

January 2010

SLOT TECH MAGAZINE

Slot Machine Technology for the North American Gaming Industry

BLAZING

Your *Bally*

**Aristocrat MVP500
"No Communication"**

plus

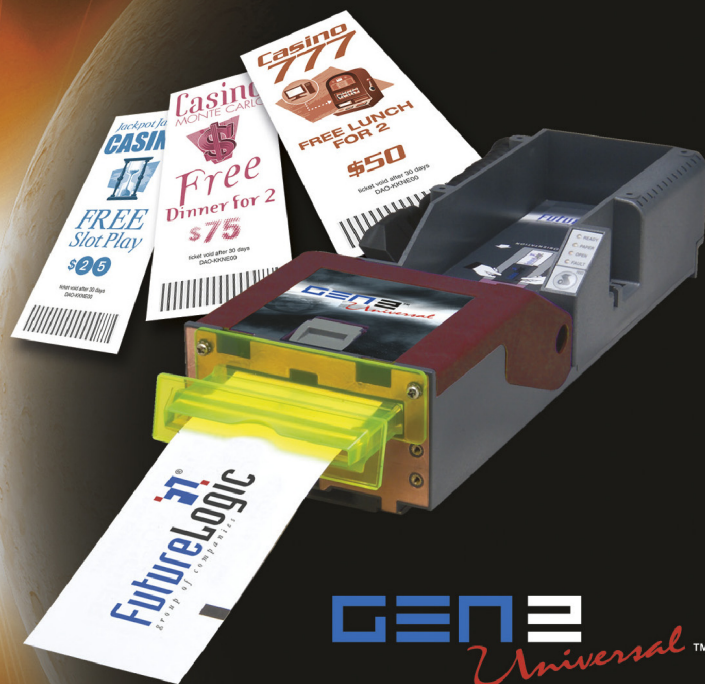
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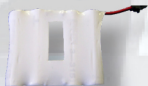


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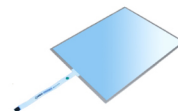
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Randy Fromm

Communication "issues" plague virtually all casinos from time to time. It's a fairly hostile environment for a wired network, with hundreds or even thousands of machines online at once and hardware that often includes SMIBs of one sort or another and their associated power supplies tossed into the slot machine, stuffed into whatever open space can be found. Each time a bank goes down, the troubleshooting process begins anew, looking for a bad home run, a pinched cable, a frayed wire or some other bad system component.

But what happens when the fault is intermittent and replacing parts and sub-assemblies doesn't locate the problem? This is the kind of troubleshooting that separates the professional slot technician from the mere parts swapper. Chuck Lentine is back with a nice little mod that not only fixed 100% of the intermittent failures his casino was experiencing but, as a side benefit, has eliminated hundreds of power supplies (one for each machine) as well. He shows us how he made his simple harness and gives us the part numbers and source beginning on page six.

There is a lot of other stuff in this issue. In fact, there is a dang lot of stuff in this first issue of 2010. I would like to thank my contributors for taking the time to write down and share their tech experiences so we all can benefit and do our jobs better. We're always looking for new articles too so if you think you have something interesting, I pay ten cents a word and ten bucks per illustration. A typical article pays \$200-\$250.

Also, a big new year's shout out to our wonderful supporters most of whom you see advertise each and every month in Slot Tech Magazine. Obviously, Slot Tech Magazine would not be possible without the support of our advertisers so when you're looking for replacement parts, touch screens, slot tickets, ticket printers, test equipment or casino seating, please look to our advertisers first. Thanks.

Happy new year. See you at the casino.

Randy Fromm
Randy Fromm - Publisher

Randy Fromm's Slot Tech Magazine

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#9290- Single RAW cold cathode lamp for 19 inch LCD monitor in IGT games

FOR BALLY GAMES

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#8950- 5 wire touch screen for **Bally Iview** 6.2 inch "IDW" LCD

#9190- Mylar protective sheet (peel & stick) for the touch screen on **Bally Iview** 6.2 inch "IDW" LCD

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Aristocrat MVP500 “No Communication”

By Chuck Lentine

Our machines have two communication networks (primary and secondary hosts) for reporting and machine functions. All this runs through our very good friend the little SPC2 board. This time the SPC2 is not the culprit! While volumes could be written about the SPC2, this article will focus on the secondary system and assumes that your SPC2 board is in working order.

We have a fiber link box in every Aristocrat game (Part# 574980-L) that connects to the next game in the bank via fiber optic cables. The gray connector transmits and the blue receives. It is powered from an external +5 VDC power supply, Part# SB-055A0F-11 (see figure 1). This power supply is a generic desktop type and is usually found under the brand names of

Stontronics in the UK and Condor in the USA. Each fiber box transmits and receives information to and from the network on the bank. All the games must be connected properly in a “loop” for these to work properly. A correctly transmitting box will have a fast LED flicker. A slow flicker indicates a failed fiber box or a damaged fiber cable. If the fiber network goes down, all the games on that bank will eventually display “disabled by secondary host” or “power up dis-

abled.” Sometimes this tilt is immediate and other times it can take up to 60 minutes to show up after a loss of communications. If there is a customer playing, it will complete their last game and force them to cash out.

For the past couple of months, random banks of our Aristocrat games have gone from working fine to all of the sudden disabled and back up again for no apparent reason. Our initial response is to check for

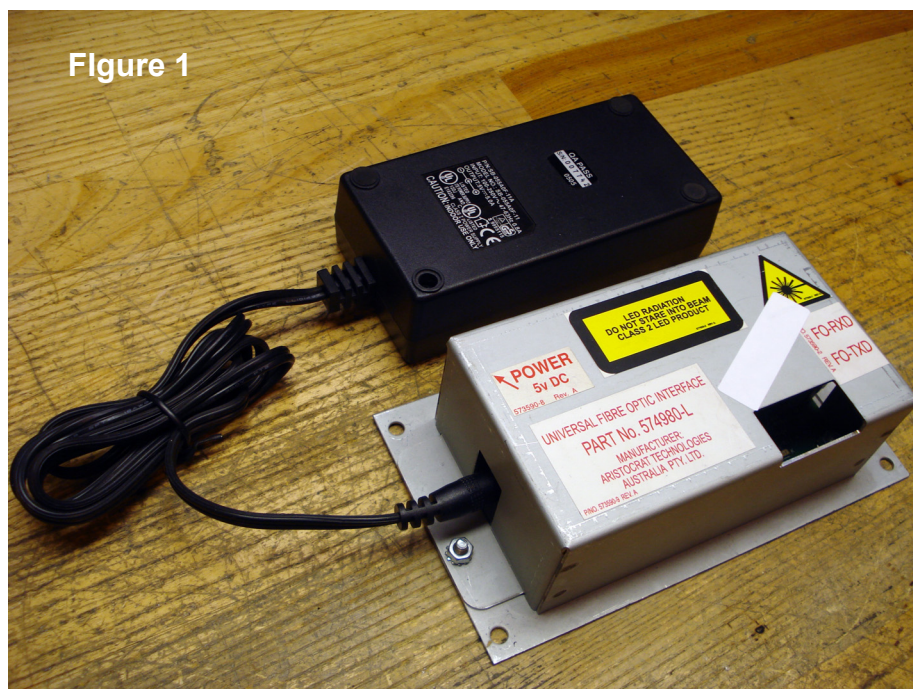


Figure 1

A fiber link box in every game connects to the next game in the bank via fiber optic cables. It is powered from an external +5 VDC power supply.



Bob Yabroff
President

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supported
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“But to tell you the truth, the content
of this magazine is gobbledygook to
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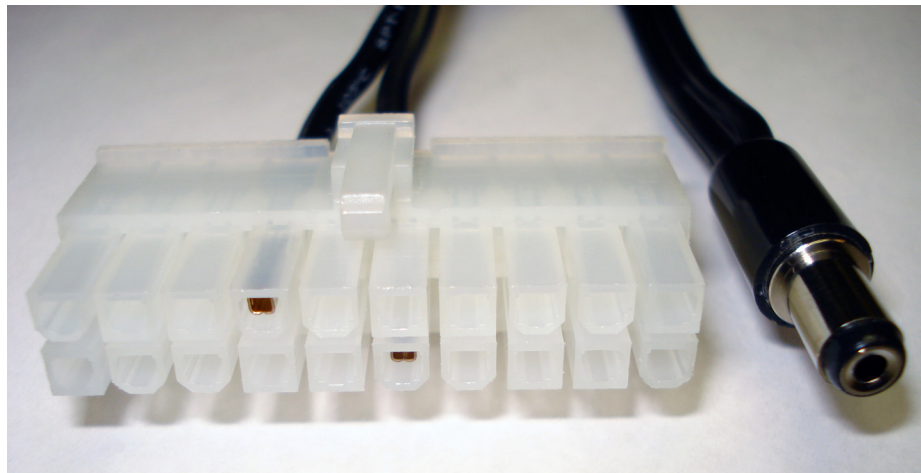
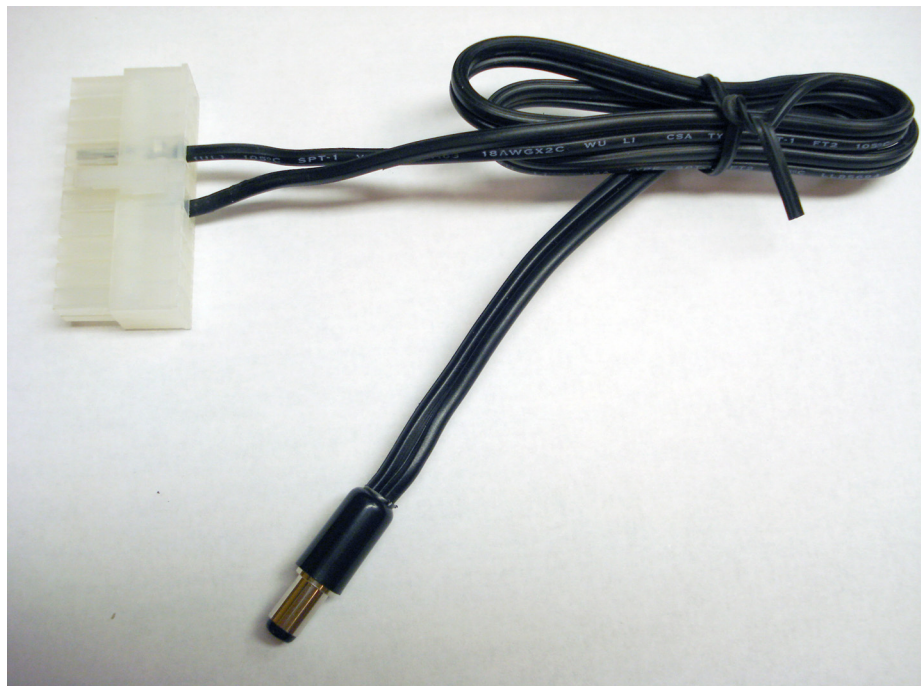
damaged fiber lines and inoperative fiber boxes to make sure all are working correctly because any one of these fiber boxes can bring down the bank if they fail. This is especially fun and exciting when it's intermittent and there are 16+ machines on a bank to check on a really busy night. Whatever the problem was, it had corrected itself for the time being but still left us curious. The machines were down for about five to 15 minutes. This was just enough time to respond to the call, help any customers cash out, open all the doors and get a visual on the fiber boxes LED indicators. By then, the bank would be communicating normally. Every shift was going through this, spending a lot of time chasing this one down.

After replacing a couple of suspect fiber boxes and power supplies, all seemed OK and communications were normal for a week. The next day, another bank would do go down and be fine for a week after that. It could have been any one of the machines that zonked out. All of our suspect parts were checked and installed in smaller banks with only four machines so we could keep an eye on them near the shop. Never would this bank go down. The plot thickens!

After running out of spare power supplies and fiber boxes, we were really get-

ting annoyed with this issue. We went out to one of the banks that frequently went down and installed six modified spare fiber boxes from WMS gaming. These are self contained units and have the power supply built right in them. This stopped all the issues with this particular bank. We now know the issue is with the fiber box or power supply that came with the machines.

For about a week we monitored the voltages on a few problem machines starting at the input and output of the fiber box power supply. The primary AC side remained solid while on two occasions the output voltage went from a steady +5 and spiked up to +8.3 and as low as +3.0vdc in a matter of minutes. A loss of communications was also noted at this time. The regulator circuits in our



Because the fiber boxes draw almost no current, they can be wired directly to the main power supply in the machine via custom made cables, fabricated in the shop. The +5vdc is picked off of the backplane board P7 connector that is labeled for a hopper.

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power supplies will fluctuate if there is no load on the output. Could it be a heat issue? Some of these units were noticeably hot to the touch. We then decided to take ten of these and crack them open and drill some vent holes in the casings. We monitored these for a few days and they still misbehaved. No luck with that theory! Since the fiber boxes produce a minimal load when connected, should we go out and throw a couple of resistors across the power supply outputs to load them up and stabilize them? If we had a handful of machines to do it might be practical, but we literally have hundreds to do. This would take months to do and might not solve our issue at all.

In the fiber box, the +5vdc goes straight in to a surface mount ST232EC at location U3. It is a two driver and two receiver buffer / line driver in a TSSOP-16 case with absolutely no protection on the power input. Make sure to turn off the power supply as we have seen quite a few of these chips get the corners blown right off of them. At position J2, there is a jumper block to allow you to set the fiber box as a repeater (pins 1-2) or full duplex (pins 2-3). Ours are set as a repeater. These boxes came mounted in the bottom rear of the cabinet. After installing the player tracking systems, the fiber boxes

and power supplies got buried so we relocated them to the open area behind the LCD monitor. This is a much more convenient location to work on these.

Because the fiber boxes draw almost no current, we decided to wire them directly to the main power supply in the machine via custom made cables we fabricated in the shop (see figure 2) The +5vdc was picked off of the backplane board P7 connector that is labeled for a hopper. We are coinless so that connector is not used in any of our machines. The hopper harness is still left in the machine so it doesn't get lost. Our harnesses are made in four foot lengths so if you need to pull the fiber box out of the machine and work on it in your lap, you will not have to disconnect it.

Pin 6 +5vdc
Pin 14 GND

The cables we made to do this are parts available from Mouser Electronics 1-800-346-6873

AMP 20 pin connector housing # 571-27949540
Kobiconn 2.1mm barrel power connector #1710-2110

AMP pin for above housing
22-18 AWG wire #571-15863172

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26-22 AWG wire #571-15863151

Over the past couple of months, we have installed 100+ of these cables and have experienced absolutely NO communications loss! The only way the fiber boxes go off now is if the machine gets shut off however we simply bypass the machine with a fiber barrel connector to keep the loop lit up if it's going to be down for an extended period of time. Eliminating hundreds of these power supplies from the floor will also help reduce energy consumption (even unloaded, an operating power supply draws a small amount of "phantom" current and wastes it as heat) so we did a small part in going green too!

I hope all of you have a very happy, healthy, and prosperous new year!

- **Chuck Lentine**
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Schedule of Events

Events subject to change

Tuesday, May 4, 2010

9:00 am - 12:00pm

Power Supply Repair - Presented by Randy Fromm - Let's face it, we have a lot of power supply failures in slot machines. Some power supplies are more-or-less disposable due to their cheap replacement cost but many of the supplies we find in slot machines are custom-built units costing hundreds of dollars. For example, the ability to repair Aristocrat and IGT power supplies (actually manufactured by Setec and Win-Tact respectively) in-house will save your casino hundreds or even thousands of dollars in a year. We will cover the operation and repair of power supplies in detail during this session.

1:15pm - 3:15pm MEI - BV troubleshooting and repair - Suzo-Happ's Director of Training and Service David Oldham will discuss BV operation and service. Troubleshooting guides and handouts will be presented to help speed through troubleshooting in the shop.

3:30pm - 5:30pm FutureLogic Ticket Printers - Suzo-Happ's Director of Training and Service David Oldham will discuss FutureLogic printer operation and service.

Wednesday, May 5, 2010

9:00 am - 12:00pm CRT & LCD Monitor Repair - Presented by Randy Fromm - Video slot monitors are a lot easier to fix once you know how they work. Some understanding of electronic components will be helpful as this session will be somewhat more advanced than at previous TechFests.

1:15pm - 3:15pm 3M Touchsystems Touch Screens - Touchscreen Technology Presented by Paul Hatin and Mark Roberts - 3M Touch Systems Field Application Engineers - It is really amazing how touchscreens actually operate. During this session, touchscreen theory of operation will be presented along with diagnostic and repair techniques.

3:30pm - 5:30pm Incredible Technologies Slot Machines - Incredible Technologies has been credited by many operators as one of the most important and innovative manufacturers of video games in the world. Their "Golden Tee Golf" game revolutionized the online game tournament. Now, IT brings their team of manufacturing and design experts to the casino industry and to TechFest 20 with a close look at their IT slot machine. You will not want to miss this presentation.

Thursday, May 6, 2010

9:00 am - 12:00pm Ceronix CRT and LCD Monitor Repair - Presented by Troy Nofziger - Ceronix Armed with a general knowledge of how monitors work (and how to fix them when they don't) it's time to look at Ceronix. The Ceronix design is unique in the entire world and requires a bit of specialized knowledge in order to be successful at repair. LCD Monitor repair will also be covered. Ceronix's most experienced bench tech, Troy Nofziger will instruct.

1:15pm - 3:15pm Transact Technologies Ticket Printers - Transact Technologies' Russ Wigé presents servicing and troubleshooting Transact brand, thermal ticket printers. These units are simple to understand and troubleshoot, once you know how they're put together.

3:30pm - 5:30pm JCM Bill Validators - This is arguably the best seminar of its kind in the gaming industry so we've saved the best for last. This presentation will be given by JCM's Jack Geller. This is your chance to ask the world's #1 expert about your JCM "issues."

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IGT I-Game Reporting the JP One Behind

This sounds kind of funny that the game would not report the current jackpot that was hit but hold it until another jackpot was hit then send it. Always being one step behind, this game was placed out of service until the problem was solved. We checked the MEAL book and discovered that a couple of times, the game was documented that it was rebooting itself for no reason. We wanted to RAM clear the game to see if this solved the problem instead of changing out the CPU board. We started to compare options with the game next to it and discovered that one option in the Primary channel options was different. The Secure Handpay option was disabled thus holding the jackpot. Once we key chipped the game and enabled the option, we

Passing on Information

By Kevin Noble

lowered the Jackpot limit and tested the game. It started reporting the correct amount to The Cage. Just to verify our curiosity, we re-keyed the game again and placed the option back to its original setting and played the game until we won again. Sure enough, the game held onto the amount until a second jackpot was hit. We set the option back to the correct setting and reset the jackpot limit and we have not had a problem with this game since.

AC Coin Slingo Community Games The Red Spin Tiles Staying On

Not having an in-depth grasp of how new games work when they first arrive on the scene, this problem was actually brought to our attention by a customer. You see the red number of spin tiles on the marquee sign were always on. When someone on the blue or green game would go into the bonus round, the game should display each color's





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tiles sequence on and off until it lights up one tile displaying the number of free spins you have won, then display the winning number on the screen. Well, the red would all stay lit and then a couple of seconds later the magic number of spins won would appear on the big screen without any anticipation of what you might win. I called out AC Coin Representative Jason Drapotoy and told him about this unusual event that was taking place. He told me that it was the first time he has heard of this and asked me to try a couple of things to see if I could get it running on my end. I tried to reboot the computer that was housed in the compartment situated next to the sign. I had waited until all the customers were off the games because resetting the controller would have disabled all of their games as well. This did not work. I next tried to see if the game "RED" was configured correctly for the game, which it was. I next tried removing the RAM chip off the game board and placed it in the tray for a couple of seconds, reinserted it and cleared all the errors but that did not help either. I called Jason back and told him that I could not get it up on my end. In the end, it turned out that somehow, the link harness had come out of the game board and had been plugged into the wrong spot. He reconnected it back into the correct

position and now the red does not look out of place. Each color has a master board on the display, if one was bad you would have the same situation.

IGT S2000 Reel Lights On Constantly

One good thing about working with the OLG is that we have access to our own Slot Tech Forum. It's great to ask advice, seek solutions and post neat things that have happened to alert others about certain situations. One of our tech's, Nick Surla from Fort Erie Racetrack, was having problems with the IGT S2000 reel lights staying on constantly.

Jim Fair from Thousand Islands Charity Casino replied back with this comment. "I had a problem like this, and someone had changed all the reel lamps and had inadvertently put in the wrong bulbs, all of the reel lamps worked exactly opposite of what they were supposed to, e.g.: on when they should be off and off when they should be on. Flashed off-on when there was a win instead of on-off. The patrons didn't mind but it bugged me. It flashed the wins ok, just off and on really fast. All the lamps were taken out and replaced with 359s and presto they all went out. And went on-off instead of off-on lol. Hope this helps, it was an IGT by the way and the voltage difference

on the two lights was 1 volt."

I wanted to share Jim's finding just in case this ever happens to you also. Great work Jim, keep up the good work.

IGT S2000 G20 - UBA 24 SS Problem

Dean Garrett from Thousand Islands inquired if anyone had ever replaced the UBA 24 in the G20 games. According to Dean, he was wondering if any of us ever had to program the flash on the BV, even if there is an EEPROM installed. Having replaced the UBA three times and still won't cycle but other UBAs cycle fine in the game. This particular UBA will either



S2000

get no cycle or partial cycles with a “program changed” and/or “UBA hardware error” tilt. I advised him to check the EPROM on the UBA to see if it is a boot chip. If so, you still have to flash the correct software. If the UBA is running on UBA try moving the UBA cable to a different socket. Dean was able to get it to work with the help of JCM tech and Jules from IGT. He was not sure because the UBA he used was the first one he had tried and it did not work. Only thing he did differently this time is that he took the UBA to another emulated game, installed it there and cleared the CRC (was not required but did it anyway). He then took it back to the original problem game and everything worked.

Atronic e-motion Blowing Fuses

Dean also had a problem with an Atronic e-motion on our forum, wondering if anyone knows what the F2 6.3amp/250V fuse on an emotion filter board, runs? He was wondering what could be blowing the fuse. Steve Penwell pointed out that they had this fuse blow many times at Kawartha on one game. He was not sure what it runs but the problem was a wire getting caught in the door when it was closed. As soon as he stopped the wire from getting pinched the fuse and the game was fine. Dean later revealed the problem

started acting up again. With a little troubleshoot-ing he found that when you remove the BV and reseal, it blows the fuse. Closer inspection of the BV showed some bare and frayed wires on the harness to the bezel.

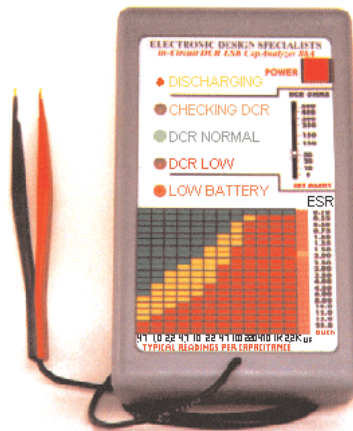
Atronic e-motion System Fault: Faulty CD ROM! Error

During a recent project that included a 25 game EPROM upgrade for Aristocrat, we scheduled an extra tech of the afternoon shift to help with covering the floor as we tried to complete this project in a timely manner. Ray Underwood agreed to come in a half day early to help and was instantly pressed into service. His first call was a “System Fault Faulty CD Rom” error that he could not clear. We notified him that the CD ROM might be bad and

needed replacing which he has never done. Gary (one of our Senior Technicians) agreed to come off the project and help Ray remove and replace the unit. The original problem was that the game kept resetting itself and when the machine was powered off, he received the black screen of death. Once the CD ROM unit was changed



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out, he noticed that both monitors were distorted and fuzzy looking. Ray did not realize there was a jumper on the back of the unit. Once set in the correct position, the pictures on both monitors were once again clear and viewable.

CVT 15 Intermittent Fiber Loop Down / Loop Up on After- noons

This was a funny problem because it would display loop down on the afternoon shift and in the mornings we would have no problems with the CVT. This was kind of odd and was hard to troubleshoot because you did not have a starting point. One morning it finally reared its ugly head and brought the entire bank down. A fiber optic loop test was being performed in the back room which it displayed tons of errors. The troubleshooting began by eliminating all the games and banks on the CVT and the errors went away. Slowly each bank was looped back into the CVT until we finally discovered the problem bank. All the fiber lines were replaced with glass. That did not help but overall it will help with the signal in the future. The next step was to plug in one game at a time until the errors came back. We started with the first game and discovered it was the problem, so we thought. We discovered the fiber board

power supply was causing the errors until we plugged in the third game and the errors reappeared. We changed out the fiber board this time for the second set of problems and it went away. Finally we had looped back the entire bank and we had no errors on the CVT. Before high fives would begin, everyone associated with the troubleshooting was a little leery. The big test was to see if this acted up anytime during the night. So far it has been about a week with no troubles to report.

Atronic e-motion Touchscreen Not Working

I talked to Jamie from Western Fair and he started to tell me about a problem he was having with a game. They just can't seem to get the touchscreen to communicate. He had replaced everything except the software. The problem was a bit unusual but the way Jamie solved the problem and relayed the information to me was unbelievable. I asked Jamie if he could provide me details about the situation and what was done to rectify the problem.

He told me it all started when a tech was doing a PM and somehow blew the power supply. Basically the slot techs tried everything. They first replaced the playfield with a known good one. Then they replaced the multimedia board. Then they tried a RAM clear and

new CPU. After that they thought they had it beat. Then the tech went to complete his PM and that's when they discovered the touchscreen wasn't working. They next tried the power distribution boards, with no success. It was Andrew (Atronic Representative in Ontario) who laughed when I called him and explained everything we tried and just said to get the oldest DVD drive we could find.

Jamie told me "You're not going to believe this but it turns out it was the DVD drive. We had replaced everything with no success. Finally we took the DVD drive from another game of the same theme and the touchscreen started to function properly."

He spoke with Andrew and he said this has been known to happen and recommended that the DVD drive have a manufacturer's date of 2003 or earlier. Go figure! I spoke to Jamie again regarding the situation he stated that they got the game back in service. He borrowed a DVD drive from a spare computer in the MIS room. It had an mfg date of 2005. Awesome work Jamie and his crew, it took a lot of teamwork from your site to solve this problem and thanks for passing on this information to us and the other technicians.

**- Kevin Noble
knoble@slot-techs.com**



More Fun With the AVP (Advanced Video Platform)

By Scott Reynolds

It occurred to me that following my last article, some of you may not be familiar with some error messages output by IGT slot machines and their meaning. In this article, I will describe some of these while providing more information on the AVP series of games. First, a couple of definitions:

Safe Storage – Equivalent to RAM, so designated by the battery located on the RAM stick. Safe Storage memory can be cleared in software by use of Ekey 4 and a diagnostic key or in a pinch, removing the battery temporarily.

Cabinet Memory – Equivalent to E2, only in extreme cases should this need to be cleared as you will lose all previously set games and options and they will need to be set up from scratch.

On games like eBay that are linked by a central server, If you have to clear safe storage and cabinet memory the position number of the game is lost, when this happens the game usually defaults to position 1 which causes a conflict on the server. You can set the correct position number by going to Theme Specific > Client Setup in options and setting the proper location number. DSA “Digitally Signed Algorithm” failure – Normally this indicates an error in a peripheral device program. If the error will clear, fine, if not replace the offending item or in the case of an AVP 2.5 or higher, you may need to replace a RAM stick.

When replacing a Bonus VFD on an AVP game such as “Top Dollar” after flashing the correct program and powering up, the VFD may come up momentarily but will then black out. All you need to do to correct this is to play a game; the display will then come back up normally.

AVP CPU Temp Out Of Range – The AVP 2.0 which includes older upright Star Wars, Wheel of Fortune,

and Brasil Slingo among others will occasionally go into this error. It is caused when the internal temperature reaches 72 degrees Celsius or higher. The most common culprit of this error is a dirty/clogged vent and fan behind the LCD monitor. Open the front door and feel underneath the bottom corners of the monitor mask for two rubber feet; push up on these and you can remove the monitor mask assembly. Pull out the LCD and look at the fan/vent in the back upper left side, chances are this is clogged. Blow out the fan/vent, reassemble everything and after closing the door, power up and watch the temperature to see if it continues to rise.

Other items to check are as follows: Other vents in cabinet, primarily the lower left side of cabinet, Brain Box, blow it out and make sure that the vents are clear on both sides. You can also make sure that the CPU fan (if there is one) is unclogged and turning freely. If it has a heat sink, blow it out. You would not believe how much dust these can hold. Check the fan to the right of the brain box. If you have a printer,

pull it out and reach your arm up behind the cash box assembly. There to the left you will find a muffin fan that blows air through the brain box vents. Turn the power on and see if this fan works. Finally, check the fuses on the left hand side of the cabinet. These will be miniature blade type fuses and can cause the CPU fan to stop turning. With these blade type fuses, a visual check will probably be sufficient but note that one time, I had one of these blow and the fuse needed to be metered to find out that it was bad. One other thing to note when removing the monitor mask assembly: If it is not realigned properly, the cherry switch behind the monitor mask will not close and you may get an "M" door open message that will not clear.

5v Out of Range – This is also primarily an AVP 2.0 error. It is corrected by replacing the main power supply on the back wall behind the hopper connector. If IGT comes out to replace this, ask the tech if you can have the old power supply. IGT does not repair these and so they might just give it to you. More likely than not, you will just need to replace some capacitors. This goes for all power supplies, not just the AVPs.

AVP 2.5 and 3.0 have two different types of software, "emulated" and "ported."

Ported software was designed to work specifically with the AVP, emulated is Game King or I-game software that has been modified to work with the AVP. There is a simple way to tell the difference. When you enter the operator or attendant menus, if the on screen buttons are red or blue and look like the buttons on an older Game King or I-game, this is an emulated game. If the on screen buttons are semi-transparent and more "modern" looking, the game is ported. You can also tell by the operating system number that is loaded in the game. Check the PSR and if the number begins with AE it is emulated, if it begins with AI it is ported. I mention all of this because entering the key chip menu on an emulated game is quite a bit different than on a standard Game King or I-game: Insert your Ekey 5 into the protected USB port on the front of the brain box (this port will be behind the locked door) and select "key chip." When told to power down, just pull the Ekey 5 out of its USB port. Essentially everything else is the same as the old style when dealing with the key chip menu on these games. When told to power down and replace the boot chip, Insert Ekey 5 and select the game program instead of "key chip" and when the Ekey 5 is removed, the machine will boot into key chip mode. You can then set games and options

normally.

On an emulated AVP, if you should get a validation fail error following a RAM clear or RAM error, insert your Ekey 5 and in the lower right hand corner of the screen, select comm. Make sure your locations comm Settings are correct.

On an AVP 2.0, the message ServerSafeStoreQueue/EventQueueFull indicates that the senet buffer is full. This can sometimes be caused by a bad fuse but more likely you will just need to clear the error and replace the cabinet I/O board (short connector). I have seen this error on AVP 2.5 and 3.0 but there was no fix for it at the time other than just clearing the error when it popped up. On eBay games, cash outs are not permitted while there is time left on the Bonus Eligibility Meter in the upper right hand corner of the screen. eBay has a "Community bonus" meaning that when one person hits it, everyone who is playing or has time on their Bonus Eligibility Meter is also included in the bonus round.

There are certain emulated poker games which will cause a "Progressive Link Down" soft tilt on games with no progressive or IPC (IGT Progressive Controller). If this happens, insert Ekey 5 and in the lower right hand corner of the screen, select comm. Make sure

that IPC and comm Channel 8 are both disabled. You will need to do a RAM clear to get rid of the soft tilt. If this happens, be sure to note the game and check all other games like this on the floor and correct the issue. I was at a location once before we knew what caused the error and spent several hours correcting the issue on about 25 games. It was strange because on a bank of say 12 of the same game, only a couple of the machines would error. We got all of the errors taken care of and on my way back to the shop, I got a call that other games on the bank that had not been previously affected were now going into the same error. We wound up sending out someone from another shift to correct the issue in all the other identified games whether they were in error

or not. On S-AVP machines, if you have a multi-denom game and for some reason the guest stops playing for around 30 seconds (say they are talking to someone), they will invariably not be able to return to play; credits are still available, but they cannot play or cash out because none of the buttons will work. The game for some reason, even with credits on the machine, defaults back to needing a denom selected. Once you select a denom, the game functions normally.

That's about it for this time. As always, if you have any questions, don't hesitate to write.

- **Scott Reynolds**
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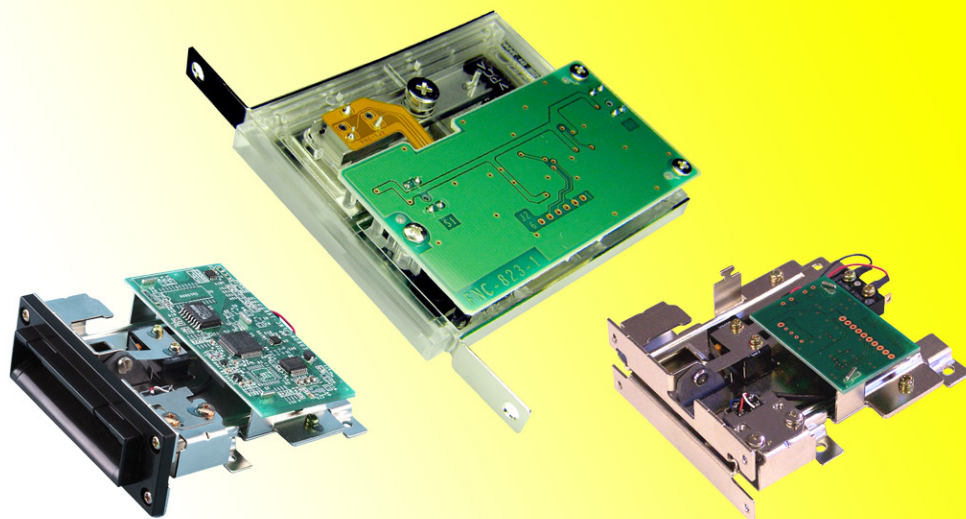
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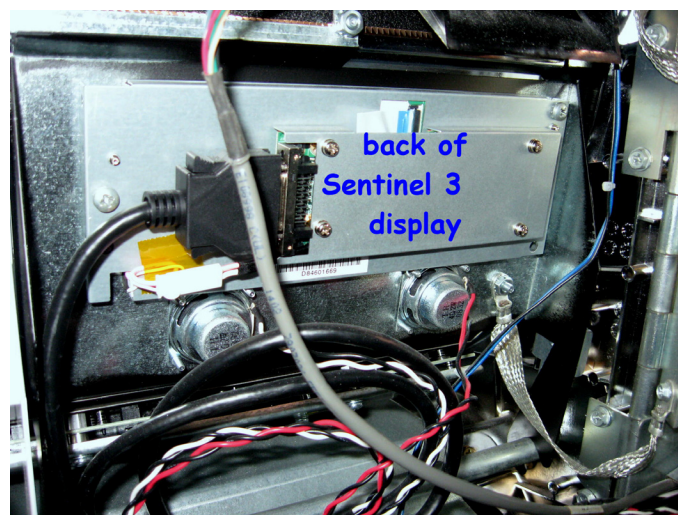
Quick and Simple Repairs #58

By Pat Porath

all the way into the connector. A small flat tip screwdriver was used to push the wire into place. Power was restored to both Sentinels and it was time for the test. My card was inserted and the keypad worked perfectly. All of the numbers worked great. Later on in the day I looked at an Oasis Sentinel 3 display that was black. Both Sentinels were rebooted and it came back up. I'll have to keep an eye on it to see how long it lasts though. I wouldn't say that it is a common problem but in the past we have found loose wires in Oasis connectors before.

Oasis Sentinel 3 Keypad Problem

This could be either a keypad problem or maybe a touch screen problem. Whatever the case may be, some of the numbers weren't responding when touched. This is on the Oasis Sentinel 3 in which the display and keypad are one unit and numbers such as failure codes are entered by pressing the touch screen on the display. In this specific failure, the numbers that were in the center row 2, 5, 8, weren't responding. It was weird. Even though the numbers responded when they were touched (when a number was touched, it would flash for a second), they didn't show up on the display. These Sentinel 3s were recently removed from games that were taken off of the floor and they ALL were working, so why in the world doesn't it work now? I started off by rebooting the Sentinel 2, then the Sentinel 3 (both are in the game). Next, I started checking for loose connections and looked to see if any pins were bent. All of the connections appeared to be snug on both Sentinels. Since it was a keypad problem on the Oasis Sentinel 3 display, why not take a closer look at the keypad connector on the Sentinel 2? As I understand it, the information comes from the Sentinel 2 to the Sentinel 3 then the to the display and back again. Anyway, I removed the keypad connector from the Sentinel 2 socket to check the wires out to see if any were loose. Sure enough, a red wire located near the center wasn't seated



Atronic e-motion Video Problem

I received a call to an Atronic e-motion game and when I arrived, I thought the worst. The top LCD was totally black and the bottom one was scrambled. My first thought was that the video card was fried. It's not hard to replace, only a few connectors, one small screw and it comes right out. Originally, the slot attendant stated that none of the player buttons would work. The game was rebooted and then came up with video problems.

Instead of changing out the video card right away, why not take a quick look at the connections on the video card itself? On an Atronic e-motion, the video card is the "board" that both the upper and lower LCDs plug into. When I checked both of the video cables, they were a bit loose. Once they were nice and snug, the graphics looked great on BOTH the upper and lower displays. It was simply loose connections. As for the complaint about the player buttons not working, a customer inserted a bill and played the game right after I closed the door. So another game back online, simply a reboot and loose connections at the video card.

Upright Konami With a Memory Error

This particular upright Konami game "froze" during game play and the slot attendant attempted a

January 2010

reboot without success. When I arrived, I noticed that during boot up there was a memory error. I tried another boot up and the same thing happened. Why was this game doing this? Could the battery for game memory be low? I opened up the "top box" area of the game to reveal the processor and other boards to find out that it was extremely warm. Quite a bit warmer than it should be. Then I noticed the speed of the cooling fan, which is located to the left side. It was spinning slowly. What's one of the things that takes down a slot machine? You guessed it, heat. The fan was replaced and the game is running fine now.

WBA-No Power in Game

I received a call that a WBA bill acceptor wouldn't cycle at all in an older WMS game. When I removed the unit from the game, it didn't feel right. It seemed like it wasn't seated all the way like it is supposed to be. The bill acceptor was inspected and put back into the bill acceptor housing. It still didn't feel like it seated correctly. Something was wrong and it appeared that the unit didn't have any power. I took the bill acceptor back out of the game and looked for any obstructions in the housing. Ah! There is the problem. A small washer from a door lock was in the way and not letting the bill acceptor seat all the way to the connec-



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tor. Once the washer was removed from the bill acceptor area, it seated properly and worked fine.

As I was told some years back, you shouldn't have to force anything with slots (basically speaking). If a main slot door on a game doesn't want to lock properly and it APPEARS that it needs to be slammed, sometimes there is a perfectly logical reason why it won't work like it should. In this specific case, a small washer was obstructing the bill acceptor so it wouldn't seat properly. On an upright IGT S2000 in which the main door won't lock easily, I've seen a small bolt or nut that was located under the coin tray. When there is a foreign object under the tray, it will sit at a slight angle causing the door to close at a slight angle, therefore making it hard to lock. Once the object is removed, the door will close very easily. I have also seen where the Oasis face plate was obstructing the main door, preventing it from closing correctly. Not only on IGT upright games, but on others too. When the face plate is snapped on properly and not obstructing the door, it will lock easily.

Bally EVO That Wouldn't Boot Up All The Way

We had a Bally EVO that wouldn't boot up all the way. I was told that the CD drive had been replaced but it didn't help the problem. The drive that was installed

didn't have a light on it so you couldn't tell if it had power or not. I installed another one that did have a light on it and it didn't light up at all as if the drive didn't have any power. Using good old swaptronics, I used the CD drive from the game next-door that I knew was a known good one. When it was put into the problem game it didn't light up either. Now what kind of problem is it? Why not swap the whole "suitcase" over from the working game to the problem game? So it was swapped and after a few seconds from turning the main power ON, the CD drive lit up almost right away (Very interesting indeed). This indicated that there was a problem somewhere in the original "suitcase board" area. I found a replacement in the shop, installed it in the game and it worked great. The game next door had been put back together and power turned back on. Now this game didn't want to boot up. It had its original "suitcase board" back in it, so what was different? I had to

think for a few minutes. What was changed? The CD drive wasn't original, that's what it was! Even though it had a new DVD drive, the game didn't like it. I found an older one, installed it and finally both games were back online. Something to consider, if a CD drive doesn't work with the newer DVD type, try an older model one that is only a CD, not DVD (Bally EVO games). It worked in this case. I almost thought that I would have to bring an older CD drive from home that could be taken out of an older computer tower that is laying around. But a couple of the older ones were found by our IT Department.

Aristocrat "Jaws" Progressive Error

I had heard on our dispatch computer that there were a lot of progressive errors in the location of our bank of "Jaws" games. It had been quite a while since the last error occurred so I needed to try to remember what was done to get the bank of



games up and running again. I was working a graveyard shift and it was 1:30am on a Friday night, so if I had major problems there wasn't really anyone I could call, not at that time. After a bit it came to me. If I recall correctly, the "controller" needed to be rebooted and the error should clear. Now the next question, where was it located? It was found and the power was cycled. Luckily after a few minutes the progressive error on the games disappeared and the games were up and running again.

Animation Tilt on a WMS Bluebird

A call was received that a Bluebird had a "animation timeout tilt" and wouldn't reset. The game was rebooted and the error cleared for a little while but then it returned. A phone call was made to find out what exactly an "animation timeout" tilt was. The service representative stated that the problem has to do with the "bonus button." On certain Bluebirds there is an additional (14th) button (A standard Bluebird has 13 player buttons). This button is the one that lights up pretty, not to be confused the "Bluebird 2" buttons. The BB2 buttons are a lot more technical and have animated graphics on them. I was told to reseal the CAT5 connection on the backplane board to clear the error, this time though, it didn't

work. Since CAT5 cables are used with the button, I replaced two of the cables in the game, still no go. After that I tried a two RAM clears, that didn't do the trick either. Next I swapped the OS card and the game cards separately but no go once again.

Now I had an "assert fail" error. On the game LCD it showed to "press diagnostic button" and "key to restart game." I did that three times without any success. Another phone call was made to get some kind of direction where to go and now I was told that the CPU board or backplane board could be faulty. Well, off to the shop for a replacement CPU. When changing a CPU on a Bluebird, remember to check the version of the BIOS chip and the jurisdiction chip that is on the board. Without the correct one, I doubt if the game

would run properly. The two chips were different so I swapped them and proceeded to install the board. After it was put in, along with the RAM clear card, the boot up process was started. Yet AGAIN the "assert fail" appeared. Great. Just great. Now it looks like the backplane needs to be replaced. HOPEFULLY after a backplane board is installed, the game will be back online. A new backplane board didn't fix it either. The board located near the "bonus button" was swapped, along with the board located to the left of the reels. STILL the "assert fail" would not clear.

Further visual inspection revealed that the reel controller board had a burned component on it. With a replacement, the game was back online.

- Pat Porath
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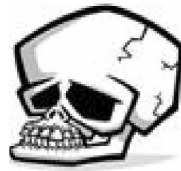
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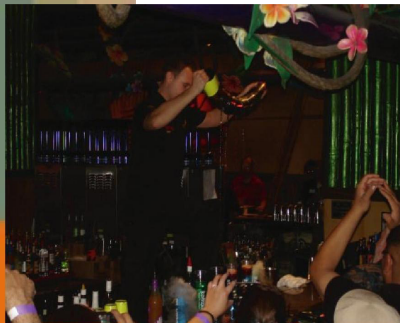


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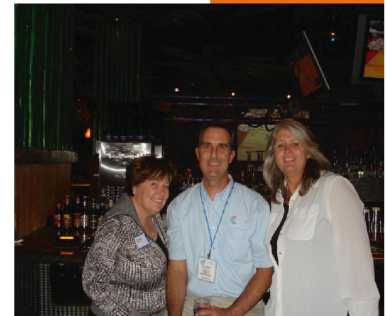
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About Randy Fromm: I am the publisher of Slot Tech Magazine. First published in 2001, Slot Tech Magazine is a monthly trade journal focusing on casino slot machine repair. I have been repairing electronics for the gaming industry since 1972. I really enjoy what I do and I love showing others how easy it can be. ***No previous knowledge of electronics is required.***

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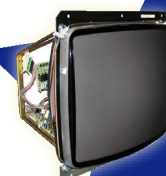
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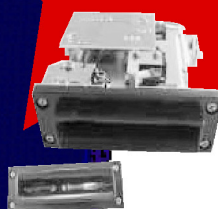
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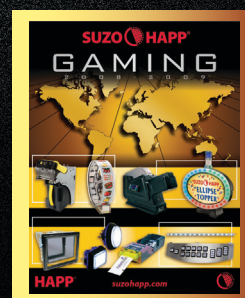


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