that is no longer a concern. You address the game through the operator menus and it connects to the SIB, giving its address. In the event that you need to change SIBs, you simply install a new one (making sure that the dipswitches are all in the off position and that the jumpers are set properly) and away it goes. The SIBs are connected to the SPC through the in-machine breakout board using RJ45 patch cords run through another connecting board (much like the SDS harmonica board I spoke about some time ago in the July 2006

article, Unlocking the Mysteries of the Mastercom 250 – Part 2). The SIB is interfaced to the game through the SAS Secondary port. Figure #4 shows the final location we chose for the SIB and the in-machine breakout board.

On the game side, there are a few things that have to be checked and turned on. Firstly you must access the keychip menu to enable Legacy System bonusing. This can be found in the Keychip Config menu under the Bonus menu. Open the System Bonus and enable Legacy Bonusing.

After you exit the keychip menu, you will have to access the Communications Options menu. In our case, we setup the bonus on the SAS Secondary channel to channel 1. The SAS address for the secondary channel must be set ac-

cording to the machine's position in the link. This must match with the machine number that is programmed into the LCD controller flash card. If these don't match, you can have bonus winners show up on the wrong machine display, which would cause just a few customer problems. While in the comm. Options menu you must also enable Legacy bonusing on the SAS secondary channel as well.

Now for the fun part of the article, my pet peeves. As this was a first time installation, I'll do my best not to come off sounding harsh or negative as that won't be beneficial to anyone but there are a few changes that could be made to make the install cleaner and easier.

There are two "Y" power splitter cables as well as



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CPA4067L	17" Bally Upright	LCD for Bally	\$733
CPA4075L	17" SDG Slant	SDG 17" LCD 19 pin	\$721
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CPA4085L	17" Aristocrat Slant	LCD for Aristocrat p/n L30700	\$744
CPA4089L	17" Konami Upright	LCD for Konami p/n 530002	\$728
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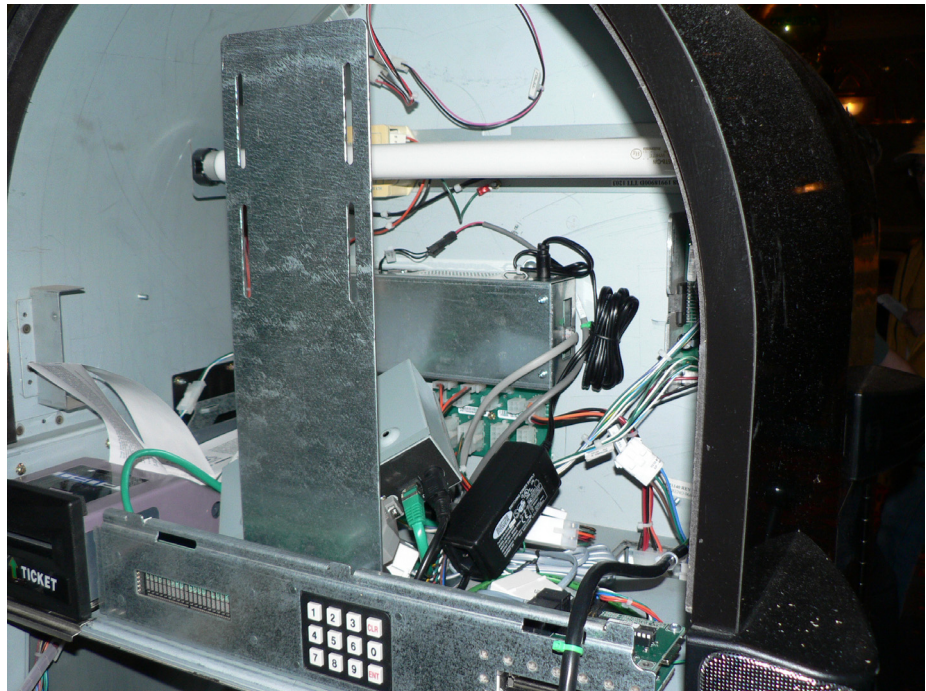
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CPA4062L	19" IGT Upright 25 pin	LCD for IGT Game King Plus	\$864
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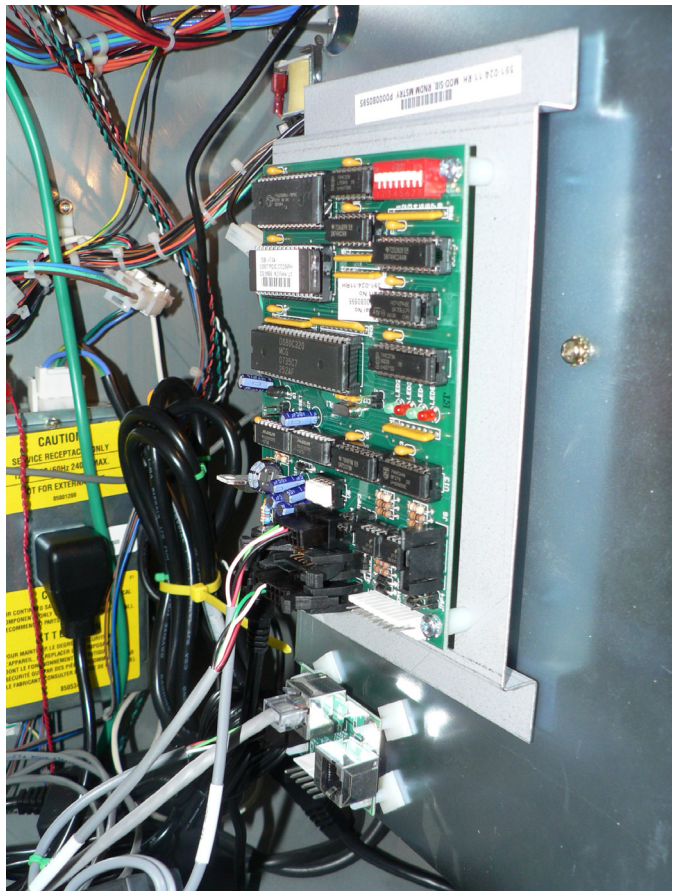
two cables to connect to the IGT 120V supply in the game. A lot of this clutter could be resolved by using a multiple output supply that has enough output current to drive the LCD and all the associated electronics. It would only need one connection to the game and in games that do not use hoppers; there would be more than sufficient room to locate it in the game.

Ahhh, next is the mounting bracket. Where do we start with that? I have only a couple of small beefs in regards to the bracket. Keep in mind that this kit is not a mass production kit and I'm sure there will be changes made like the ones we made on the fly. The holes for mounting the bracket on the floor of the top box did not match the stud pattern on the game. We simply ground off the studs in the game and attached the plate with self-tapping screws. Also, once the bracket was installed it was impossible for us to get our hands back behind the screen to install the screws. One of our guys came up with a great idea, why not enlarge the holes in the top of each slot and install the screws into the LCD and then install it. The screws will pop through the larger opening and then slide down, locking into place. Great idea! Figure #5 shows the mod we made to the openings.



The LCD controller proved to be another small issue. Well, it wasn't really the controller as much as it was the SD cards that they were running. When we first started testing the games (before we went live) we noticed that the meters ran very slowly and when a bonus hit, there was a considerable amount of lag between displays (each display plays the bonus as it happens). This was caused by the brand of SD card in the controllers. When this

was originally tested, PGI used a different make of SD card and did not have any of these issues. I would have to guess that the





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different cards must have had different specs making access time slower on the cards that were shipped to us. To fix this, PGI supplied new cards to us which made things much better.

Next, aside from the LCD controller and the bracket there are three different boards to run this setup. Can they not all be contained in one enclosure? It would make all the cabling run to a central location and would clean up nicely. I'm not asking them to re-engineer all of these onto one main PCB (although that would be sweet) but at least if they were in an enclosure it would be easier to install.

While we are on the subject of boards, can you vendors please put locking connectors on your PCBs? When you have a ten pin connector that's only using two wires, it's not hard to figure that it won't be a really secure connection. I was told that these boards originally were meant to be used with ribbon cables which would have had a much greater affect on the strength of the connection but because of static issues, they went away from the ribbon cable idea.

As a solution to the connectors falling out, we make it standard practice now to hot glue all connections like that to make certain that they don't come loose when we don't want them to.

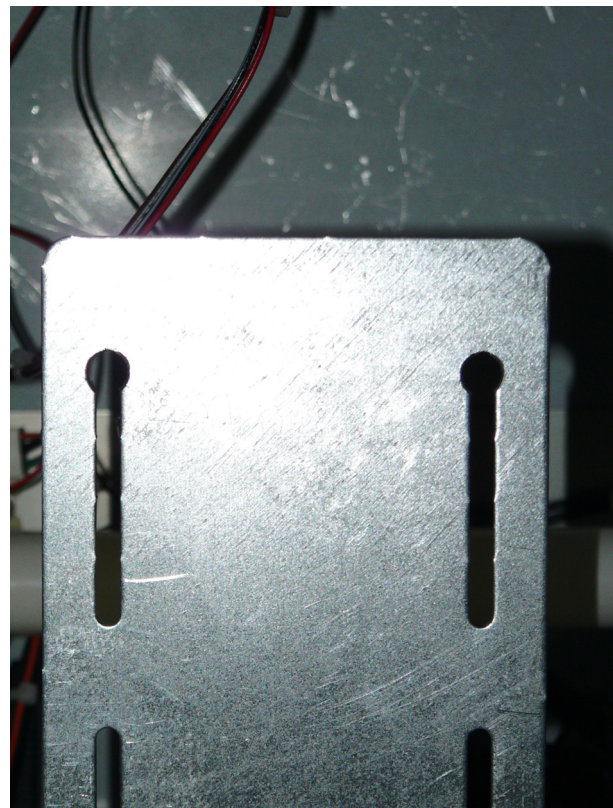
All in all, the total package looks great. MIKOHN made custom glass for each game, as the paytable had to be moved from the top to the bottom (we won't get into the headaches that the glass caused but it was not the fault of MIKOHN. We'll leave it at that).

I must say that the graphics on the Cool Sign are quite good. The background on the meter screen is terrific; you can see rippling water and can even see slaves building the pyramid in the background! However, that sharpness and clarity does not carry over onto the game LCD. The graphics on the meter are OK but the clarity of everything else is somewhat lacking.

Now, what better way to end this article than with a funny story? We had two representatives from PGI on site to assist us with this install, one from the Canadian office and one from PGI Las Vegas. To protect his identity I won't mention names. The fellow from Vegas had never been to Canada before and I think the time change and the lack of any noticeable heat outside really took a toll on him. I came up

to the floor on the first morning and as I walked up he was speaking to someone on a cell phone. When he was done, he handed the phone back to our Canadian rep. Now, I'm kind of a smart alec, so I asked why PGI doesn't supply him with a cell phone. He replied, "I have one, it's in my pants pocket." He reaches into his pocket and pulls out the TV REMOTE from his hotel room! We all burst out laughing! Its things like that which help make these installs bearable sometimes. Who couldn't use a good laugh at work!

- Ted Befus
tbefus@slot-techs.com

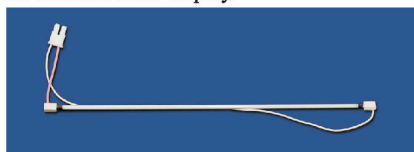




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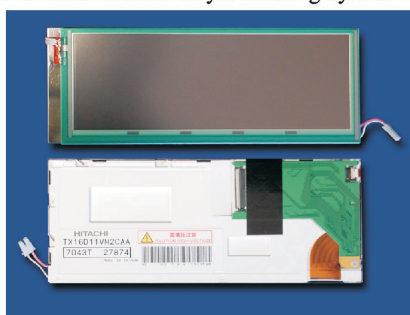
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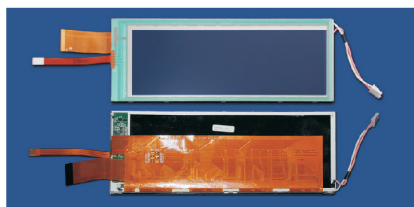
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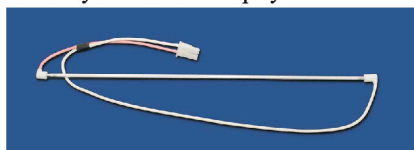
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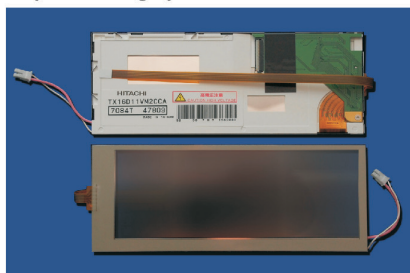
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New 70,000 hour cold cathode lamp assembly for Bally I-View LCD display.



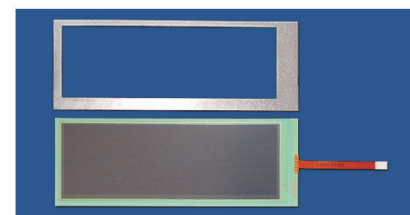
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The Plow

The card reader-cleaning tool that really works

By Willoughby C. McCance

I am a senior slot technician with many years of experience working with the player point tracking card readers at the Mohegan Sun casino in Uncasville, CT. From the beginning of my employment there, the casino stressed its core values and asked its employees to embrace these values with the goal of providing the best possible experience for our customers. Three of these values were "continuously striving for perfection", "bottom line performance", and "blowing away the customer", making their experience memorable and one they want to repeat over and over.

I am a strong proponent of providing customer satisfaction in my job and I look for ways to improve on what I do. That's what led me to develop the Plow™, a new technology in card reader cleaning cards.

It didn't take long to see the frustration of slot machine players who were unable to use their player's card in their favorite machine. I'll give you

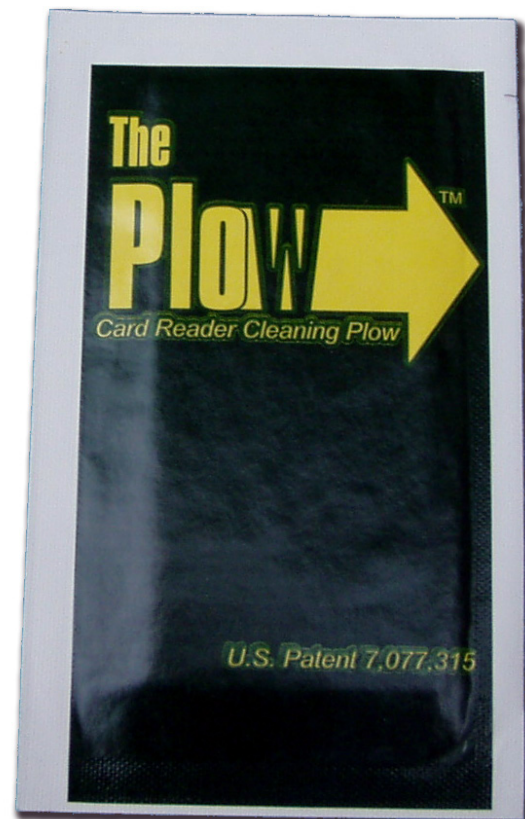
an example that sticks out in my head—there were many, many other instances of similar events.

I was making rounds on the floor when a woman flagged me down. Her favorite machine would not accept her player card and the irritation showed on her face as I approached.

"I can't play this machine. It won't take my card. This is my lucky machine. I play it every

Friday between nine and 11. Those are my lucky hours. I have to get on this machine. You need to fix it now."

I explained that I'd have to take the machine offline and that I would need to replace the card reader. I told her she might want to play another machine until I got that one up and running again. "No, I'll wait right here. I don't want someone else to get this machine. It's after 9 already. Will you do whatever you need



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To enroll: Visit the website at slot-techs.com for an enrollment form or contact a Slot Tech Magazine representative at 619.593.6131. You may also fax a purchase order to 619.593.6132. Be sure to include the students' names and whether they wish to attend TechFest or SlotFest. Tuition is \$595.00 per person

to do right now?" Her voice was imploring; it was clear that this was the most important thing in the world to her at that moment. I was actually on my way to trouble-shoot a problem with a different machine, but I told her I'd be right back. I replaced the card reader and the guest was happy again. And you know what? She flagged me down one more time that evening. This time it was to tell me she'd won a \$500 jackpot and to thank me. "You see" she said, "I told you this was my lucky machine and look what time it is; 10:45 on Friday night." Yes, I had fixed the problem, but this solution, replacing the entire card reader, was definitely not the answer. I started thinking about this problem, i.e.: how do we keep these card readers functioning so that players don't become angry and frustrated, but at the same time do it in a quick and cost effective way?

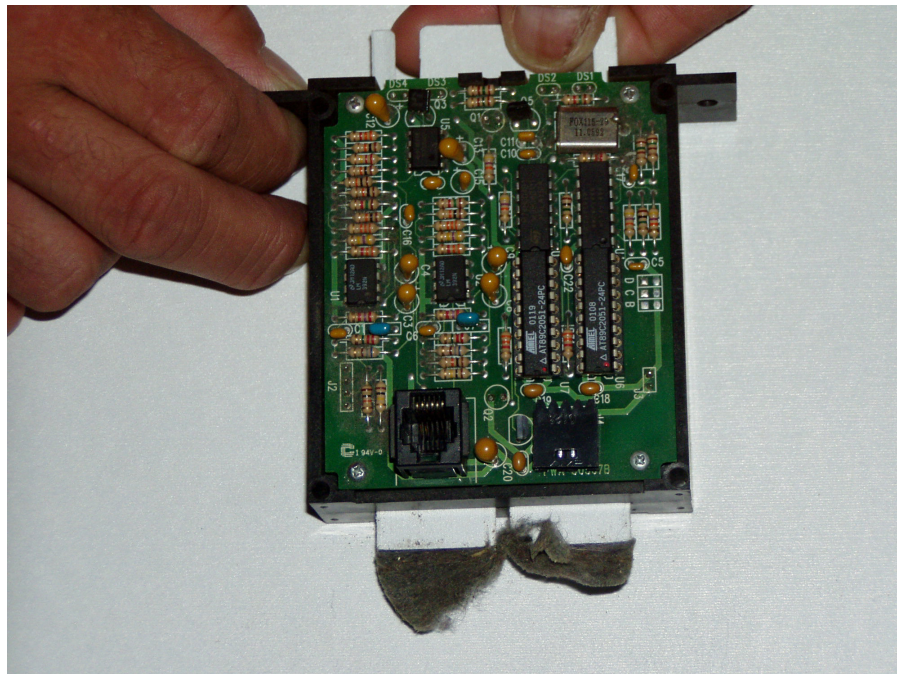
In my opinion, there is no better place to begin and maintain a positive relationship with your guest than right where they put their player's club card. Guest disputes are the number one concern and priority of any casino establishment. When a guest dispute arises on the floor it must be dealt with immediately. For example, one of the major and most common types of problems occurs when the player card reader malfunctions with a "reinsert card" message and a player cannot use his/her favorite machine.

There are two major issues that arise when a card reader fails. First, the card reader failure leads to large numbers

of guest disputes from casino guests who become upset when a card reader malfunctions. This issue causes them either to not be able to use a favorite slot machine or to have a slot machine they were using not credit them appropriately with player points. When this happens a guest may decide to take their slot machine business to another competitor casino, and those unhappy players may tell their friends that the casino machines have problems. What starts as a problem with one guest can snowball into larger problems with loss of guests to the establishment. The second major issue is that this malfunction causes suspension of game play or "time-out" of the machine until it is repaired by a technician. As a consequence, potential revenue generation is lost to the casino. So the casino loses immediately when the machine is out of service and then, possibly again, when the guest and other potential guests take their business

elsewhere.

It became clear to me early on that the reason these card readers were failing was because they were clogged with dust, particulates, grit, residue from cigarette smoke, and oily grime. Of course, the first thing I tried to do in solving this problem was to clean the card reader with a card reader-cleaning card that my casino purchased. This was a wetted card, which is the approximate size of the player card. I found out quickly that use of this card was, to be frank, useless. These wetted cards only pushed dirt and dust toward the back of the card reader where it would build up in front of the card reader limiting posts. As dirt built up, eventually, the card reader became unusable. I studied the design of the card readers (I had a lot of time to do this as I was constantly replacing card readers that were clogged on the casino floor). Instead of just tagging the "failed" card reader out, I



decided to see if I could determine what the problem was. I disassembled the failed card reader and this is when I discovered that the standard card reader cleaning cards did not clean the material causing the problem of the card readers. Repeatedly, when I took the failed card reader apart I could see a huge wad of dust and dirt built up in the back of the card reader. It was clear to me that the standard card reader cleaner was only compounding the problem in that it could only do a limited cleaning of magnetic heads and front pathway of the card reader.

The answer was then obvious to me. It was my eureka moment! I designed and made a new card-cleaning device. I cut the cleaning card to take into account the card reader limiting posts. I made a single notch card and a double notch card out of a plastic coin cup

commonly used in casinos. Each of these cards was designed to push the accumulated dirt past the limiting posts of the card reader and out the back of the machine. These prototypes were later to become the Plow™. These early cards did the job to a certain degree of satisfaction, however the issue of cleaning the magnetic heads and pathway still had to be addressed. Working with a card manufacturer, I changed the Plow™ cleaning card to be manufactured out of non-woven polyester on a semi-rigid core. I added a cleaning solution that not only cleans the heads and pathway effectively, but which evaporates quickly and without residue. Once these changes were made, the Plow™ was shown to thoroughly clean all surfaces in the card reader as well as dislodge the material from the back of the card reader. I now had a card reader cleaner that

actually did what it was supposed to do—it cleaned all parts of the card reader quickly, efficiently, and kept the slot machines in play.

I demonstrated the new device to my slot department manager who was very impressed with the results of the Plow™. He enthusiastically endorsed it and recommended that I have it patented. I took his advice and pursued a patent. I received a final patent for this invention on July 18, 2006. Since then, the Mohegan Sun has bought the Plow™ to use in its slot machines. One night I fixed a clogged card reader using a Plow™. I went on with my work on a machine at the end of the row where I had just cleaned the card reader for the guest. A few minutes later, I hear excited yells. The customer had just won a jackpot. He called me over after the attendant left and gave me a

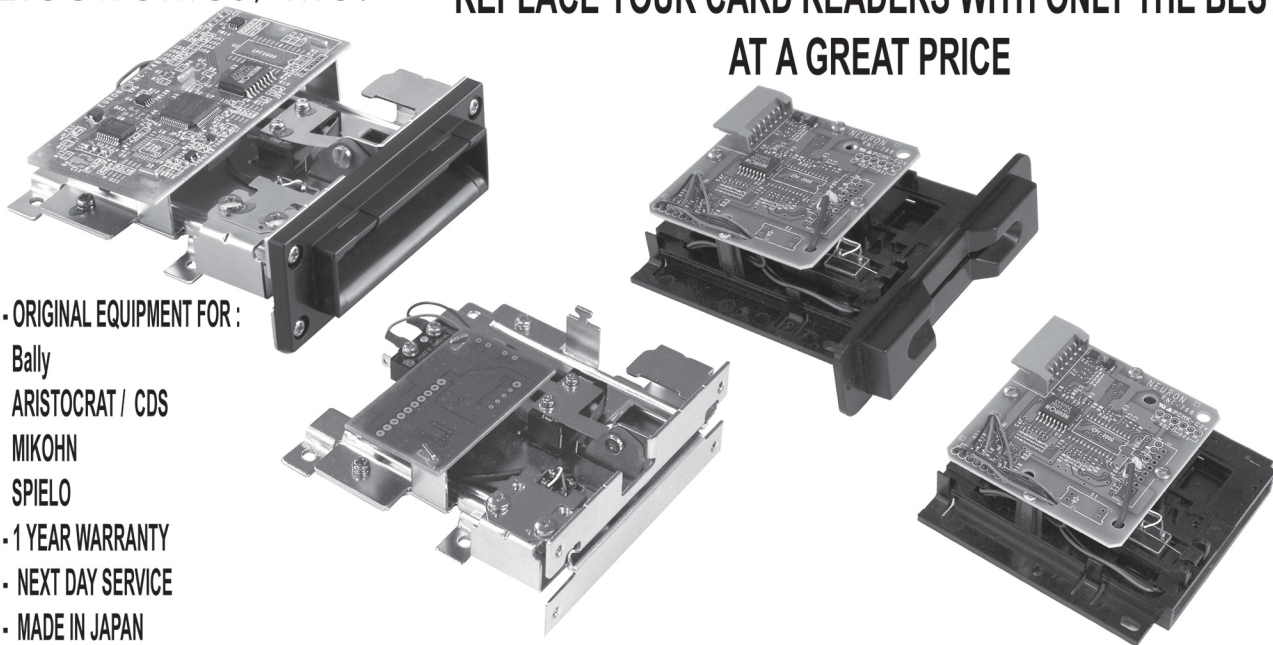
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\$20 dollar bill. That was one happy guest.

Player points tracking is no longer just a novelty offered by a few casinos. In fact, it has evolved into an essential aspect of the overall experience for the casino guests in this day and age, and accurate points accumulation is crucial in providing a pleasant and positive experience that will last in the memories of those who have visited your establishment. I would describe today's guests as clever individuals that are wise to their surroundings, very much in tune to what rewards are available from playing slot machines, and savvy about the benefits offered to guests at each establishment. Guests like to check their point totals periodically during a visit and they want to know in an instant exactly what they have on their "player's card". The guest wants that number at a glance, and it has to be accurate, anything less is unacceptable to them. Guests unable to do this at the casino slot machines consider it to be a failure on the part of the casino—they chalk it up to poor management and poor employee maintenance. That problem will quickly be identified as such, and become a tense issue that is uncomfortable for the guest and employee at best. Simply put, it could become the one thing that stands out in a person's memory, tarnishing an otherwise good experience and it could influence whether that guest returns to that casino.

The good news is that this can be avoided with regular use of the Plow™ card reader cleaning system.

From the very moment the slot machine is powered up, there is a cooling fan constantly running. The fan creates a vacuum that continuously pulls air and airborne matter through the card reader. Dust particulates, grit, oily grime, and plenty of nicotine and other cigarette smoke components bombard the card reader at all times. Along with the sheer nature of the device, in essence, repeated insertion of the player's club card as the machine is used by customers, the card reader quickly accumulates what I call a "dust bunny," a conglomeration of dust, dirt, and smoke residue that forms a dust/grit line of gunk at the back of the card reader. This prevents proper card travel inside the card reader. Machines located in high traffic zones will collect this unwanted material much faster.

The Plow™ was developed to eliminate virtually all card reader problems related to dust, dust particulates, dirt, and grime. This product was designed so that one or two insertions of the Plow™ card reader-cleaning card immediately makes the card reader functional again. This allows instant, real-time, resolution of the problem and immediately places the slot machine back into service.

Using the Plow™ in a comprehensive maintenance program routine that includes all card readers in your facility will eliminate player points tracking issues related to the mechanical failure of the card reader. We recommend once weekly cleaning of card readers in high usage card readers and once every 2-4 weeks for

card readers in lower usage machines.

The practical benefit of using the Plow™ was to eliminate the guest disputes, slot machine downtime, technician time to remove and replace the disabled card reader, and cost of replacement card readers. There is a significant savings of man-hours, manpower, and equipment costs with the Plow™ card reader-cleaning card.

In a single sentence, the Plow™ with its novel, patented design, cleans and restores the function of virtually any type of device that uses a magnetic reader head for data transfer where other cleaning cards fail. What's in it for a slot tech? Using the Plow™, you will be able to fix a machine for a customer on the spot. You will have happy customers who think highly of you and your skills. There's a great feeling in that.

If you would like a free sample of the Plow™ please contact us. Waltem Technologies of Connecticut, LLC is the east coast distributor of the Plow™. You can contact Waltem Technologies of Connecticut, LLC at our web site at www.waltem.com or by calling our toll free line at 1-866-695-PLOW (7569) or via e-mail at: theplow@waltem.com

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Heber Appoint Eurocoin as Reseller

Heber, the world's leading manufacturer of electronic gaming control systems, are proud to announce that they have appointed Eurocoin Ltd, as their new reseller of X-Line products. The UK based supplier of products for the gaming and amusement industries, have added Heber's X-Line range of USB gaming I/O peripherals to their extensive catalogue. Heber's Development Kits are also available directly from Eurocoin.

"We are delighted to have been appointed as resellers of Heber's X-Line peripherals," said Garry Holland, UK Sales Manager, Eurocoin Ltd. "This partnership brings further benefits to our customers, who can now source all of their key gaming system components from Eurocoin. Heber is a world-class brand and X-Line fits perfectly into the Eurocoin portfolio of products".

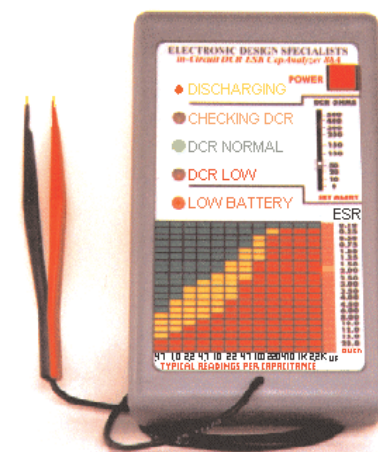
John Malin, Heber's Sales Manager added: *"The partnership with Eurocoin is a great opportunity for both parties to add value to their respected customer base. It also increases the strength and positioning of both Heber and Eurocoin in the gaming industry."*

For more information on Heber, and the complete range of Heber's products, visit www.heber.co.uk. For more information on Eurocoin, visit www.eurocoin.co.uk



The Eurocoin stand at ICE 2008. Below, Heber's John Malin with Slot Tech International Magazine's David Corfield

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No Communication on IGT Video Poker

We recently received a shipment of 23 new IGT games. Of the 23, 13 of them were AVP video slots. The other ten were video poker games. Setup and installation went pretty well with the 13 video slots but one of the video poker games had me scratching my head for a while. The games had been prepped with the majority of items installed before we set them up on the floor.

It worked out that we didn't install the games until a week after they arrived. With the holidays and all, it was decided to only install the 13 games and hold off on the other ten. It was now time to power up the games and make them ready for testing. We made sure that the progressive sign incremented, that everything in CDS was working properly, and that the games accepted bills and tickets.

One of the first games that I

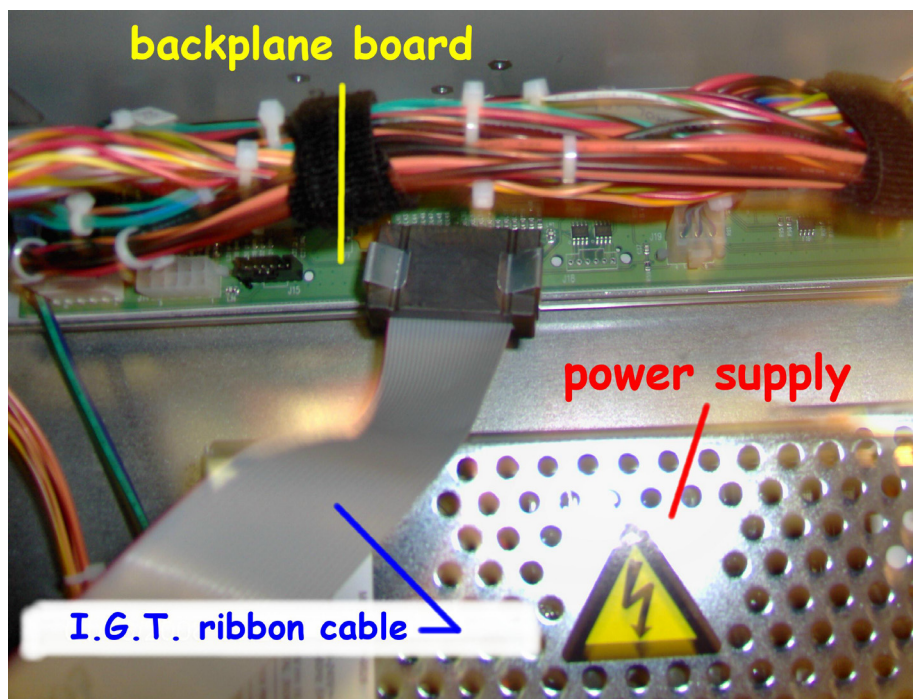
Quick & Simple Repairs #36

By Pat Porath

looked at had a "verify options" error and "game disabled by SAS" error. What was going on with this? The games were already setup in the back hallway with the main processor boards, Sentinel boards and such already installed. What was the deal? EVERYTHING (so I thought) was checked. On the machine end, the SAS channel was set on 3, the SAS address was set on 1, validation was set at "enhanced", the quarter denomination had been set, etc. Why wasn't I getting a DOOR OPEN and DOOR CLOSED status on the CDS

display? I went through the bank and checked the Sentinel number identifications; they were all correct. Even the machine specific machine number had been entered into the Sentinel.

Nothing looked out of the ordinary in the software, so it was time to check out other items. When looking at the "deluxe motherboard" I noticed that a ribbon cable had fallen out of its socket. Being that the cable comes from the board that the "Sentinel interface" cable plugs into, PROBLEM SOLVED RIGHT? Wrong (again). It is correct that the



ribbon cable DOES have to be plugged in so the machine will communicate with CDS but it did not solve this specific issue. It was one of the problems but didn't fix it.

Next, the Sentinel was inspected. So far everything looked OK and normal so why not try a Sentinel RAM clear? The problem still remained, the CDS display would only show a DOOR CLOSED. When it only shows a DOOR CLOSED when the main slot door is actually opened and closed (with all of the door switches working properly) this is a strong indication that the game IS NOT communicating with the tracking system. Upon further inspection of the Sentinel, the cable that connects the Sentinel and the SMI boards together looked like it had a broken wire. Maybe this could be the problem? It makes sense because the IGT interface cable does in fact have two connectors on it: one to the Sentinel and one to the SMI board. I removed the cable, made the repair and still, no results.

What was left? Maybe the interface cable was bad or we had a bad board. I KNEW that I "globaled" the other side of the bank. Why not check the "global settings" on this game? A "global card" at the casino I work at is password controlled and allows the user to set CDS options such as

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the type of communication settings are needed such as "IGT Winner" and "SAS." Some of the other options include setting the Sentinel ID number, making sure the machine accounting denomination is correct, and checking to see that the correct machine number corresponds to the actual machine. When scrolling through the "global card options" one of the communication setups was selected at "NONE." This more or less means NO types of communication will work! It wouldn't have made a difference if the slot machine was brand new fresh off the truck (which this game was) and if the complete CDS parts were brand new for that game. With the global option set at NONE, it would NOT work. By selecting the option of "IGT Winner" and "SAS" with the global card, I had a perfect DOOR OPEN and DOOR CLOSED on the CDS display, which meant game communication with the Sentinel had been established. One tiny important setting that was overlooked made the game not functional.

IGT "Trimline" Locking Up For Small Payouts

With the way our ticket printer and game options are set, all payouts are supposed to be paid in a ticket with the exception of "taxables" a jackpot of \$1200 or more. Most of the time when I hear of a small

payout amount, more than likely, something is wrong. What the problem may be is hard to say. It could be numerous things such as lost communication with the game or with the tracking system. A printer may have malfunctioned or maybe even a game option that isn't set correctly. With this specific game, I was notified that it had "locked up" for a small payout a few times and needed attention so when I had the chance, I checked it out.

When the main door was opened and the diagnostic button (located behind the main LCD) pressed, it displayed "printer open" (not to be confused with "printer head open"). This indication told me that it was possible that there was a problem with the "printer closed optic." On a FutureLogic GEN 2 Universal ticket printer, (the standard GEN 2 also has it) the optic is located on the far back left hand side (when the printer head is closest to you). The "optic flag" is located on the printer frame assembly, separate from the printer assembly. In a nutshell when the unit is pushed all the way back into the slot machine, the optic flag breaks the infrared light in the optic and tells the machine that it is closed. When I pulled the printer out of the game, I noticed that there was some unusual resistance. Something was catching on it. Once it was removed from

the game, it was obvious what had happened. The printer cable tie wrap had broken and was obstructing the track in which the unit slid back and forth in the game. When someone had loaded the paper in it and the printer was pushed back into the machine, the cables broke off the "optic flag." This in turn caused the "printer open error." Broken part = broken machine. I can't say for sure but there is a chance that the printer was forced into the machine which caused it to break. Try not to ever force anything with slot machines, such as slamming a main slot door.

On an IGT S-plus and S2000, if the main door needs to be slammed to close it, more than likely there is a problem. There may be a small bolt UNDER the coin tray where it seats onto the machine. If you run across one of these games, simply pull off the tray and look for a foreign object. Maybe even the four-pin speaker connector has been partially broken and the coin tray isn't seating properly. That will cause the main door to close and lock with difficulty too. Anyway, that is a different topic. Back to the printer optic flag problem. When I noticed that the flag was broken, the printer frame needed to be replaced. With a replacement installed, the game was back online without a problem.

Aristocrat Slant-Top "Main Door Switch" Problem

Have you ever run into a slant top Aristocrat where it wouldn't show a "main door" closed, even when everything with the door was fine? Perhaps the hopper door switch was faulty? That checked out fine, so did the bill acceptor exterior door. All of the doors seemed to check out fine. The main slot door, the hopper door, and the bill acceptor doors all were fine so what was left? The Microswitches (OK, They are really Cherry switches) looked OK. None appeared to be broken and all of the wires were connected to them. I didn't feel the need to test them with a multimeter at this point because the game was working fine a few minutes ago. Then suddenly, a very small light emitting diode turned on in my head. I asked myself, "What about the top door?" I've struggled with slant-top games in the past in which they would NOT show a "main door closed." The problem was the top glass door assembly wasn't locked properly or the lock assembly needed adjustment. On this specific game, somehow the top door lock assembly had come out of adjustment. As soon as I pushed on it, the game showed all doors closed and the bill acceptor lit up, which meant that the game was ready to be played. When I pulled the

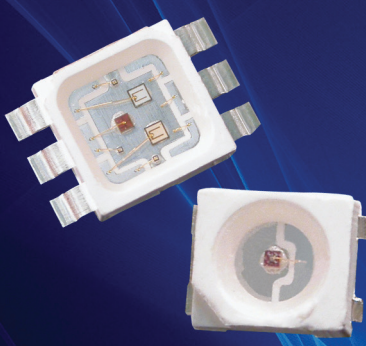
March 2008

top glass out, I could see that there was room for adjustment, maybe 1/4 inch or so. I set at what I thought should be pretty close, but it wouldn't lock. I had slid the "lock striker" inward and had to back it off a bit so that when it went into the locking mechanism, it in fact did lock. On the second attempt it worked great and I haven't received a complaint on the game since.

Konami Ticket Acceptance Problem

We recently had an issue where a few of the Konami upright video slots wouldn't accept any tickets. They were in the "Fusion" progressive bank and no minor fixes would cure the problem. For example, like most games, it must be communicating properly with the system, the printer must have paper loaded, all of the game and tracking system options must be setup properly, and the bill acceptor needs to be working correctly. All of this looked to be in order but the game would not accept a ticket. We ran into this ordeal six months or so ago. What exactly had we done to correct the problem? A RAM clear was brought up and so was replacing the Sentinel. How about changing out the Sentinel board first and go from there? It was done and as


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sure as the day is long, the game accepted a ticket on the first try. We are running the CDS Oasis tracking system, so if you have any Konami upright video games that are in a "Fusion" progressive bank that aren't accepting tickets, try replacing the Sentinel. The games are running great, they accept bills AND tickets now.

If you are unsure that a game may not be accepting tickets, it is quite easy to look into. If you have the Oasis system, once in the diagnostic monitor, ENTER in the specific machine number. Next, click on the "transactions" tab. This screen (at the casino I work at) shows more or less all of the activity that went on with the game within the last couple of days. Simply scroll down the screen and look for any ticket rejected, communication, or bill acceptor errors. If a game did in fact accept bills and not tickets, it will show on the screen. So, if there is an issue with a Konami not accepting tickets and all of the "normal" things look OK, try replacing the Sentinel board. Is the Gaming Floor a Bit Slow?

If the gaming floor is slow, there is ALWAYS something to do. The list can go on and on. A few examples to pass the time away are to clean and calibrate bill acceptors, check the "no handle" report to find out why the games on the list

weren't played, replace incandescent bulbs with LEDs, replace small bulbs in signs with color LEDs and blow the dust out of ticket printers with compressed air. Other things include cleaning and organizing the shop or shops.

Recently we received two new WMS games that came shipped with EVERYTHING: Nuts, bolts, small screws and nuts used for mounting CDS equipment, an extra cable that we don't use (you never know when you need a piece of handy wire) and even fuses. All of these items were put into one box and later separated. Our "south shop" is relatively new and there aren't a whole lot of "odds and ends" in it but we are accumulating some now. Coin cups that are full of odd and end items can get separated and put away. I grabbed the label maker, started separating the items and put

them away. Now if a fuse is needed on the south part of the floor or if a maintenance man asks for a fuse, there is a chance we will have one in the south shop. LED Replacement in Games

When time allows, the incandescent bulbs can be replaced in games. I've been working on the IGT games that we have, removing the dull looking old type bulbs and replacing them with 12 volt bright LEDs. The newer games that we have already have the LEDs in them. As for the older ones, "install it and forget it." If I recall correctly, the bulbs will last in the range of three to five years! I installed "Trivoli" LEDs in a sign a couple of years ago and they still look great. If you get the chance, take a look at an older game on the floor that has the old type button and bill acceptor bulbs in it, and then look at a newer IGT that has them already in-



stalled. There is a remarkable difference between the two. On the "Game Kings" where the bulbs are installed vertically, there are about six of them. With the old bulbs installed, you could actually feel the heat from them on the outside of the glass. The LEDs of course run cool so you couldn't feel any heat at all. It should even bring the inside of the game temperature down a little. On a "Game Kings" that I was working on, there are around six bulbs in the right hand side of the door (above the bill acceptor) and depending on the model of the game, 14 player buttons. The bill acceptor may have the old type bulbs in it too, depending on the model. Once all of them are installed, they look awesome, run cool, and shouldn't need replacement for years. Which machine would you rather play, one with dull yellow player buttons or a game with bright white ones? I know which one I would choose.

Blowing out ticket printers with compressed air: I wouldn't recommend taking on a bank of games with a CAN of compressed air. Why? You may ask. It will definitely work but it is expensive and can be used for calls on the floor when only one printer needs attention. What we use is a small "air pig." An air pig is a refillable, lightweight tank that is easily portable. It is



also used for blowing out bill acceptors. Ours were purchased at the local "Menards" store and one of the slot techs put a different hose on it so it had a coupler. Now the air pig has a longer hose and various "air chucks" can be used on it. This is MUCH less expensive than canned air. Blowing the dust out of

ticket printers can mean less down time on a game. I clean all of the printers that are received on the bench. In some cases they ONLY need to be cleaned to get them working again. A dusty optic will cause a unit to not feed correctly or even not feed at all. If printers are blown out on the floor before a problem arises,

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they will run better and longer. An IGT Video Poker Game That Didn't Have Any "Coin-In" For Two Days

"Coin in" is an older term that pretty much has the same meaning now as it did back then. We receive a "no handle" report from accounting when machines don't have any "coin in" for 24 hours or more. "Coin in" used to mean physical coins that were inserted into the machine and "credits bet." Today the definition of "coin in" means more like "credits in," credits that

came from bills, tickets, or even promotional cash. While looking at the no handle report (games that look like they weren't played at all because the coin in meter didn't increment) I noticed that a video poker game's meters didn't increment. My first question was, "Why wasn't it played?" I went to the game, inserted my slot floor card, opened the main slot door and noticed right away that the CDS display did NOT show a main slot "door open." I closed the game, opened it back up again and the same thing. The

display did not change from "door closed" to a "door open" status. What does this mean? It is a strong indication of lost communication between the game and the Sentinel. First things first, reboot the game and the Sentinel to see what happens. They came up fine and I now showed a "door open" and "door closed" on the CDS display. Simply rebooting both the Sentinel and the game got it working again.

- Pat Porath
pporath@slot-techs.com

Slot Tech Congratulates

FutureLogic Celebrates Its 25th Year in Business

FutureLogic, Inc., has announced that the company will mark a milestone in the thermal printing industry this year, celebrating 25 years in business. Founded in 1983, FutureLogic has established a leadership position in the TITO printer market through technological innovation and outstanding customer service.

FutureLogic began doing business as an electronic design consulting business, and created its first custom printer for the medical device market in 1995. FutureLogic printers also helped facilitate the development of supermarket couponing systems that are used to retain and reward shoppers. Today the company designs and manufactures thermal printers for casino gaming, medical, RTAL, gas pumps, promotional equipment, kiosk, and industrial applications.

In the gaming industry, FutureLogic has been setting performance standards since 1999 – winning ten industry awards in the past three years. "FutureLogic developed and launched the first TITO gaming printer, in collaboration with IGT designers, for the introduction of EZ-Pay," says Nick Micalizzi, Vice President of Sales and Marketing for North America. "Today we have more installed TITO printers than all other manufacturers, and currently estimate that more than four billion tickets per year are printed across the Americas, Europe, Africa, Asia and Australia."

Although TITO technology has been widely adopted in U.S. casinos and some countries around the world, it is still a developing market in other parts of the world. One of the company challenges is to ensure that those regions receive the engineering, technical service and regulatory

support that has made FutureLogic the leader in gaming printers worldwide. FutureLogic International has enjoyed significant growth over the last three years and market penetration in Europe and Asia has exceeded all expectations. The company has also grown operations in Latin America, and recently expanded operations with a sales, service and distribution center in Macau.

"Our goal is to be our customers' best printer resource, worldwide. This means direct global support coupled with in-depth local knowledge," said John Edmunds, Vice President of International Sales & Marketing. "Choosing FutureLogic is not just about specifying a reliable, high-performance product – it's also about the world-class support behind the FutureLogic name; whether that's rapid turnaround on new firmware and ticket design requests for a casino opening, or on-the-ground support for major TITO trials and installations."

In addition to establishing engineering and technical service operations in key markets around the world, FutureLogic is working hard at developing new technologies and implementing emerging OEM design requirements. "Our collaboration with industry-leading game manufacturers around the world has been an important factor in our ability to improve printer functionality and develop the interfaces required for next-generation electronic games," said Micalizzi. "Our new GEN2 Universal printer, for example, anticipates new standards for the hottest trend in gaming – downloadable games."

The GEN2™ Universal printers provide a migration path and support all current and emerging game types by incorporating three game ports, including RS232, NetPlex and USB 2. As a platinum member of GSA, FutureLogic participates in the development of communication standards and reference designs, sits on the Board of Directors, and chairs the GSA's GDS (Gaming Device Standards) committee.

Another key development from FutureLogic is the PromoNet solution, a template-based promotional coupon system. "PromoNet will help casinos design and manage a wide range of promotional campaigns from the convenience of a workstation PC, and can be used with any gaming machine that is equipped with the GSA version of FutureLogic's popular GEN2 Universal or GEN2 VST Universal printer," said Edmunds. "With non-gaming revenue becoming more important to casino resorts and complexes, linking reward programs across multiple leisure experiences, as well as casino floors, will provide operators with new marketing opportunities."

Edmunds noted the GSA open protocol allows casinos to leverage existing GEN2 Universal hardware across the casino floor, eliminating the need for costly modifications to printers and/or communication protocols. PromoNet is being developed in concert with the GSA standards and FutureLogic anticipates it will be installed in harmony with the release of certain GSA standards.

"Although FutureLogic currently dominates the TITO market, our focus remains on developing technologies that improve reliability, add value, and expand printer functionality," said Micalizzi. "We see continued growth in the global gaming market and are positioned to deliver the engineering expertise, local support and exceptional customer service required to advance the evolution of cashless technology."

FutureLogic, Inc. Nick Micalizzi, VP Sales and Marketing 949.487.4829
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Slot Tech Press Release

TYCO ELECTRONICS' ELO TOUCHSYSTEMS BUSINESS PRESENTS SUZO INTERNATIONAL WITH "STAR DISTRIBUTOR AWARD" AT 2008 LONDON CASINO SHOW

Accolade recognises exceptional sales performance in gaming sector

Tyco Electronics' Elo TouchSystems made a special presentation to Suzo International at last month's International Casino Exhibition (ICE 2008) in recognition of the gaming distributor's exceptional sales performance during the last 12 months. The "Star Distributor" award was made on the second day of the show at Suzo's stand by Elo's Managing Director Luc Mergeay.

Mergeay commented, "This award is to mark our recognition of Suzo's exceptional performance in 2007 which has seen a staggering eight-fold increase in sales volume with a number of major contract wins across Europe. In addition we have seen an increase in market share that can only be described as phenomenal. Our association with Suzo goes back to 1999 and has grown steadily over that time, blossoming into a highly fruitful and mutually beneficial relationship last year. This is due in no small part to Suzo's knowledge and experience of the European gaming market along with the company's exceptional reputation and international reach."

Marcel Oelen, Suzo's Managing Director, commented, "We are very pleased to receive this award as it acknowledges the hard work put in by all our employees to help make Elo touchscreens and touchmonitors a big success in the gaming market. The unrivalled quality of the product and the excellent technical and logistical support provided by Elo makes our job easier in a very competitive market. With Europe's booming leisure industry and the new products Elo is launching at ICE, we expect con-

tinued growth for Elo touchmonitors in the years to come."

More information on Tyco Electronics can be found at www.tycoelectronics.com

For more information on Elo products and services, please contact +32 16 352100, visit www.elogaming.com or direct email inquiries to elosales@elotouch.com

More information about Suzo is available at www.suzo.com



Elo's Managing Director Luc Mergeay presents the "Star Distributor" award to Marcel Oelen, Suzo's Managing Director.

Slot Tech Press Release

NANOPTIX INC. LAUNCHES PAYCHECK™ HIGH SPEED COUPONING PRINTER Specifically Designed For Printing Promotional Tickets

Nanoptix Inc., has added another printer to its product line: The Paycheck™ High Speed Couponing printer. This unique printer automatically Cuts and Stacks up to 200 printed tickets eliminating the need to have to manually detach each ticket - saving a lot of time and labor. It prints numerous tickets in a very short period of time (just 2 seconds per ticket), is two-color ready and has tons of memory to be able to support multiple fonts, images and barcodes which help create attention getting promotional coupons. The

Paycheck™ High Speed Couponing printer also prints in sequence enabling casino personnel to account for each ticket. With its print head life of 62 miles, this ultra reliable printer will serve your casino for many years to come. The Paycheck™ High Speed Couponing printer has a serial and USB port and is compatible with Bally and

Konami Systems.

For further information, visit the website at www.nanoptix.com.



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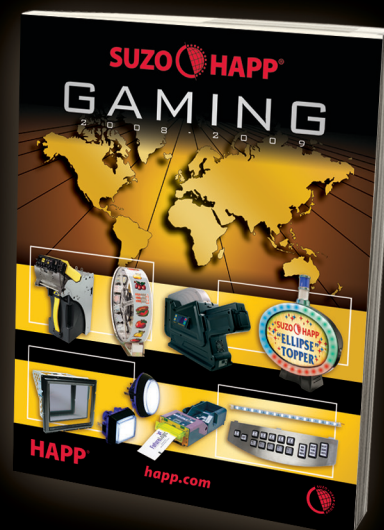
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Using the Shop Computer as a Tech Tool

By Vic Fortenbach

The shop computer is fast becoming an information center for set up, repair and operating information for slot machine technicians. Having a computer with internet access in the slot repair shop has become the norm. If your boss is hesitant about having a computer in the shop, convince him or her of the many uses a computer has. One of the best uses of the slot shop computer is for a shift turnover log. Instead of a paper log, a simple Microsoft Word file with tables can be set up for data entry. The computer versions of the shift log would have the usual items a paper log would have plus the ability to find any word or phrase. Using the find or search tool within the file, you can locate a specific machine number, a problem name or even a vendor's date and time they were on property to repair a specific game. For example, typing in the words "ram clear" would display all the ram clears completed since the computer log was created. You can get more specific and even search for which technician completed the ram clear, just by typing in the tech's name and the words "ram clear." This sure beats spending time looking over many pages

trying to find a certain ram clear in a paper shop log. The shop turnover log can also be formatted for each month by having a different file for each month. It makes searching for information easier, since you do not have to search the whole large file and having multiple entries. Another plus for using a computer for any log is that it makes reading easier, since there is no cryptographic handwriting to decode. Everything is readable as it's typed in.

A slot shop parts inventory is another great example of a computer use in a slot shop. Microsoft Excel and Microsoft Access are two programs that can make the parts inventory task easier. Using Excel for a slot shop inventory tool allows lots of flexibility in creating and tracking parts. You can set up one spreadsheet file with different spreadsheet tabs for each vendor, as well as cell calculations for total cost of parts on the shelf and even their depreciated value. There is no better way to set up the format of the shop inventory. Depending on your needs, you can categorize by parts instead of vendor and it's up to you. If you're unsure of setting up an Excel program, there are many other options. One is to purchase a ready-made inventory tracking program. One that has been mentioned is from www.intellitrack.com. Check out their website for more information and lots of cool inventory solutions. I have not

used the intellitrack inventory system so I can not vouch for it. Another inventory solution is to contact Herschel Peeler (also an author for Slot Tech Magazine). He has created an inventory program for Excel. An Access version may also be available. You can contact him at hpeeler@slot-techs.com.

You can expand the limits of a shop computer beyond just the typical data and website functions. The shop computer can be used as a test fixture. One idea suggested by Mr. Peeler is to set up the shop computer as an IGT SENET test fixture. With some basic software and hardware that you can create, you have another technical use for a shop computer.

One last suggestion to convince your boss of the virtues of a shop computer is Slot Tech Magazine's FTP site. The FTP site, which stands for File Transfer Protocol, is chocked full of really great technical information for slot techs. Go to www.slot-techs.com and click on "Slot Tech Magazine Technical Department." There you will find over seven gigabytes of schematic diagrams, software and data sheets. To log on to the FTP section, you will need an FTP client such as Filezilla, SmartFTP or CuteFTP. Filezilla is free and available at www.filezilla-project.org.

Once you have convinced your boss that a computer is required in the shop, you will also have to convince him or

her that each technician with computer access also needs an e-mail address. Having a private e-mail address for each tech allows for easy two way communication and problem solving. An e-mail address can be also used for gaining access to manufacturers' web sites. Gaming manufacturers will send to your e-mail address, customer notifications or other time critical service related information.

The best reason for having a shop computer is access to the internet. The internet is full of web sites that have great information that can be used to solve tough machine problems. Accessing and using gaming related web sites for repair tips and information can mean the difference between having a machine off line for days (while the problem gets figured out) or just a few hours. Lots of really great technical information is available on the internet. Finding sources of technical gaming information will take time, and make your fingers sore; but once you have assembled a website list, you can refer to it and save time. A word of caution, don't spend half of your shift on the computer, the computer is a tool and some bosses may see it as an abuse if you spend too much time checking out websites.

Once you have created your list of important web sites, split the list up to include web sites you will need to check once a day and web sites that can be checked once a week. The list can be on paper and hung up for all techs to use, or stored as a bookmark in the computers website browser. Once you have saved the desired web site addresses, finding the same information again will be easier and will be a lot less time consuming.

Because the internet is public and its information is readily available to anyone with a computer and internet access,

confidential gaming information has to be controlled. The user name and password is the way access is controlled on the internet. Obtaining a user name and password for access to a gaming manufacturer's web site is required. The procedure is relatively painless. You will need to answer a few questions, one of which is the casino where you work and of course your e-mail address. Most user names and password request are fulfilled with in 24 hours. Some require a casino confirmation to verify that you really do work at a casino. Once the verification process and other information checks out, access is granted and your user name and password are e-mailed to you in a few days. Some of the larger gaming company's web sites like IGT (www.IGT.com) require you to use your e-mail address as your user name. You can create your password by yourself. Some web sites allow you to choose your own user name, as well. When you choose your user name you can get rather creative, like IMATECH, or mine, which is SlotTechVic (I know, it's not really creative).

There are basically three different kinds of gaming and technical web sites. One kind of web site is part of a gaming manufacturing company. These web sites can be quite large and have lots of information, everything from the current wide area progressive win to brand new games and products, as well as some good technical information. Another type of web site, are those that are operated and updated from game technicians themselves. These web sites have solid tips for repair and troubleshooting slot machines. All of the information presented has been gained from what they have experienced and encountered themselves. The last type of website is the community style type of site. These web sites are sometimes called a bulletin boards or chat rooms. They offer a format of questions and answers that can be referred to, responded to and updated as needed. These web sites are full of how to information in one place on the web.

All of the gaming web sites have basically the same information. Its how the information is presented that sets the

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gaming web sites apart from one another. All if the gaming web sites showcase their newest products, current job openings, a media relations area for the press with press releases and a technical area for technicians. The good technical information, including PAR sheets, is available only after you log on with your user name and password.

As I mentioned earlier, I have a list of web sites that I check daily and weekly. The first web site on my list to check daily is Slot Tech Forum (www.slottechforum.com). This forum is hosted by Pete Bachran and he brings to the forum over 20 years of slot tech experience. The slot tech forum has many sections devoted to slot machine repairs. All of the game manufacturers have their own sections as well as additional sections on rants, progressive and player tracking systems. In the forum, gaming related questions are posted and can be answered by anyone. The subject thread as it is called, is started with additional questions and answers. Sometimes subject threads will get quite long due to all the comments and answers. All of the subjects listed involve lots of opinions and fixes from lots of technicians, all offering different ways and ideas of troubleshooting and repairing a large range of specific problems.

Some of the other websites run by technicians for technicians include www.slotnotes.net and www.myslotnotes.com. Mr. Robert Sult who has also penned some articles for Slot Tech magazine has set up these two web sites with lots of good technical information. One interesting item on the slotnotes site is the circuit test. This link is located top and center of the web site. This test is good for all techni-

cians regardless of experience or knowledge.

www.sirslots.com is another website operated by a slot machine technician that is full of good real world information. The sirslots.com the website is split into two sections, one named slot central the other slottechjuan. The slot central section deals with industry related questions and answers, the section entitled slottechjuan deals with the repair of slot machines.

The WMS gaming website (www.wms.com) is one site that's complete and entertaining. From time to time WMS has been known to partner with larger casino companies and offer an online game to win prizes. The online games are designed to increase new game awareness. But the good technical information is under the "casino support" link. Clicking on that link, you can view all of the service documents, manuals and service notifications for both WMS video and reel games. One of the really cool options under the casino support link is the training option. This is the link where "Slot Machine University" is located. This online school is also at www.slotmachineuniversity.com. SMU has new and exciting online courses for slot machine technicians. These courses offer a certified status for graduates. All of the details for SMU are available online at the SMU website.

www.igt.com is International Game Technologies website. The website includes a part look up function. You do not have to know the IGT part number to find information about a certain part. If the part is from another manufacturer and it's used on an IGT machine, chances are good the manufactures part num-

ber is in the system and available for look up. A good example is the video card used on the trimline version of their slot machines. The video card was located inside the brain box. We could not see an IGT part number on the board. We found the manufacturer's part number and tried to purchase the video card from other sources but had no luck. We typed in the manufacturer's part number into the IGT part number search function to search if IGT had any video cards in stock and bingo they did.

Aristocrat technologies website www.aristocratgaming.com has all the standard information as on other manufacturer's web sites with one exception, a service tracking function. This function is for casinos with Aristocrat participation games (leased) in their casino. If a problem occurs on a game machine and it can not be repaired by casino personal, a call is placed to the Aristocrat service and support. The service and support operator will get all the required information about the game and its problem. A service ticket number will be assigned and the factory technician will be alerted. This information is then e-mailed to you so you can see the progress of the service call. No other game manufacture offers this service. You have to sign up for this service, but it is great logging into your e-mail account and seeing the status of the service call.

- Vic Fortenbach
vfortenbach@slot-techs.com

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On-Site Slot Tech Training Customized Classes Available

Randy Fromm's Casino School is a practical, no-nonsense look at how gaming machines work and how to repair them when they don't. **No previous knowledge of electronics is required** to get the most out of the school. The Casino School is geared for those who want to learn how to fix gaming devices without having to learn complex electronic theory or purchase expensive test equipment.

Be prepared for six hours of accelerated learning each day. Class begins at 9:00 am sharp each day and continues until 4:00 pm. The Casino School provides each student with reference materials and troubleshooting guides that will be valuable aids for repairing equipment on location and in the shop.

Students learn how to work with:



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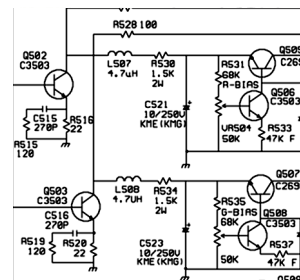
This relatively inexpensive piece of test equipment is easy to operate. Casino School students learn to use the digital multimeter to perform tests and measurements that will pinpoint the cause of a failure down to a single component.

ELECTRONIC COMPONENTS

The individual components used in games are introduced. Parts such as resistors, capacitors, diodes, potentiometers and transistors are covered individually. Students learn how the components work and how to test them using the meter.

SCHEMATIC DIAGRAMS

Schematic diagrams are the "blueprints" for electronics. Learning to read schematics is easy once you know how the parts work!



POWER SUPPLIES

Power supply failure is a common complaint in many different types of systems. Power supply failures are discussed during the class, along with shortcuts for troubleshooting and repairing them.



CRT and LCD MONITOR REPAIR

The monitors used in video slots are designed for quick, easy, and safe repair. Students will learn the theory of operation of all types of monitors and how to repair monitors down to the component level. Of course, monitor safety will also be discussed.

You do not have to send your slot techs to Las Vegas or Atlantic City for training. The Casino School brings the training to you. Contact Randy Fromm's Casino School today to reserve a date for your tech school

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TITO Continued

By Kevin Noble

The CVT is another device introduced to us during the TITO phase to go along with fiber optic cable and fiber boards. Writing before and after reports has become second nature as our Electronic Gaming Enforcement Officers require these reports after RAM clears, machine moves and new machines coming onto the gaming floor. The reports

help the EGE officer make sure the games are responding. There are no tickets in the system on the games being tested, the gross meters report to make sure the meters have incremented correctly to their testing, and lastly the machine doors are reporting open and closed. We are getting more and more familiar with the CVT and the fiber optic cables each and every day. We are by no means experts yet but that day will come where we will be comfortable in our troubleshooting skills on the EZ pay system. These are the basic reports we need for troubleshooting CVT problems

out on the floor. One way to test the machine to make sure it is on line with the EZ pay system is to verify all the information on the test ticket that was printed by the machine. The date and time, asset, CVT number, and your establishment and poll number should all be there. If any of this information is missing, you may be off line with the system, you may have a bad, miss-connected or crimped fiber cable or your central communication center could be not enrolled correctly. These are just some of the things we have come across in our short time in our TITO phase.

ALL MACHINES

- If no data is received for any of the machines in the "GROSS METERS" report, then have the "MAIN DOOR" opened and closed.
- If you have "NO MATCH ID" in the "SECURITY EVENTS REPORT", instead of "DOOR CLOSED", then has the "MAIN DOOR" opened and closed.
- To exit an option on the CVT, hit the same key again and it will allow you to exit the option in which you just entered.
- If you are in an option already (Status or Reports) you can hit the same key again and it will exit the option in which you entered.
- CVT freezes perform the "Forced Download" procedure
- CVT will accept its own tickets, but will not on another CVT call "IT".
- If the server is down, all CVTs will be down.
- Disconnected or off line machine will go into HANDPAY JP
- Konami games must be in service to see the main door closed in the door status report.
- Change the poll numbers on the game before placing them on-line. You may get a duplicate poll number error on the CVT from the warehouse from their testing and set up phase.
- If a printer jam occurs, the game will go into a manual jackpot after the printer pay is repaired and the tilt code cleared.
- Bally Games: If the machines are not accepting tickets or the machines are sleeping, put the games "In Service" mode, and reset the CVTs.

On the Atronic Cashline series, a new device called the dongle was also introduced to us in this TITO phase. This security device allows you to disable certain features like the coin acceptor and hopper and allows for the enabling of the printer. We also learned

that this dongle device is also valuable when we had to change the server for our new “Deal or no Deal” sign. There was a dongle specific for the sign needed to enter the server’s menu to change some of the configurations. After the initial RAM clear and the

setting of the options on the Cashline series, the additional menu or screen will pop up that allows for the setting of these new options. This is the information passed on to us to set our machines up for TITO:

PC SET-UP USING THE DONGLE NOTES

- Every time you RAM CLEAR the CPU board, you must use the LAPTOP to reset the printer options.
- Every time the dongle plug is removed it must be re-flashed
- In the options menu, the COMMBOARD is required to be set to “YES” because of the printer being used.
- The poll number of the machine has to be set on the dial switches on the COMM BOARD. (Switch #3 and #4)
- On the lower left-hand side of the monitor after a RAM clear the game will display what CNF version to set on the LAPTOP.
- The clock is set automatically by the CVTs.
- To verify the PC set-up options, turn and hold the reset key and scroll to PC Set-up.
- On the second page of the CONFIGURATION menu, you will be able to view the POLL # and SAS address. (example 1001, 10 is the poll number and the 01 is the SAS address)

PRINTER SET-UP WITH DONGLE

1. After a RAM clear has been completed the “**HARDWARE CONFIGURATION**” menu will appear on the monitor.
2. Verify and check what version “**CNF XX**” which will be displayed on the bottom left hand corner on the screen.
3. Double click on the “**PC MAIN CONFIG CNF 12 FOR WINDOWS**” icon on the laptop to enter the program.

#1 OPTION SET-UP

4. Select the “**OPTIONS**” menu. Verify the following:
 - **Serial Port – COMM #1**
 - **MAIN SET-UP VERSION – CNF XX**
(XX will be either 12 or 13)
 - Select “**OK**” to exit.

#2 HARDWARE CONFIG SET-UP

1. Select the “**MAIN**” menu and go to “**HARDWARE CONFIG**” and enter.
2. Scroll down on the monitor screen for the same “**HARDWARE CONFIG**” menu.
3. Verify the following options:
 - **COIN ACCEPTOR – NO**
 - **BILL ACCEPTOR – YES**
 - **HOPPER – NO**
 - **PRINTER – SEIKO SEIKO TPL (CNF 12)**
 - **- SEIKO (CNF 13)**
4. Press the middle button again to restart transmission
5. Once transmission has begun, press “**UPLOAD**” on the computer to load figures and “**QUIT**” to exit.

#3 SOFTWARE /LIMITS SET-UP

6. Select the **"MAIN"** menu and go to **"SOFTWARE SWITCH / LIMITS"** and enter.
7. Scroll down on the monitor screen for the same **"SOFTWARE SWITCH / LIMITS"** menu.
8. Verify the following options:
 - **METER COUNT-HITS**
 - **VALIDATION TYPE - ENHANCED**
 - **VALIDATION SECURITY - place check mark in the box**
9. Press the middle button again to restart transmission
10. Once transmission has begun, press **"UPLOAD"** on the computer to load figures and **"QUIT"** to exit.

#4 BARCODE TICKET

11. Select the **"MAIN"** menu and go to **"BARCODE TICKETS"** and enter.
12. Scroll down on the monitor screen to the same **"BARCODE TICKETS"** menu.
13. Verify the following options:
 - **TICKET LENGTH - LONG**
14. Press the middle button again to restart transmission
15. Once transmission has begun, press **"UPLOAD"** on the computer to load figures and **"QUIT"** to exit.

Because of the new options settings, we had to install an option sheet in all new games for every manufacturer's game type for every different game. This was beneficial when the options sheet was a generic copy produced by the warehouse on the option name and/or number and what we should set the option to. Between five and ten RAM clears could be taking place at any given moment by our technicians and off site technicians simultaneously. This was practiced at many different sites so an unofficial menu was created. This was one way we were all consistent and the mistakes were limited. The percentages, limits and poll numbers were left blank because they were to be site specific and set to the slot file. The project sheet helped determined the percentage, poll

number, max coin and top award of the game being worked on by the technician. In case there have to be EPROM upgrades, these EPROMS were flagged in red to alert the technician an upgrade is needed to bring the game up to date with the Gaming Commission. This included any printer and BV software, communication EPROMs, and any manufacturer's customer notices that were outstanding that needed to be addressed. We were also introduced to new slot terminology such as SAS secondary, validation, enhanced, cashless and poll numbers that were all disabled at one time now have a figure or setting. Once you get used to the RAM clears and setting these options many times over, you start to notice that they are consistent in every game now and you

begin to understand their meaning and the problems they create when one is set wrong. I had all these non-TITO option sheets laminated in a plastic and placed in a binder as reference for RAM clears. Every option was configured right down to the limits for each denomination at our site until TITO arrived. Needless to say, I have started on part two that now includes the site specific TITO options including Multi-denom that was just introduced this year.

Along with the options, changing the service report went from the standard 8 1/2" by 11" sheet to the legal size sheet. Being a guy, it is hard to write those large numbers in those itty bitty boxes. There is still no room to write numbers coin in, out, drop, and game



meters to name a few that are between eight and 11 numbers long because everything is enrolled as pennies. With the bill information already on the sheet, Voucher counts and value information had to be added along with the voucher validation number, amounts, and the tracking on where the ticket originated and where it is going to help the Audit department limit any variances and keep their books balanced. If anybody has a meter sheet that is technician friendly and has tons of room to write numbers that are 11 and 12 characters long and includes bill and ticket information I would love for you to send me a copy.

With the disappearance of coin, the drop and hopper storage locks have also disappeared. This is a welcome change for the technicians, not to mention no more getting wanded, no heavy buckets, no more removing our shoes and doing the hokey pokey and no more security escorts. We also lost our hopper contents inventory, programming the IDX coin acceptors and the repair and maintenance of the Jet Sorts in the Cage. We gained time, allowing us to better troubleshoot, and less time spent waiting for security. You can use the drop hole to run extra wire, run replacement fiber if necessary, electrical access keys that are already on my ring, no drop alarms going off when the patron kicks the door, and no drop and hopper storage door open codes to repair.

The service reports we receive from the Audit Department are now missing any metered coin drop, replaced by the ticket test. Gone is the pushing of the heavy oversized cart to secure the live cash box. Gone is the signing out of the BV key and the security escort. Gone is cashing out 15,000 nickel tokens and placing them back in the hopper. Gone is opening and dumping those 100 nickels the hopper spit out back in the hopper when I have 14,900 more to go and gone are the 35 game projects that all need to be all bill tested and cashed

out. That's one down and 34 more to go. The new procedure of taking meters, signing out a float, inserting that float into the game, cashing out that ticket, and recording all the ticket and meter information on a meter sheet has cut the time in half when bringing new games to the public, completing month end variance reports, and soft drop variance reports has been a blessing also. This is one procedure I am glad they changed.

- Kevin Noble
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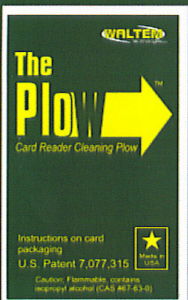

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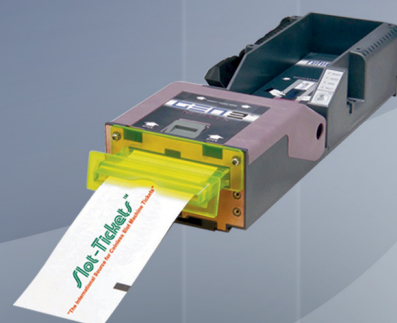
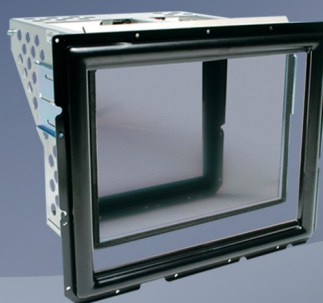
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