THE ROLL OF THE DICE

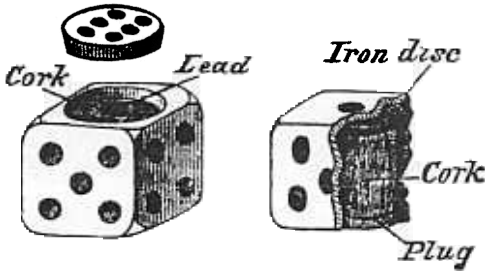
ARCHEOLOGISTS DISCOVERED SEVeral pairs of modern-looking dice in an ancient Egyptian tomb. The sandstone cubes, which now reside in a Chicago museum, are "loaded" —weighted to favor twos and fives. Larceny, it seems, is as old as the Great Pyramids.

Thousands of years later, hustlers continue to rely on this time-tested subterfuge, duping gamblers, who generally assume that they are playing with legitimate dice, known as *square dice*, *perfects*, or *levels*. To beat the odds, cheats utilize *percentage dice*, which include *passers* —designed to favor the combinations four, six, eight, and ten —and *missouts*—engineered to produce more sevens. Loading, known as *inside work*, is one way to create these devices. The loads vary, ranging from a light percentage to heavily weighted *first flop* dice, which frequently show the desired combinations.

Though effective, loaded dice present substantial drawbacks: Burned or cut open by embittered losers, they leave behind telltale metallic loads. Swindlers have longed for undetectable means of loading dice. "In gaffed dice," the gambling expert Frank Garcia observes, "this is important for the continued good health and facial appearance of the hustler."

So sharps have kept developing new, insidious means to alter the weight of dice to affect their outcome. Rigged dice called *floaters* rely on empty spaces within a die to throw off its weight, the light side of the die being more likely to tumble to the top. Floaters can be burned without leaving any residue, though as their name suggests, they float when dropped in water. Eventually gambling supply houses began offering dice weighted with so-called cabalistic loads, which could be cut, burned, or dropped in water without detection.

In the late nineteenth century loaded dice became more sophisticated with the advent of tappers and electric dice. *Tappers* contain a drop of mercury and oil in a tiny dumbbell-shaped cavity extending outward from the center of the die. Initially a tapper is evenly weighted. Yet, by tapping the dice before throwing them, the cheat shifts the mercury away from the center, effectively loading the dice. After the throw a tap in the opposite direction moves the mercury back to the center, restoring the cubes to perfect balance. Though ingenious, tappers proved unreliable, and gamblers grew suspicious of the tapping.



With electric dice, a magnet is switched on to attract the iron disk. Lead and cork maintain the proper weight and balance.

Electric dice feature iron disks embedded beneath selected facets. An electromagnet concealed within the craps table allows for selective control of the outcome; by activating the electromagnet, the operator can produce a desired combination. Player-cheats also use electric dice. A confederate, posing as a spectator, wears a powerful magnet beneath his clothing and assists the hustler in rolling a welcome combination by pressing the magnet against the game table. This produces a near-certain result, but the setup is expensive, requires elaborate preparation, and leaves concrete evidence of fraud.

Modern cheats have found great success with simpler, cheaper methods of gaffing dice. Abandoning inside work, hustlers now alter the external attributes of the dice, a craft known as *outside work*.

Some attack the shape of dice. By shaving between five- and forty-thousandths of an inch from one facet, cheats create dice dubbed *bricks* or *flats*. Bricks work because shaving one facet reduces the surface area of the four adjacent sides, as well as the chance that the die will come to rest on one of those sides. Thus a brick is more likely to land on the shaved facet or the opposite side. Dice crafted with convex facets, called *bevels*, tend to roll onto a flat side. Conversely, concave surfaces create a slight vacuum that adheres to a smooth playing surface, the principle underlying so-called *suction dice*. *Edge workers* fashion *trip dice* by rounding certain edges, causing the cube to roll until it hits a sharp edge.

Other cheats utilize surface qualities to rewrite the laws of probability. *Capped dice* feature facets coated with a substance more elastic than the rest of the die, causing it to bounce off the capped sides. Selective polishing, known as *slick work*, increases the likelihood that the tumbling die will slide to a stop on the slippery side. Even applying the spots with a heavy zinc paint gives the cheat a small advantage.

Subtlety is important to the dice cheat. By cutting his percentage, he reduces the chances of detection. And, in the long run, even a modest advantage will suffice. "Sharps have been known to lose in spite of the favorable percentage, but those instances are merely the well-known exceptions that prove the rule," the gambling authority John Scarne once observed. "If the dice roll long enough, the man who knows what numbers are favored is going to finish with a fatter bankroll than when he started."

—G.R.B.

Sharps and Flats, BY JOHN NEVIL MASKELYNE (1894). COURTESY OF GAMBLER'S BOOK CLUB. OPPOSITE PAGE: TOP—COLLECTION OF PHIL FLANNAGAN, PHOTOGRAPH BY TONY WALSH; BOTTOM—COLLECTION OF BOB ROSENBERGER, PHOTOGRAPH BY TONY WALSH.