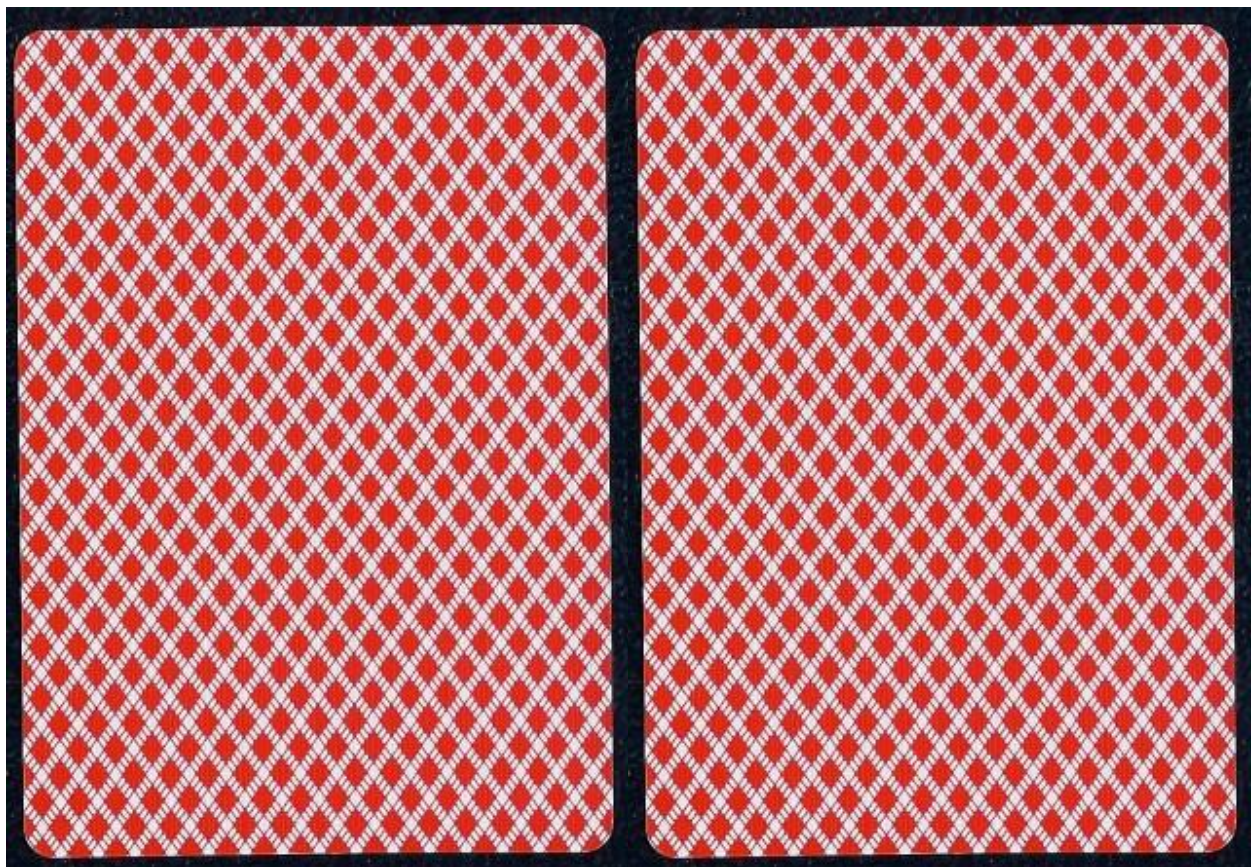




November 30, 2012

Just a quick update concerning a current industry scheme. Members of an Asian Baccarat team were able to identify a factory defect in playing cards known as Side or Edge Sorts. Notice the photos below illustrating perfectly cut diamonds (same size) on both the right and left long edges.

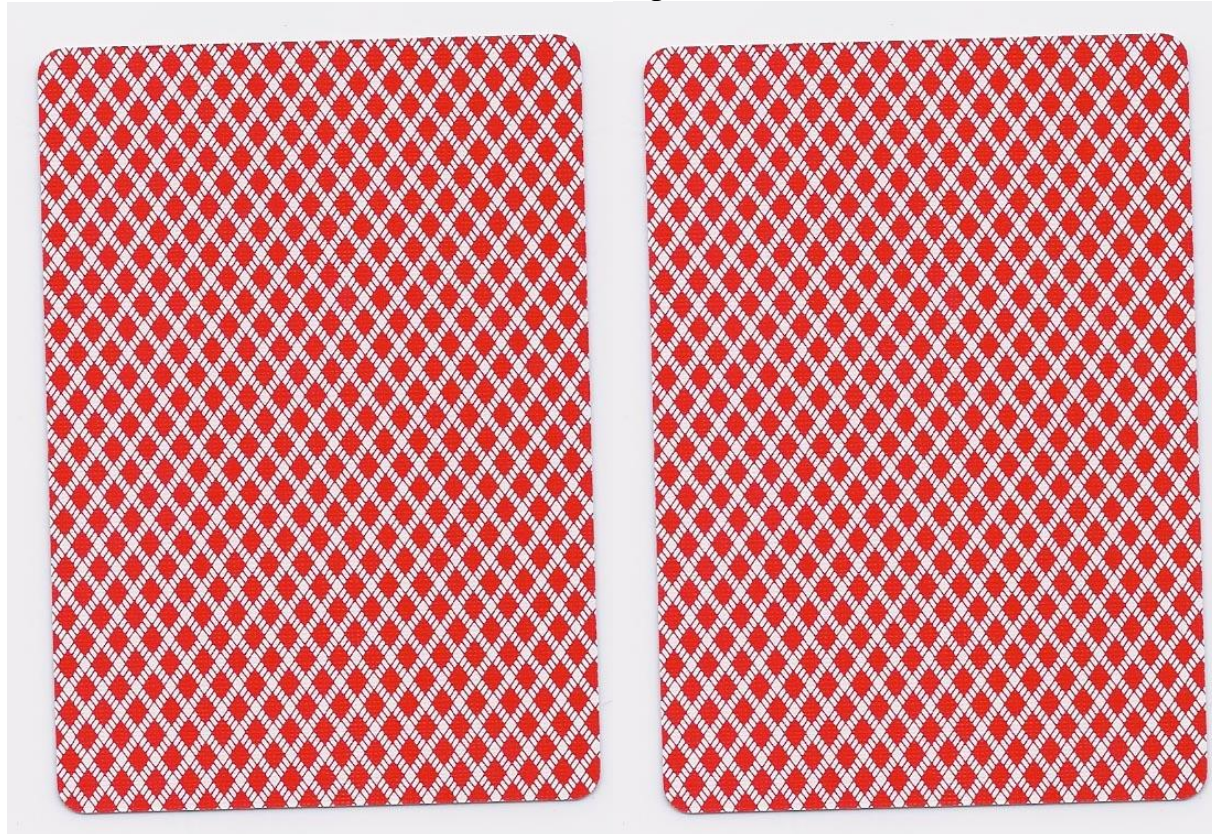


Because playing cards are cut at such high speeds, they cannot always be cut perfectly...(Notice the top & bottom sort edges are not the same.) Keep in mind, that if playing cards are miss-cut from the factory then typically the entire deck is miss-cut in the same fashion on the same sides.

Notice an example of miss-cut cards on the long edges;

-2- Diamond Sort Scam

All of the cards in a miss-cut deck coming out of the box would be oriented



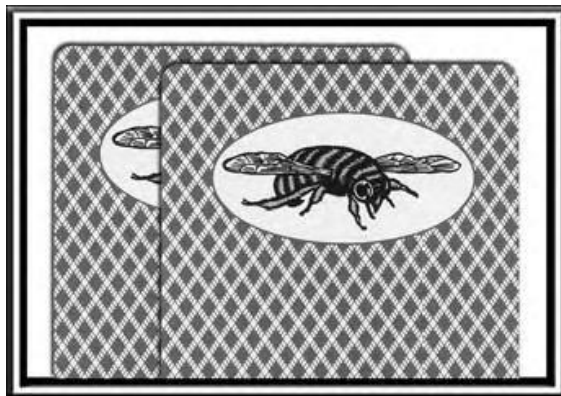
in the same miss-cut fashion. Notice the Small Diamonds on the long left side edges and the Large Diamonds on the long right side edges. Keep in mind that all things being equal, new playing cards coming from the box as illustrated above pose no threat to game integrity. Once the cards are shuffled and played (and spun around during play), the new deck orientation will be destroyed.

In a private game situation there is a great deal of preparation necessary. Card sharks would buy several dozen decks of playing cards and begin sorting through. They would cull out any card with perfectly cut edges and put them in one pile. Any playing card with an irregular edge would be placed into a second pile. Cards not easily read would be ignored and discarded. Next they would extract high cards with perfectly cut diamonds and mix them with low card values

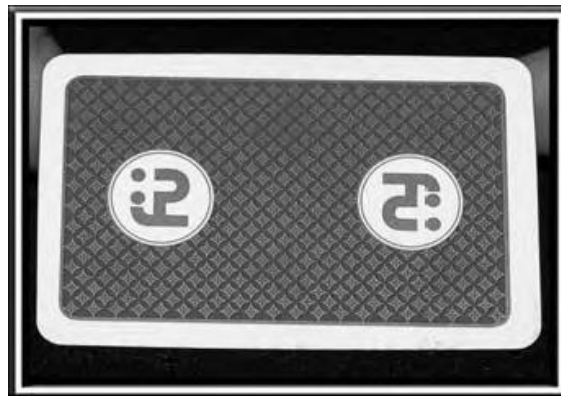
-3- Diamond Sort Scam

from the irregular diamond pile and cull them into one deck. Now, regardless of shuffling, pitching or spinning it would be easy to recognize high value cards from low value cards. (A typical “High/Low” sort for Gin might be...High Cards 8,9,10,J,Q,K and Low Cards A,2,3,4,5,6,7). The card cheat would know if his opponent was holding more High cards than Low and would know in advance if the draw card was high or low. The sorted cards do no guarantee a win, but do offer a substantial advantage.

The Sort Scam can target patterns on the long or short edge or playing cards with irregular white borders as well as Repeating Patterns.



Diamond Edge Sorts for Private or Carnival Games



Irregular Border Sorts can also be used

You can see how easy it would be to identify High Value from Low Value cards in this private game scenario

Suppose the same High/Low sort extraction was used for a casino game such as Baccarat. Typically the above described Sort Scam (Culling cards from several different decks) wastes too many cards to be practical for casino play. However to prove the point, what if irregular diamonds represented Low Value Baccarat cards...10,A,2,3,4,5 and perfect diamonds represented High Value cards 6,7,8,9.

Study the following photo examples;

-4- Diamond Sort Scam

You can easily distinguish Low Cards from High Cards



Diamond Sorts - Irregular Diamonds



Diamond Sorts - Perfect Diamonds

Notice another example of Edge Sorts from a different playing card company. In this case, the playing cards are printed with a Circle repeating pattern...

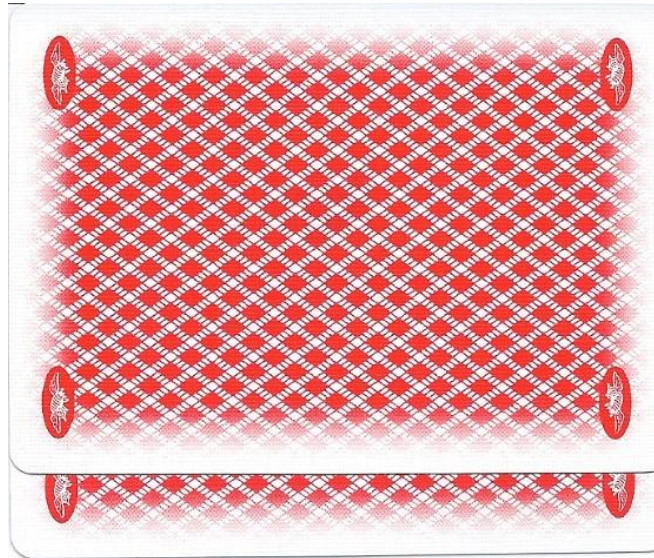


Circle Pattern Sorts - Half Circle Edges



Circle Pattern Sorts - Quarter Circle Edges

-5- Diamond Sort Scam



Notice that even Shaded Boarded cards can also have irregular patterns or cuts...Sometimes the easiest of all to read.



Notice the irregular White borders on these cards taken from a Squeeze Baccarat Game  
(Customers handle the cards and bend them or peel into view while facing)

-6- Diamond Sort Scam

The easiest way to understand this concept is to look back in history. Irregular cards known in my day as, "Factory Sorts" have been known to the gambling and magic world for hundreds of years. (Magicians call the cards a "One Way Deck".) This is an extreme example of a "One Way Deck", An UNO Deck (A Mattel Company Home Card Game)



Notice the asymmetry...The card is noticeably different when spun around 180 degrees. (So are any irregularly cut playing cards, just not as easy to see.) With a One Way Deck, a magician would have you "Pick a Card". As you looked at your selection, the magician casually turns the deck 180 degrees. You replace your card in the deck. It is now the only card reversed in the deck. Even after shuffling, the odd card can easily be discovered.

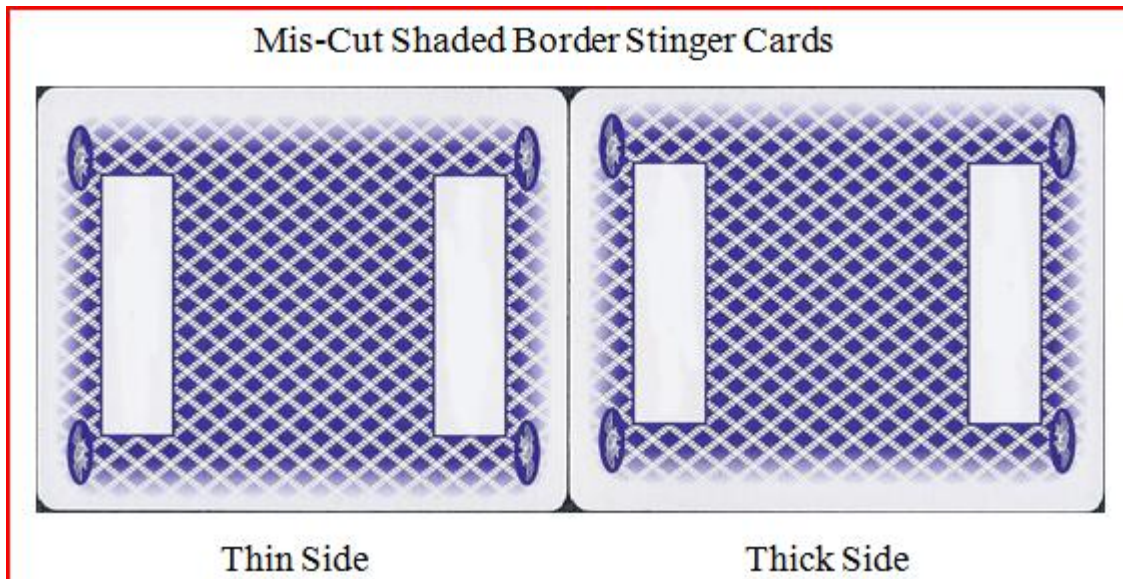


As long as a portion of the cards weren't spun around during the shuffle...The Magician can easily find the selected card

-7- Diamond Sort Scam

In the gaming world, the Irregular Edge and One Way Deck issues were addressed very early on. Casino operators quickly eliminated the obvious One Way Back designs and White Bordered edges which could very easily be read.

Notice the cards below, which came from an actual casino game.  
(I've "Blocked Out" the Casino Logo for this report)



Irregular solid bordered cards or shaded bordered cards actually make the "Mis-Cut" playing cards much easier to read than mis-cut diamonds or circles.

In order to address the very subtle irregular miss-cut edges, casino operators mandated "Washing" or "Scrambling" the playing cards as part of the initial game opening. The Wash was also included as a standard element of Baccarat Shuffle-Ups when playing cards were used from one shoe to the next. Breaking the deck (or decks) in half and Turning one half of the cards 180 degrees was also standard and mandated. Unfortunately in recent years, many of the old game protection techniques have been disregarded.

-8- Diamond Sort Scam

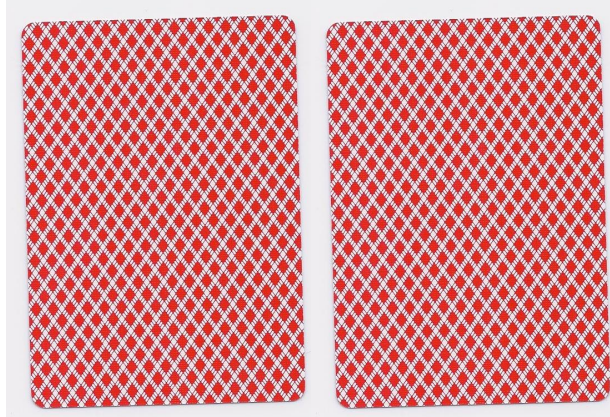
## The Baccarat Side Sort Scam

There is information from several Las Vegas strip casinos and from Atlantic City Casinos that a hybrid sort technique is being used in casino play. As in old factory sorts for private games, there is a great deal of preparation necessary for casino sorts as well.

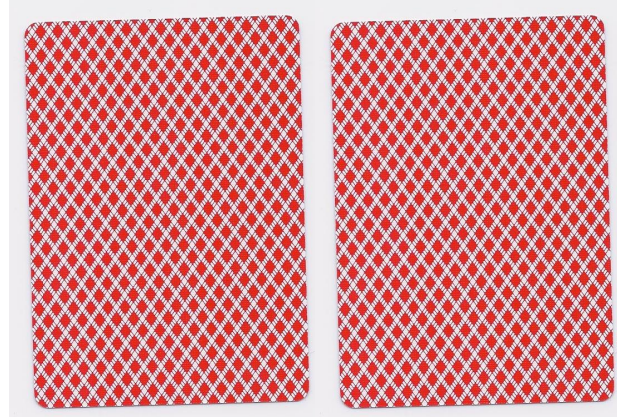
A group of “Whales” approached a casino and deposited a large sum of money in the casino cage. The group claimed to be superstitious and reportedly asked that the new playing cards not be “Washed”...”Bad Luck”...just shuffle or put them in a shuffle machine. (Sounds reasonable for a shot at big money)

Now came the advanced preparation I alluded to. During the first shoe of play the customers asked for the playing cards to be dealt face down, but not turned over by the dealer in a normal fashion.

Banker Cards



Player Cards

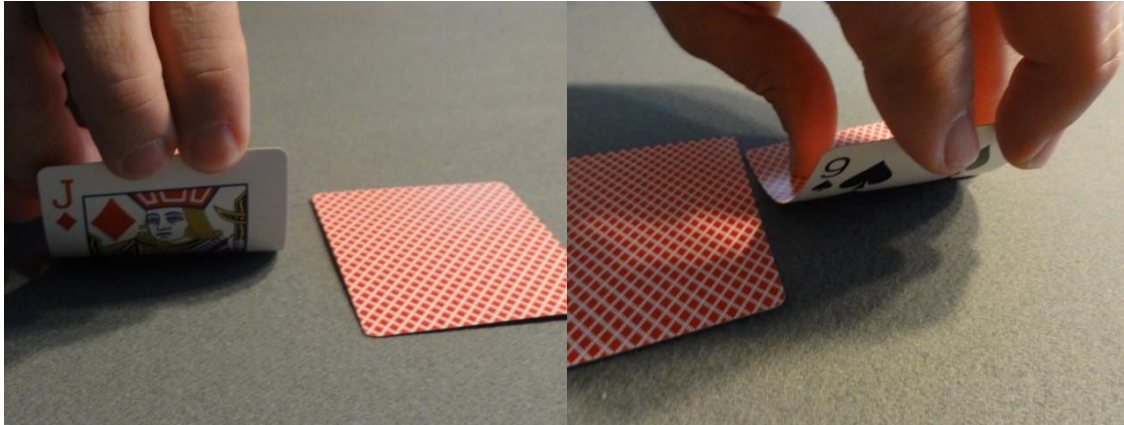


HINT: Notice all of the long edges. You can see Large Diamonds on the long right edge and Small Diamonds on the long left side.

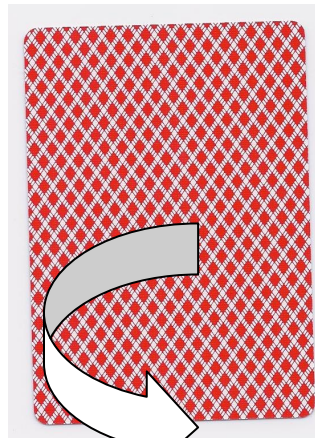
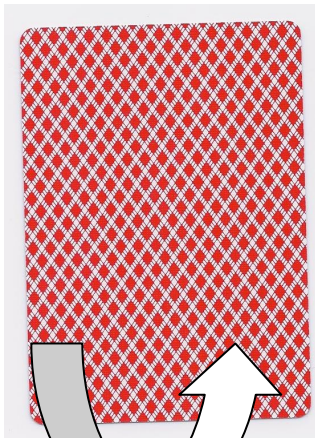
The players asked to see the face down cards ...Meaning they wanted the dealer to simply pick up the cards one at a time and show them and replace the card face down. Here’s where it got bad...(When I first heard the account, I was lead to believe that the playing cards were being marked by the dealer..Not So.)



-9- Diamond Sort Scam



If the card was a Strong Baccarat card; 9, 8, 7 or (6), players asked for the card to be turned over long wise. Players asked dealers to turn over Weak cards sideways...10, Ace, 2, 3,4 or 5.

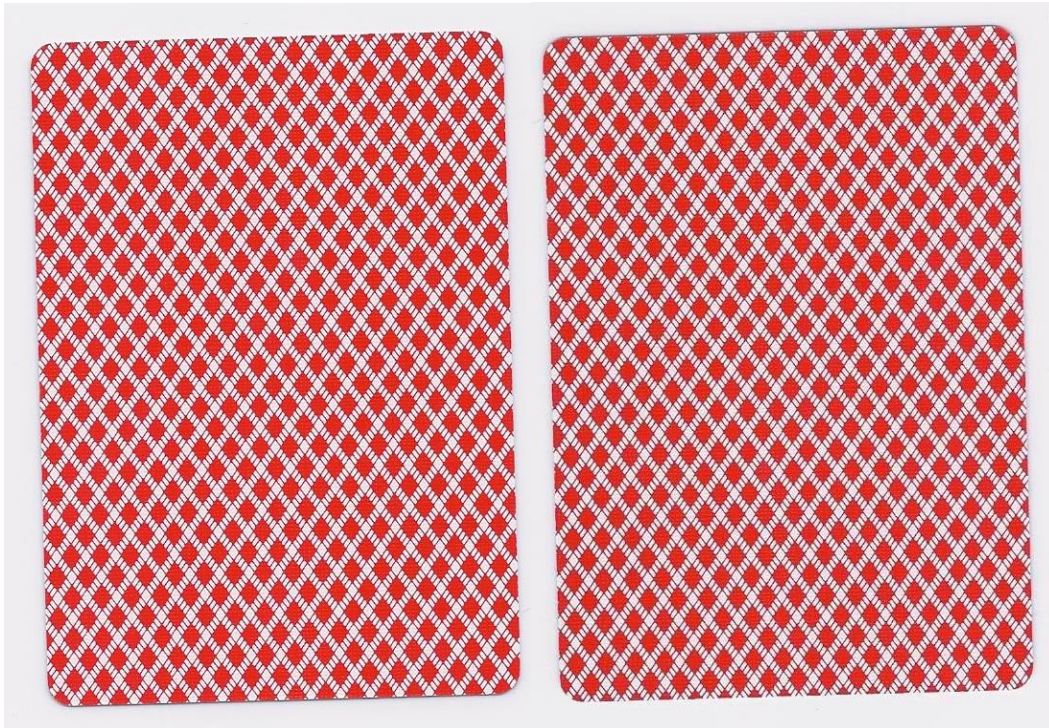


End for End long wise turn for Strong Cards      Sideways Turn for Weak Cards or at times Vice Versa due to initial formation.

(The “Turn” direction may have to change during play due to the initial formation of the new decks. If the decks weren’t all stacked the same at first & placed in the shoe with all edges similar then Strong & Weak Cards might be Turned differently throughout the shoe, which would be confusing to surveillance and floor personnel.) Suffice to say, during the first shoe Strong and Weak cards were lined up according to Big & Little Miss-Cut Edges.

This activity occurred during the entire “Set Up” shoe with relatively small wagers. The net result was that Strong or Weak Baccarat cards were now faced in a fashion which could be recognized in the opening of the shoe, during the next shoe...“Target” shoe, even if a shuffle machine is utilized. (Machines don’t rotate playing cards, so the edges come out the same.)

-10- Diamond Sort Scam



Notice now the Large & Small Diamonds are no longer on the same edges.

The obvious break in procedures was allowing customers to instruct dealers as to how playing cards should be Faced and turned and dictating shuffle procedures and wagering procedures and management giving the “Okay”. In effect, the players took control of the game.

Several mitigating issues need to be noted:

- A machine shuffle will not upset this Side Sort scam. Playing cards are shuffled not rotated.

You can easily distinguish Low Value Cards from High Value Cards and can therefore wager with first card knowledge the next time those cards are put back into play.

-11- Diamond Sort Scam



Diamond Sorts – Irregular Diamonds

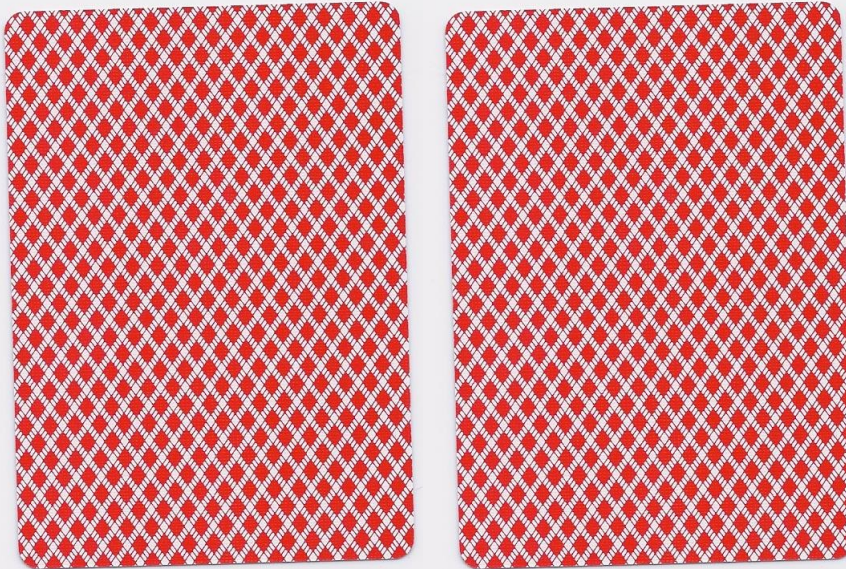


Diamond Sorts – Perfect Diamonds

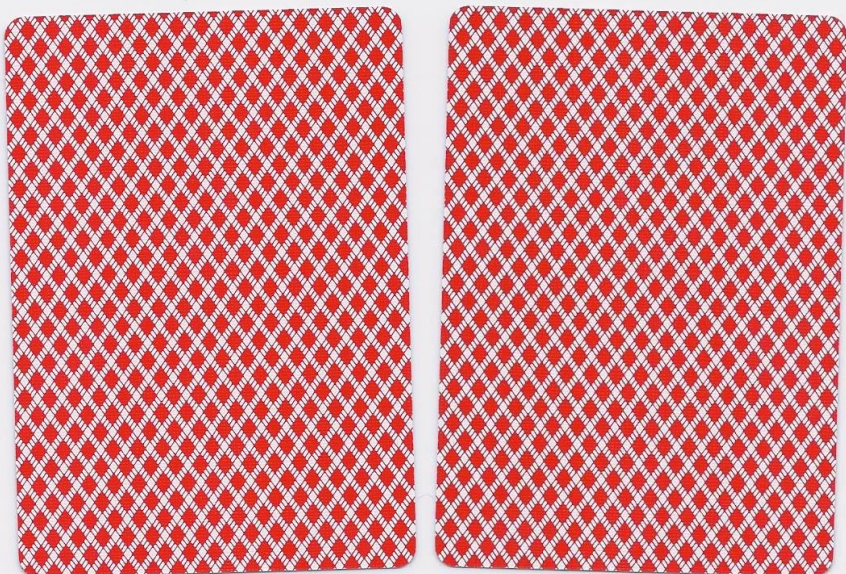
- Here's where it got even worse at some casinos. In the next shoe (“Target Shoe”) the customers took further control of the game...They asked that all cards were dealt Face Down **“Before”** they made a wager. They studied the backs of the face down playing cards and then bet. (“In what gaming universe has this ever been allowed in Baccarat?”)
- **NOTE:** Sorting cards in this fashion is not 100% accurate...So sometimes losses will occur even with knowledge of a Strong or Weak first card or a Pair of Strong or Weak Cards...or a Strong/Weak combination or Weak/Weak combination on the board. Remember, the knowledge is imperfect and does not indicate the actual value of any playing card...just a gross indicator of High or Low value.
- **NOTE:** All of the impressive percentages of advantage you will hear from the “Math Guys” would be negated if casino management had not allowed the breaks in simple game protection...Read On!

-12- Diamond Sort Scam

Notice the Long Edge Right Side...Big Diamonds on Both



**Example of a Strong / Strong Pair Combination**

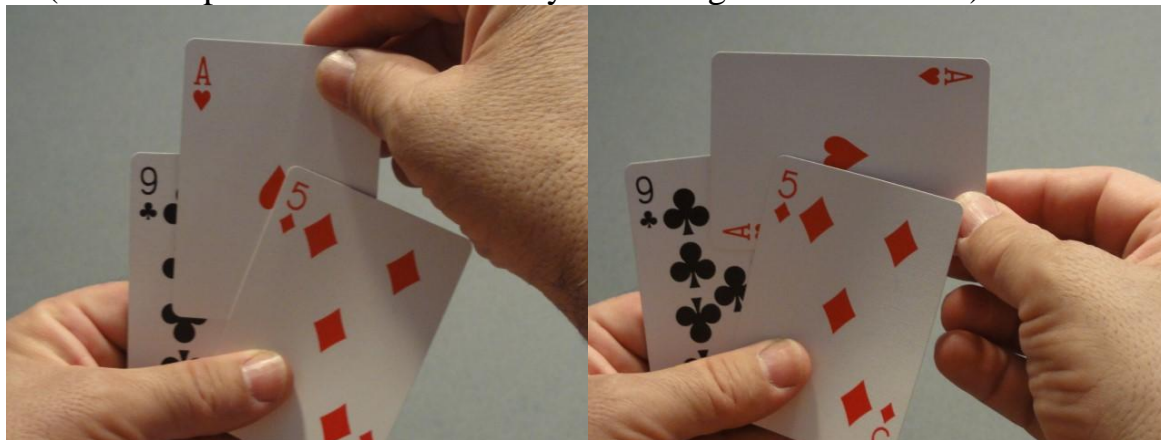


**Example of a Strong / Weak Pair Combination**

Notice the Long Edge Right Side...Big Diamond on one & Small on the other

-13- Diamond Sort Scam

- Team members will wager as a unit in direct correlation to the value of the first card...Strong 1<sup>st</sup> card, Bet Player Side...Weak 1<sup>st</sup> card Bet Bank side because the Player Side is getting a weak card. Here is where the game procedure broke down even further in some cases. Players asked for all Four Cards to be dealt (Face Down) before they made a wager. If allowed, they would study all 4 Cards looking for a Pair of Strong or Weak Cards...or a Strong/Weak combination, and then make wagers. (Keep in mind that First Card Knowledge or Imperfect Knowledge of multiple cards creates a big advantage but not a “Lock” so losses can still occur.)
- Players would have up to approximately 21.0% advantage on a Strong First Card & up to approximately 8.0% on a Weak First Card, if they knew the exact card value...9,8,7...etc. Playing the Pair Combinations, Strong/Strong...Weak/Weak...Strong/Weak, will produce an average advantage of over 20.0%. With imperfect knowledge, the advantage would float between 1.0% & 10.0% depending upon the mathematician you ask.
- Irregular borders (Factory Sorts) are very common in playing card manufacturing...Just take a look at your cards.
- Be aware that Advantage Players have been “Sorting” playing cards for years in such Carnival Games as Casino War & Three Card Poker...etc. (Not as impressive mathematically as in the game of Baccarat)

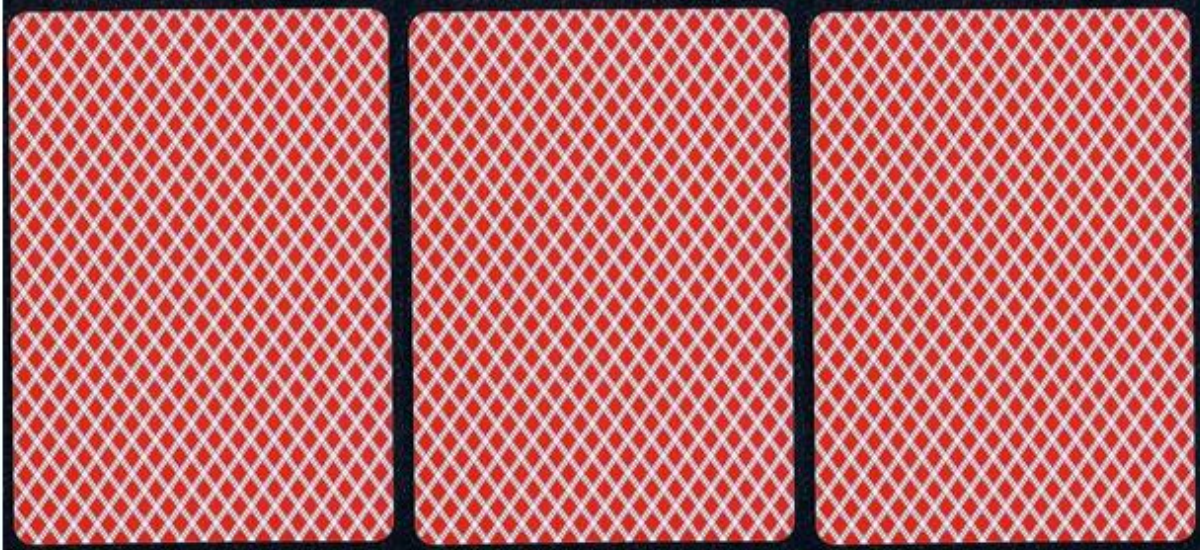


It's known as “Playing the Turn”

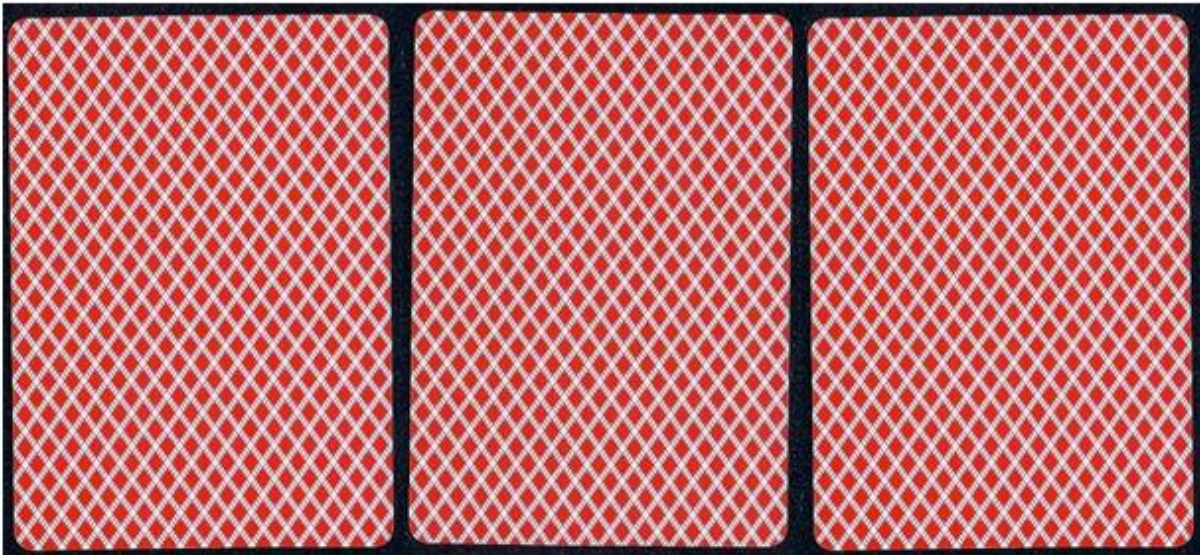


-14- Diamond Sort Scam

New Deck from the box...Notice Miss-Cuts on the Top & Bottom edges



Notice the center card below "Turned" during play...Easy to Read.



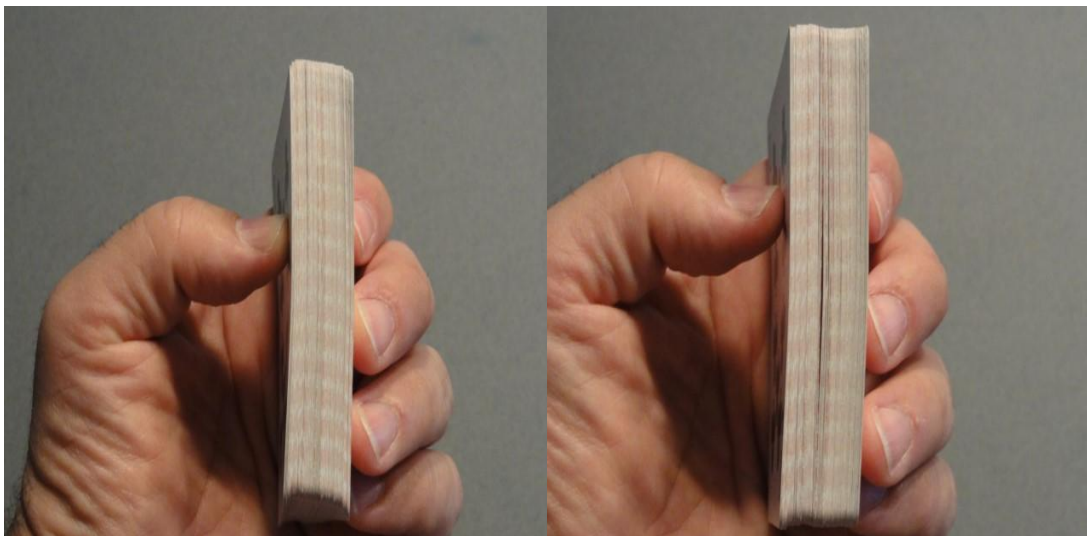
The Short Edges are often targeted in Casino Carnival Games

-15- Diamond Sort Scam

- Once sorted, playing card edges will not be interrupted even if put into a shuffle machine...Unless;
- Take a lesson from the “Old Days”...

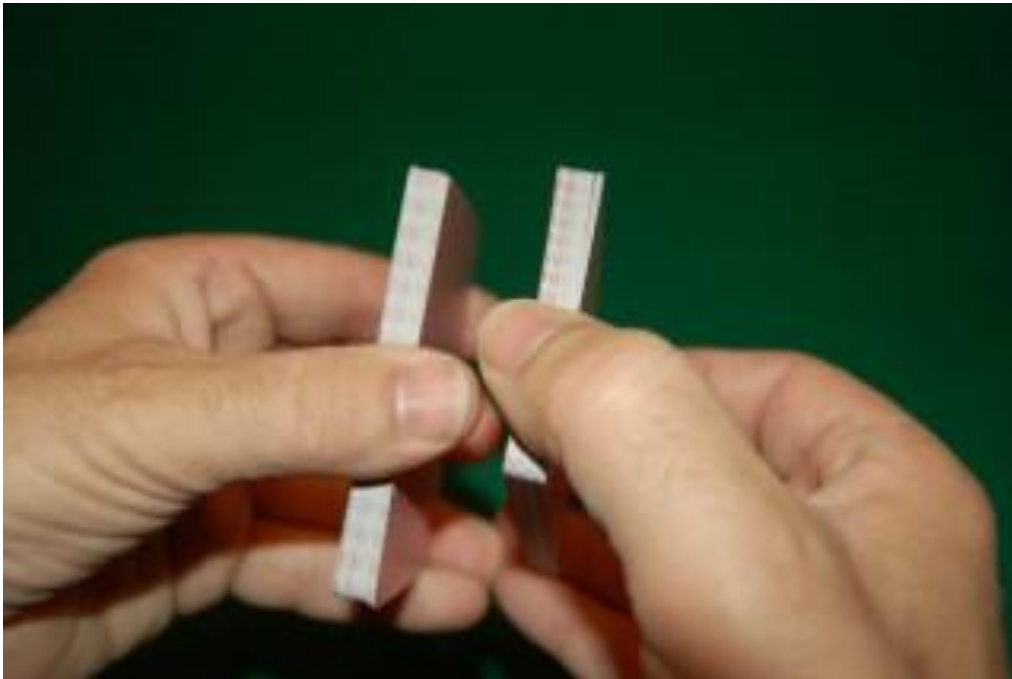
In order to defeat or slow down such Advantage Plays and Pip Tracking, Natural Warps and Sort Tracking, dealers were instructed to “Turn” half the cards before beginning a shuffle-up. Not a bad procedure for the single deck Carnival games.

I suggest in game protection classes that when wagers increase, (move up one unit of Color...Red to Green or Green to Black) that a floor person give the playing cards a cursory examination for Bends & Nicks and so on...



If there is evidence of Bends or Nicks or the playing cards just seem beat-up or Worn...”Change the Cards”. If not...

-16- Diamond Sort Scam



As a precaution, “Turn” half the deck around then place them back in the discard rack or shuffle machine.)

**NOTE:** The most important element in this entire scenario was not miss-cut playing cards, but rather allowing customers to dictate the game procedures, shuffle policy and wagering structures. All of those impressive percentages of advantage the players gained from their scheme could not have occurred without those outrageous breaks in table game procedures, which the casinos agreed to. The percentage you want to keep in mind is...”**Zero**”. With playing cards right out of the box, the scheme could not have happened. Keep in mind:

***“The Procedure Is Stronger Than The Move”***





-17- Diamond Sort Scam

**FYI: “Dinosaur” Game Protection**

A few years ago I was conducting a game protection seminar at a major casino. I was asked to evaluate their Baccarat Shuffle-Up. I recognized the shuffle-up procedure as the exact pattern in place at a casino in Atlantic City for which I had been employed as an expert witness on a criminal prosecution of a false shuffle scheme. False shuffle cheating aside, I criticized the shuffle pattern for violating several game protection considerations...

- The pattern was too “Straight Across”
- Pick-Up Points were too exact (I suggest un-even pick ups)
- There were no Strip Cuts
- There was no Turn in the shuffle
- They did not employ a “Staggered” (Laced) Shuffle display at the end

It got back to me through the “Grapevine” that some high level casino person commented; **“George Joseph is a Dinosaur”**. Well...After Several Million Dollars in baccarat losses at that property, the high level casino person is out of a job and the Dinosaur is still roaming the gaming industry.

I’m often asked why a “Turn” should be included in a shuffle-up. The reasons are;

- Helped protect against Natural Warps created when a dealer Peeked by hand
- Helps slow down certain Marked Card Schemes
- Helps to protect against Side Sort Scams...Playing the Turn...One Way Decks
- Helped slow down Pip Trackers

Many times these considerations are ignored with the following rational;



-18- Diamond Sort Scam

- “We don’t Peek by hand, so there are no Natural Warps
- “We use shuffle machines”
- “Players don’t touch the cards”
- “*What the Hell is Playing the Turn?*”
- “*What the Hell is Pip Tracking?*”

Some game protection guys and magicians point out that if the casino had a “Turn” in their shuffle-up, that the players would simply “Turn” high value cards in one direction for the first half of the shoe and then reverse the Turn in the second half. This may have been true for a multi-deck face down Blackjack game (which haven’t been offered in twenty years), where the player is “Turning” cards. In the Baccarat scenario described in this memo, you’d have to make the ridiculous assumption that the casino is allowing players to ask that certain cards be turned one way or another in the first place, and that the casino allowed it to occur in plain view. **Please take heed to this simple advice.**

**Table Game Dealing and technology may have change dramatically over the years...But Basic Game Protection has not.**

Ask yourself:

- “Did management have to acquiesce to all of the player requests?”
- “Why did players notice irregular borders...but management didn’t?”
- “Did their own marketing department have any culpability in persuading management to relax their own policies?”
- “Could the casino have used new cards every shoe?”
- “Could the casino have performed a cursory shuffle (with a Turn) before placing the cards in the shuffler?”
- “Could the casino have used a covered shoe?”
- “Has the widespread use of shuffle machines relaxed the 50 year old policies of “Washing” and/or “Turning” half the cards in a shuffle-up?”
- “How many casino executives really know the reasons for including a Wash or Turn in the shuffle-up policy?”
- “Would those game protection procedures and dealing techniques which were violated have prevented this scheme?”



GEORGE JOSEPH

DYNAMIC.  
REVEALING.  
PROVEN.

-19- Diamond Sort Scam

Take a lesson from the “**Dinosaur**”

*“The Procedure Is Stronger Than The Move”*

Respectfully Submitted,

**George D. Joseph**  
Worldwide Casino Consulting, Inc.

GJ/ccj