

SPRINGBOARD

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In Greg Kehm's book "Great Moments in Olympic History" he notes that diving originally was a way for people to entertain themselves and others by jumping from cliffs and rocks into the water below. As one reflects on these early efforts, it becomes clear that diving was the only human endeavor in which the participant "flies," if you will, without any bodily attachments or without riding a gadget or some sort of equipment. When I originally decided to write on this topic, I really did not appreciate how difficult it would be to explain to an audience unsophisticated in the complexities of the sport to make it intelligible. I hope I have succeeded.

In a roof slab of a burial vault in Naples, Italy, there is a painting of a young man diving into water from a narrow platform. This painting teaches us that the excitement and grace of diving from high places into the water and the sport of diving has lured participants for at least 2500 years. It was described at that time as "plunging into water from a platform." The distance traveled under water was the judged element. It was this beginning that transformed diving into an event as part of competitive swimming. Somehow the grace and athleticism, the hallmarks of modern competitive diving, do not seem to be well characterized by that description. Yet, most of us have watched with fascination and wonderment as the young men dive from the high cliffs of Acapulco.

From the time of 400 BC, diving apparently lay dormant with little recorded or even known about its history. In the early days of modern diving, in the late 1800's, it was difficult to find suitable places for takeoff. Participants dove and/or jumped from bridges in both Europe and the United States. Little is known of the modern history of the intervening years in diving, although it is known that it evolved during the 1880's from gymnastic programs in both Germany and Sweden. During the summer months, gymnastics could be performed over water—a more comfortable landing site than a hardwood gymnasium floor particularly following a failed

exercise. It is from these early efforts that the term "fancy diving" evolved, to distinguish it from plain diving or plunging. As it developed during this period, the sport of diving had more in common with gymnastics than with swimming races and in many ways that is still true today. Further, as noted by a most respected writer about diving, Ron O'Brien, "Diving is a very complicated sport."

Modern diving requires physical and technical skills, perhaps better defined as abilities. All of these are learned by the diver as none of them is natural. Divers jump from a springboard or platform and perform gymnastic maneuvers as perfectly and gracefully as possible before breaking the surface of the water. Judges award points for the mastery and grace of the dive. But, the entry is of primary importance as divers must enter the water with as little splash as possible. The order and details of the dives to be performed are provided by each diver to the judges shortly before the beginning of a swimming meet. Once submitted, they cannot be changed. Synchronized diving events are performed by two divers from both the three meter boards and the 10 meter platform. The springboard event is performed from two springboards set apart by a safe distance. In the platform competition, the divers both dive from the same platform, but separated by at least six feet. The objective is to perform the diving maneuvers simultaneously and with the approximate identical technique. It is extremely difficult to synchronize the movements perfectly, but both divers must execute the same dive if not executing it identically. The scores are awarded by nine judges assigned to judge either the execution or synchronization of the divers. One set of judges considers the synchronization of the dives, the other set the athleticism and grace. As mentioned with judging of dives, the highest and lowest scores are eliminated from calculation of the final award.

Several elements characterize or profile a diver. The first is the technical impression that considers the grace and effortlessness of the diver. It is essential that the diver presents an aesthetically pleasing presence. As I tend to have a weight problem, it seemed like I spent my entire college career at the athletic weight control diet table.

The second centers on the propulsion capabilities of the diver with a presentation of stretching and power. Much of this is learned with trampoline exercises. But, more about that later.

In modern training facilities, compressed air can be released at the point of entry and serves to cushion a poor entry and gives the diver greater confidence to attempt a new dive.

The normal top level career begins when the young diver is between 14 and 16 years of age, with performance peaking between years of 21 to 22. After that age performance drops off. The first "modern day" diving contest was held in England around 1880, with the initial championship competition being held in Scotland in 1889. It was during the 1904 games that diving became an Olympic sport for men. Women's platform diving was introduced at the 1912 summer Olympics. The first recorded diving event in the United States was held at the University of Pennsylvania in 1907. Until recently, the United States dominated international diving competitions. As evidence, nearly half of all medals awarded in the modern Olympic diving events have gone to divers from the United States. Many divers have left their home countries to pursue their education and advanced diving coaching at U.S. universities. As one writer put it, "to be the best you need to train with the best."

The early competitive dives were somewhat simple viewed by today's standards. Plain diving competitions were devoted to the swan or shallow dive familiar to us today as it has survived unchanged for over 60 years. In the 1908 Olympics a top-rated diver failed a front double somersault and it was suggested that the dive be eliminated from future Olympics because multiple spins could not be controlled without risking serious injury. Fortunately, this suggestion was not adopted and today it is not unusual to see high school divers performing two and one-half forward somersaults. Diving has developed significantly since its early days when only 20 springboard dives were recognized in competitions. Today, the number of possible competitive dives from the one meter board alone is eighty-eight.

Diving as part of a swimming competition has several names, including the

aforementioned "fancy diving," springboard diving, platform diving, or just plain diving. In 1908, the three-meter springboard as we know it today was introduced as a part of swimming competitions. Also in that year, a table of dives and their degrees of difficulty, a term we shall revisit later, is introduced. The order of diving is decided by a random drawing of the divers' names. The diver's name, the name of the dive, and the degree of difficulty are announced prior to each dive or attempt to perform it. The judges' awards and the total award based on the degree of difficulty are checked before results of a competition are announced. On a signal from the referee, each of the judges lifts a card with his award for the dive. A diver may elect not to perform a dive, and thus receive a zero. In over 15 years of competition, I never saw a judge award a zero.

Although the physical attributes of divers vary greatly, they tend to be lean, well muscled and appear in excellent condition. Whereas in speed swimming appearance is not particularly important, in diving it is. Divers tend not to be especially tall, much the way acrobats do not. It is more difficult for a tall person to complete the more complex acrobatic maneuvers than it is for a less tall person. Larger people also tend to have more difficulty making a clean, splashless entry into the water.

Diving is performed on two types of equipment: the first is a springboard, either one or three meters above the water. Most high schools, especially those built many years ago, have only one-meter competitions because the pools were frequently built in the basement level of the school and the ceilings were barely high enough to accommodate a diver with a very high spring from even a one-meter board. And the depth of the pools varied greatly in those days. Some were barely 8 feet deep and divers used to joke that one really needed to wear boxing gloves when making a headfirst entry into some of these shallow pools. By contrast to these shallow-pool boards, only three-meter boards are used in Olympic competitions and frequently at outdoor pools where ceilings are hardly a consideration. The three meter board was introduced at the Olympic games in 1908. A competition springboard is 20 inches wide and 16 feet long, with a nonskid surface such as coconut fiber carpets on the early boards. The boards

made currently are of fiberglass or metal and usually project 1.5 to 1.8 meters over the edge of the pool. They have a movable fulcrum, called a "pivot," with which the flexibility and "spring" of the board can be easily adjusted to suit each individual competitor's style and skill level.

The platforms are solidly floored inflexible structures, again with non-slip surfaces, that are 5, 7.5 or 10 meters above the water. Only 10 meter towers are used in Olympic competitions. Tonight, I will discuss diving mainly from a springboard diving perspective because it is the only mode in which I personally competed at the collegiate level. And yes, you may think "but that had to have been more than 50 years ago." And you would be correct. But the basic elements and concepts have remained the same, although the athleticism has become increasingly extraordinary. Fifty years ago, as collegiate competitors, we could not even imagine the dives done by high school athletes today.

International diving competition is regulated by the Federation internationale de natation amateur or FINA, with domestic diving rules emanating from U.S. Diving, the sports national governing body in this country. The rules have evolved over time, not any small portion due to the introduction of the trampoline as a learning and training device for acrobatic sports. But, more about that later.

Until recently, as Chinese divers have become preeminent in international competitions, Americans dominated modern Olympic diving, having won nearly one-half of all the Olympic medals awarded in the sport. And, by any measure, one of the greatest was the American Greg Louganis. Because he was so popular and well-known during his prime, some of you may have actually seen him dive on television or news reels. Despite his astounding athletic skills, he struggled with dyslexia and his homosexual orientation, both of which he successfully concealed during the height of his competitive career.

Louganis was born in California to teenage parents of Swedish and Samoan ancestry. He was raised by an adoptive Greek-American family in San Diego. During a troubled adolescence he turned to diving as a coping mechanism. His talent was recognized early when he scored a

perfect 10 for a dive performed when he was 11 years old. He initially dreamed of winning Olympic medals in the 1980 games, which, unfortunately the United States boycotted. His list of diving accomplishments is unparalleled in the history of the sport. He won both the springboard and platform championships in both 1984 and 1988 Olympics; the world platform championships 1978, 1982 and 1986; and the world springboard championships in 1982 and 1986. And he surely would have won more, but for the United States boycott in 1980. In 1984 he scored 710.9 points in platform diving which remains today the highest score ever awarded to any diver in that event. He is the only diver ever to be awarded a perfect 10 by each judge in a major seniors platform competition. Understandably, Louganis has been frequently referred to as "the greatest diver of all time." But, it might not have been so. In 1988, while attempting a tricky reverse dive he had a poor take-off and with what was described as a "sickening thud," struck his head on the board—a complication most dreaded by all divers. (This is only one of several incidents of this type that he experienced during his diving career.) But, he would not give up. One-half hour after quick stitches temporarily repaired the gash, he was back on the board. He only agreed to go to a hospital when he had successfully qualified for the finals which he later won easily. After the incident Louganis said, "I was underwater before I realized that I'd hit my head. Once I did, the first emotion I felt was embarrassment: this was the Olympics, I was a gold medalist, and here I'd gone and hit my damn head on the board. I'd had accidents before, but never at the Olympics."

Louganis retired from competition in 1989 and the following year his autobiography "Breaking the Surface" became a best seller after he admitted on national television that he suffered from AIDS. In several writings about Louganis it is emphasized that even though he experienced several collisions with the diving board, he never actually bled into the pool as a result. One could argue that he should not have taken that chance with the potential to infect fellow competitors with the AIDS virus. Nonetheless, he did and proved to be a uniquely skilled athlete.

Dives are performed in one of three positions. The most well-known is termed the "layout

position." Throughout the entire dive, the body is kept straight, with straight knees and without bending at the waist. The most common dive in the layout group is the swan dive also called by the Swedes the "swallow dive," which is familiar to most of us. In both ancient competitions and those of early modern times, the only dive performed was the swan dive, at times coupled with scoring credit given for the distance traveled under water. Frequently, the winner was simply the diver with the longest under water traverse.

A second position is termed "pike," in which the diver bends at the waist while in the air, but enters the water with the back and legs straight. The knees remain straight throughout the dive. An example, again commonly seen, is the so called "jackknife," but with the technical term of forward dive in the pike position.

The final position is termed "tuck" or "hunch" and the names describe the position as the knees are bent and held to the chest with the head resting on the bent knees. The most common use of this form of dive may be the so-called "cannon ball," which is not really a dive, but a favorite maneuver of children at the local club pool to splash as much water as possible in the hopes of deluging onlookers. Tuck is the most efficient form for somersaulting either forward or backward, but perhaps at the same time the least graceful. It is a common position for high schoolers and other less experienced divers, but not commonly observed during more sophisticated competitions, unless during multiple somersaults of $2\frac{1}{2}$ to 3 rotations.

Although twisting is not a position, it is a maneuver in which the body is rotated in the head-to-foot axis while the body is kept straight. In advanced diving, twists are frequently combined with spinning in either the tuck, pike, or layout position, more commonly the pike position, but the body is always straight during the twisting portion of the dive and during the entry. Any combination of twisting with part of the dive performed in one or more of three basic positions is termed a "free dive," or in the jargon of divers, a "twister." Some of the descriptions of the dives can seem rather complicated. For example, a double twisting forward two and one-half somersault in the pike position, recalling that all the twisting is performed in the layout

position. In such a dive, the athlete springs from the board or platform, does a somersault and a half in the pike position, straightens his body and executes a double twist, bends at the waist into the pike position again and executes a final somersault prior to entering the water in the layout or straight position. Execution of such a dive cleanly is as difficult as it sounds.

In the 1920 Olympics at Antwerp, the diving list included the "header forward" (or straight dive), the "hunch dive" ("or "tuck" in modern terminology), and "pike dive" (the diver bent at the waist but otherwise the legs remain straight, as noted, still called the "pike" position today. Considering the extraordinary complexity of dives performed at the college level and in the Olympics today, descriptions of many of these early dives seem almost quaint.

There are five basic groups of dives and all the competitive dives belong in one of these groups. In the forward dive the diver faces the water and executes a dive rotating forward toward the water. He may enter the water either head or feet first.

In the backward dive the diver begins by standing on the end of the board or platform with his back to the water and facing the end of the board attached to the station. He springs out over the water, executes a dive and may enter the water either head or feet first.

In the reverse dive the diver begins by standing at the fixed end of the board. He approaches the end of the board over the water facing forward. After takeoff, he rotates his body backward toward the board. He may enter the water either feet or head first. Years ago when I was diving competitively, this form of dive was termed a "gainer," the origins of that term being unknown to this writer. Depending upon the number of rotations, a dive would be termed a half gainer or a gainer and a half and so on.

In the inward dive the diver stands at the end of the board over the water facing toward the end of the board fixed to the station. After springing off the board, he rotates his body back toward the board. He may enter the water either head or feet first. When I was diving, years ago, this dive was called the more picturesque name of "cutaway." Thus, a spring from the end of the board and rotating one and one-half turns back towards the end of the board over the water before

entry into the water was termed a "cutaway and a half." Today it is termed an inward one and one-half somersault—a much less picturesque name.

A final type of dive, termed a "handstand," is only performed from a 10 meter tower. The athlete initiates the dive from a handstand at the pool edge of the tower platform. He then uses his arms to spring his body over the water. Any number of acrobatic exercises from somersaults to twists may be executed prior to entry into the water either hands or feet first.

By way of summary of the categories of competitive dives, they divide into one of five categories: forward, backward, reverse, inward and handstand. To these can be added a sixth category: a twist. If a dive in any of the categories above has a twisting component it is categorized as a twisting dive or simply a twist. In some cases the twist is added in the middle of the dive and sometimes at the end. As noted, a few dives have a twist as the only acrobatic element. The addition of a twisting element to a dive increases its degree of difficulty, a term we shall now define.

Dives are rated by how hard they are to perform by a term referred to as the "degree of difficulty." The easiest dives, say a forward dive in the pike position, the so-called "jackknife," have the lowest degrees of difficulty, 1.2 in the case of the jackknife as it is not especially athletic nor difficult to perform. At the other end of the difficulty range are the multiple spinning and twisting dives which may have degrees of difficulty up to 3.7. In some competitions the cumulative degree of difficulty of all the dives to be performed may not exceed a total number that varies with the competition. This limit is designed to permit divers of various skill levels to complete more fairly than if there were no limits.

Major diving competitions are generally judged by five judges who score a dive between 0 (completely failed) and 10 (extraordinary dive) in one-half point increments. Points are awarded according to the following guidance:

8 1/2 to 10 points - very good/extraordinary

6 1/2 to 8 points - good

5 to 6 points - satisfactory

2 1/2 to 4 1/2 points- deficient

1/2 to 2 points - unsatisfactory

0 points - completely failed

Without regard to the number of judges, their awards are multiplied by the degree of difficulty to arrive at a score for the performance of that dive. For example, let's assume that a diver does a one and one-half somersault in the pike position and each of five judges awards him a 7. Combining all the judges' scores yields 35 and the dive has a degree of difficulty of 1.4 for a total award of 49.0. The winner of a diving competition is the diver with the highest cumulative score for all the dives performed. Theoretically, a dive is judged on five elements:

Approach - the diver walks or runs to the end of the springboard or tower platform; this initiates forward, reverse, and some twisting dives.

Takeoff - springing or jumping from the end of the board or platform.

Elevation - the height in the air the diver achieves after takeoff.

Execution - the technique and grace of the actual dive in the air.

Entry - the angle should be perfectly vertical, and the amount of splash minimal, that is, the entry should be "clean." Dives with clean entries generally receive higher scores than dives with less clean entries. Experienced divers spread their hands as they first touch the water in headfirst dives in order to open a space in the water into which the diver's body follows. This maneuver facilitates a "clean" entry.

The judging elements may be more theoretical than real. Following a dive a swimming meet official blows a whistle at which time each of the judges pulls from their stack of scorecards the card bearing the score he wishes to award the dive. From completion of a dive until the whistle blows is only a few seconds which is hardly enough time to work through all the elements and integrate them into a single score. Having been judged and judged other divers, it is clear to me that most judges seem to grade to a large extent on entry, modified to some extent by the

overall appearance of the dive. The entry seems to predominate because it is the aspect of the dive the judge sees last and a clean smooth entry suggests that the diver is in control of the dive. Judges are usually lurking somewhere in sight of the board while the divers are warming up prior to the competition. This permits them to assess the skill levels of the contestants and to adjust the scoring to match those skills from the first dive of the initial diver.

Prior to the start of the swimming meet competition, divers are required to submit a list of optional dives to be performed and this list can not then be amended. These dives are performed in addition to a required dive. Required dives are selected from the simpler dives in each of the fundamental positions already described. And, the dives must be performed exactly as specified in the list of approved dives along with the degrees of difficulty. A dive is completely failed when the diver does the wrong dive, or falls from the tower of board, or enters the water with his body in complete disarray or in a ball. Occasionally when a diver gets lost in a dive, that is, he has no idea where he is in the acrobatics, he will curl up in a ball to avoid a painful so-called "pancake." As mentioned, when there are more than five judges, the highest and lowest awards are disregarded and the scores of the remaining judges are combined. As noted a score of 10 is extremely rare, especially if each judge awards it for a single dive.

One of the more interesting interplays of diving competition centers around whether a diver watches the other divers warming up. It is too late to change his list of dives to match degrees of difficulty the opponents are showing and some divers believe it distracts them from forming the mental image of their next dive. I preferred to watch-just curious, I guess.

As noted, in earliest Grecian diving competitions the, only the position in the air and the distance traveled in the water were scoring determinants. Now the elements outline above are judged but, as noted, the elevation and entry seem to have the greatest influence on the judges—whether favorable or unfavorable. If one considers that a diver is in the air less than 2 seconds and the judges are asked for their scores a few seconds after the dive, integrating the scoring from each of the five elements is a tall intellectual order, In fact, having served as a diving judge, I can

attest that, despite all the scoring theories, in practice it does not happen as the theories might suggest.

As America has produced outstanding male divers it has also produced female divers of some note. The youngest woman to win an Olympic gold in the summer games was the American diver Marjorie Gestring in Berlin in 1936. She was 13 years old. Curiously, she could not have competed today, at least in the Olympics. Current Olympic rules state that a diver must be 14 years old to compete.

Perhaps the best known among the American women divers was Pat McCormick who won gold medals in both springboard and platform in the Olympics in Helsinki in 1952 and in Melbourne in 1956. Her victories in Melbourne were especially notable in that she had given birth only eight months before and yet she still won by the largest margin in Olympic diving history—16 points. Also of interest, her daughter, Kelly, won the silver medal on the springboard in the 1984 summer Olympics. Only one woman has ever won medals in both speed swimming and diving. The feat was accomplished in 1924 by Aileen Riggins.

International competitions currently are dominated by the Chinese divers. Among the more notable of them was Fu Mingxia who was only 12 when she first won the world platform diving championship. And, during her career she won five gold medals as an Olympic diver—the only woman diver to have achieved that number of gold medals. She was one of the new breed of divers, both men and women who started their athletic careers as gymnasts. It is a very economical way to learn and master the acrobatics and complexities of modern diving. An athlete can practice over mats in gymnastic training gear, so called "dry board training," and repeat a maneuver many, many times without the uncomfortable risk of crashing into the water and without having to climb the ladders to the three meter diving board and the 10 meter tower. By the end of a long training day, those climbs feel like 30 and 100 meters.

But today there are several pieces of equipment that facilitate learning and perfecting dives. Overhead spotting equipment is a system of ropes and pulleys attached to a belt around the

diver's waist that allows the coach to safely control the diver's movements in the air. Thus, the potentially crippling crashes to the gym mat can be avoided and permit the diver to attempt several repetitions of a practiced maneuver.

But no piece of equipment has changed diving training like the trampoline. It is possible to repeat the acrobatic maneuvers even the most complex dives several times over without the trauma of "crashing" into the board or the water of a pool. And there are no ladders to climb! Suspension gear can also be used over trampolines and gymnastic pads increasing the safety even more..

In 50 years the sport has grown almost out of any recognition. Today, young divers perform dives that were not even considered by the most accomplished diver in my generation. As soon as you see a competition on television, you believe the divers can not attempt even more difficult and complex dives, but I suspect they will. Diving is not a sport for everyone and especially those with an aversion to heights. But it can be an exiting part of a young woman's or young man's life. And it attracts the attention of the handsome boys and lovely girls sunning themselves around country club pools. This may serve as a potential introduction and possibly a future date. At least it is probably a better attention getter than putting the shot or throwing the javelin during sparsely attended track meets.