

THE FUTURE OF MARKING CARDS ON CASINO GAMES: PART 1

By Bill Zender

I attended the World Game Protection Conference 10 in February at the M Resort in Las Vegas, and I can say without a doubt that it was as spectacular as the previous conferences, if not more so. There were a number of great keynote speakers, terrific information passed along to the attendees through a number of interesting "Learning Labs," and a host of exhibitors from all over the world, displaying the latest surveillance equipment, systems and support products. As always Willy and Jo Allison did a wonderful job attracting the best of the best in the world of surveillance, game protection and asset protection technology.

While there were many interesting areas to see and learn from, my most important takeaway came in the field of marked cards and chemical-based optics. The information passed on by speakers such as Terry Roses, a leading researcher on the subject of crooked gambling devices, and Mladen Blazevic, a marked card expert and inventor, really stunned me. Granted, I have worked with Blazevic on his and Galaxy Gaming's Spectrum Vision SV-1 marked card reading device, but I hadn't grasped the scope and research that goes into determining the type of daubs and paints used by the latest breed of casino card markers.

For instance, Roses pointed out that advancements in card marking chemicals have improved by leaps and bounds over the past decade. Today, scientists are producing chemicals that will react only to a specific, narrow light wavelength. Once the daub or paint is placed on a playing card, the cheater can bounce an invisible light source of the back or side of the playing card and clearly see it with the use of contact lenses or slightly tinted glasses. Roses showed me one substance that could be read through a pair of glasses containing a special light filter; the clear lenses appear the same as normal reading glasses.

He also suggested that the professional card marker doesn't have to get so sophisticated. A light reflective chemical daub is placed on the back of a playing card while the cheaters are playing at the table game. Once the substance is applied, the cheater uses contact lenses to view the markings. In the past, persons using contact lenses in this fashion could be spotted by the darker, almost blacked-out appearance of the eyes. This effect was characterized as having

"Orphan Annie" eyes. Today the contact lenses appear clear and are virtually undetectable.

In Blazevic's breakout session of the WGPC Learning Labs, he stressed the importance of taking this new card marking threat seriously.

Blazevic pointed out that marking cards used to be considered an "art" by cheaters. In order to play somewhat undetected in a casino, someone would have to first be lucky enough to have the art passed down from a specialist in marking cards, and then spend hundreds of hours practicing the technique. Today, however, anyone can go on the Internet and find hundreds of websites selling different daubs and reading lenses and providing instruction on how to mark cards. In a short period, anyone can propel himself or herself to the level of card marker that in the past could only be attained through the right connections, and hours upon hours of practice. In the last year, he noted, several cheaters have been spotted using sophisticated daubs and lenses to attack casino games. He wondered how many more nefarious people are in casinos throughout the world going undetected while playing with advanced daubing techniques.

Galaxy Gaming's Spectrum Vision Marked Card Reader

One of Blazevic's projects over the last several years is a marked card detection device called the Spectrum Vision SV-1. This device is being manufactured and distributed by Galaxy Gaming Inc., a gaming company known for its blackjack side bets and new table games. Galaxy Gaming is very positive about the device and has shown it at the Global Gaming Expo in Las Vegas, ICE Totally Gaming in London and the World Game Protection Conference. The Spectrum Vision received quite a bit of attention at the WGPC with several major gaming companies indicating interest in leasing several devices once the Spectrum Vision goes into production.

Blazevic explained that the SV-1 views cards with different light frequencies; the low nanometer range of ultra violet, the different light waves from which reflections can be seen by the human eye, and into both the lower and upper ranges of Infrared light waves.

GAMING OPERATIONS ■ marked cards

He also demonstrated this range by using three playing cards that had been painted or daubed with a different chemical.

Blazevic inserted the marked playing cards into a bread box size chamber, and cycled through the different light wave sources until he found a wavelength that visibly reflected the paint or daub that appeared on the video monitor incorporated into the SV-1. After cycling through the different light wave frequencies, he pointed out how the differently marked cards reflected the difference daub or paint under the four optical lighting conditions. For example, one of the sample cards was marked at opposite corners using daub. Under normal incandescent lighting and UV (black light), the markings can't be seen; however when the SV-1 is cycled to the Infrared frequencies, the daub appears on the video monitor as dark marks or smudges.

He stated that the SV-1 can pick up almost every substance that is known to be used to mark cards. He is confident that the Spectrum Vision will confirm the presence of any paint or daub placed on the casino playing cards. Blazevic is happy with the SV-1, but he is also looking into incorporating different colored lenses into the next generation of reader.

How to Detect the Use of Daubed Cards

One thing Blazevic adamantly stated is that the Spectrum Vision SV-1 is used to confirm the presence of paints or daubs. It also can be used as a device to rule out that cards have been marked with paints or daubs. The Spectrum Vision does not detect marked cards while the cards are in play. This process is left up to the game protection personnel. To detect marked cards, table games and surveillance personnel need to know which games are most subject to marked card attacks and what indicators or "tells" they must watch for to determine whether to remove cards from the game for possible confirmation (or rejection) by the SV-1.

There are two distinct methods that knowledgeable game protection personnel can rely on to detect the possibility of marked cards. One method is to identify the application process while the cheater is handling the playing cards on the table. After reviewing a number of marked card scams in which a chemical marking substance such as daub is placed on the back of playing cards, I found a consistent use of several hand technique movements.

- The player will always look at his cards to determine which card backs he wishes to mark. Depending on the game type, the cheater daubing the cards could mark different ranks of cards, different suits of cards or both ranks and suits at the same time. Usually, games that are attacked using daub do not require that the entire deck be marked. For instance, the game of Three Card Poker can be advantageously attacked by marking the queens through aces, and

by applying only one type of mark for all three ranks of cards. The cheaters only need to determine if the dealer has a qualifying hand containing a queen, king or ace. Any additional information would not be of that much importance, and the risk involved, as well as the possibility that too many daub markings on the card back could be misread, is not worth the extra effort.

- Before the cheater can mark a card, the back of the card has to be accessible. To get the target card into position in his hand, the cheater may need to slide or shuffle the card to the top of the group of cards in his hand. Even in a game where the players pick up only two cards, the cheater may shuffle the bottom card to the top card position so he can mark the target card's back. This move is used in almost all marking situations; however, not all players who shuffle cards in their hand are card markers. Use this characteristic as a possible indicator, not as confirmation.

- The third indicator is the actual daubing move used to mark the back of the target card. In most instances, the cheater daubing the card will drag his index finger over the back area of the card where he intends to place the daub. The fingertip movement could be anything from a slight wiggle of the index fingertip to a lengthy swipe across the back of the card. In some situations, the cheater may also be seen trying to remove a portion of the daub. Sometimes the cheater will place too much daub product onto the back of the card and will then remove some of the product with the middle finger, thumb or the index finger on his opposite hand.

- Another characteristic of a daub attack is that the individual applying the daub is usually the only person at the table marking cards. In addition, the same individual is on the table to read the daub markings and possibly signal the information to other cheaters at the table once the game is being attacked. Other individuals may be on the game in conjunction with the cheater who marked the deck but usually only in a wagering capacity.

- An additional characteristic of the play is for the cheater daubing the cards to get rid of any daub container before the betting of large wagers begins. Look for the suspected player to leave the table and go out to a car in the parking lot or to the men's restroom. If the cheater heads for the restroom, it might be wise for casino management to seize all the trash from the restroom and any other trash containers the individual passes when he leaves the table. Of course, the cheater could flush the evidence down a toilet. The daub container is considered physical evidence and will help substantiate any criminal prosecution.

The next area for the game protection personnel to focus on is how the suspected cheaters play the game and vary from what is generally considered common play. This aspect will be covered in Part 2 of this series on Marking Cards on Casino Games.



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How Many Rounds of Play Does it Take to Mark the Necessary Cards?

As unusual as it may sound, the number of rounds required to mark a specific number of key cards at the table does not depend on the number of cards that need to be marked, but instead on the number of cards the cheater applying the daub touches on each round. Recently, I was working on a marked card case that occurred in the poker game of Razz. Razz is the seven-card stud version of Lo-Ball poker. The object is to make the lowest five-card hand out of seven possible cards, with four cards dealt face up, and three dealt face down. The target of the card marker on a Razz or Lo-Ball poker game is the higher value ranks of cards.

The question was how long would it take for the cheater daubing the cards to mark enough cards so the cheater could identify the 9s through kings. Obviously, the cheater intends to mark five ranks of cards, or 20 cards of a 52-card deck. However, the real question is, "how many cards will he be allowed to touch and possibly mark on each hand?" From observation of the videotape, the cheater had immediate access to two cards—his pocket cards. He also had access to his seventh card, although the cheater rarely had a chance to stay in the pot long enough to be dealt the face-down river card. It was noted that the cheater had an opportunity to mark one of the cards dealt face up if he folded his hand. On the average, the cheater had access to daub three playing cards per round.

By resorting to basic mathematics, it was determined that a card marker with the ability to touch three cards per hand would be able to mark 90 percent of the cards after playing 38 rounds. In the above-mentioned example, the cheater needed to mark 20 of the 52 cards, and

he would accomplish this mission after 38 rounds by having approximately 18 of 20 target cards marked, definitely enough to give him a strong advantage. What if he wanted to mark all ranks of the 52 cards? This would be difficult to accomplish accurately by using daub, but only because the different markings on the backs would be very busy and possibly difficult to read accurately. Using the same mathematic principles as before, it would also take about 38 rounds to mark 90 percent of the cards, or approximately 47 cards. Table 1 illustrates how long it would take to mark 90 percent of the cards on a single deck of cards depending on the number of cards the cheater had access to for the purpose of applying daub.

Table 1 – Number of Rounds Required to Mark a Deck of Cards

Cards Touched by the Dauber	Rounds needed to mark 90%
2	58
3	38
4	29
5	23
7	16

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