

1966

WORLD PROFESSIONAL  
TRAMPOLINE CHAMPIONSHIPS

—OFFICIAL HANDBOOK—





Photo Courtesy National Sports Institute, Paris, France



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WORLD  
PROFESSIONAL  
TRAMPOLINE  
CHAMPIONSHIPS**

**—OFFICIAL HANDBOOK—**

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PUBLISHED BY

WORLD PROFESSIONAL TRAMPOLINE ASSOCIATION  
BOX 1270, CEDAR RAPIDS, IOWA U.S.A.



**GEORGE HERY**

Farmington, Massachusetts

**1964-5 World Professional Champion**

Big Ten Free Exercise Champion 1964

USGF Long Horse Champion 1964

USGF Trampoline Tour of Europe 1963

1965 World Professional Trampoline Ranking — 1





**STEVE JOHNSON**

Ft. Collins, Colorado

**1964-5 World Professional Runnerup**

Midwest Open Trampoline Champion 1960

National Gymnastic Clinic Trampoline Champion 1961

Big Ten Trampoline Champion 1962

NCAA Trampoline Runnerup 1961

NCAA Trampoline Champion 1962

USGF Trampoline Team Touring Africa 1964

1965 World Professional Trampoline Ranking — 2

## THE 1964-65 WORLD PROFESSIONAL TRAMPOLINE CHAMPIONSHIPS



Watching the action at the 1964-5 Championships were Ed Cole, eventual Champion George Hery, CBS telecaster Chris Schenkel, and Steve Johnson.

The unique resort atmosphere of Grossingers, in the heart of the Catskill Mountains of upstate New York, provided an ideal setting for the 1964-65 Championships. A CBS Sports Spectacular Television crew with announcer Chris Schenkel was on hand to record all the thrills and suspense of the action, featuring eight of the world's best Trampolinists in a double elimination tournament-type competition.

First prize, a 1965 Ford Mustang was won by George Hery, a former gymnastic star at the University of Iowa, who edged out Steve Johnson of Denver, Colorado. Johnson was former Big Ten and NCAA Trampoline Champion as an undergraduate at Michigan State.

The final match was probably decided with the beginning stunt as Hery executed a near perfect Triple Back Somersault, followed with a Barani Out Fliffus, Back Somersault, Full Twisting Back Somersault,  $1\frac{3}{4}$  Back Somersault (Piked Position), Double Cody, Back Somersault (Layout Position), Full Twisting Back Somersault,  $1\frac{1}{2}$  Twisting Forward Somersault, Double Back Somersault, Double Back Somersault, and finishing with a Triple Twisting Back Somersault. Spectacular as Hery's performance was, he barely defeated Johnson, whose consistency throughout the entire tournament brought him within an eyelash of victory.

One of the closest matches of the tournament occurred in the finals of the losers bracket between Johnson and Ron Munn, a former National AAU Trampoline Champion and now a professional school assembly program performer, who had defeated Johnson in the second round. This time, however, Munn ran into a slight difficulty in his routine and Johnson's consistency paid off.

Other finalists in the 1964-65 Championships were: Joe Tim, Amarillo, Texas; Larry Martin, Ottawa, Canada; Pat Winkle, London, England; Richard McFarland, Amarillo, Texas; and Jerry Luschak, Toronto, Canada.



## WORLD PROFESSIONAL TRAMPOLINE CHAMPIONSHIPS

# OFFICIAL RULES

### ELIGIBILITY

Competition is open to all Rebound Tumblers. No restrictions are placed as to age, or past or present affiliations.

### ENTRIES

Entries must be submitted to the competition committee of the World Professional Trampoline Association. They will be accepted only on official entry forms and only if they are accompanied by accurate, up-to-date, axial rotation ratings. All entries must be received before the stipulated closing date together with the entry fee as designated on the entry form.

### METHOD OF COMPETITION

Competition for the World Professional Trampoline Championship will be in the form of a double elimination tournament whereby each competitor must be defeated twice before being eliminated. The loss of one match drops the participant into the loser's bracket where he still has the opportunity to compete against the winner of the winner's bracket. If the match between the loser's bracket and the winner's bracket results in the first defeat for the latter, a rematch between the two will be held to determine the winner. A sample double elimination tournament bracket is illustrated on page 8.

Competitors compete in pairs, alternately presenting their routines on the same Trampoline. A flip of a coin determines which competitor performs first.

Each competitor is required to perform one optional 12-bounce routine. The same routine may be executed in every match of the tournament, or it may be varied.

A competitor may take as many preliminary jumps as he desires before commencing with the first skill of a routine.

Upon completion of his routine the competitor must come to a controlled stand on the Trampoline bed before dismounting to the floor.

## QUALIFICATIONS FOR FINALS

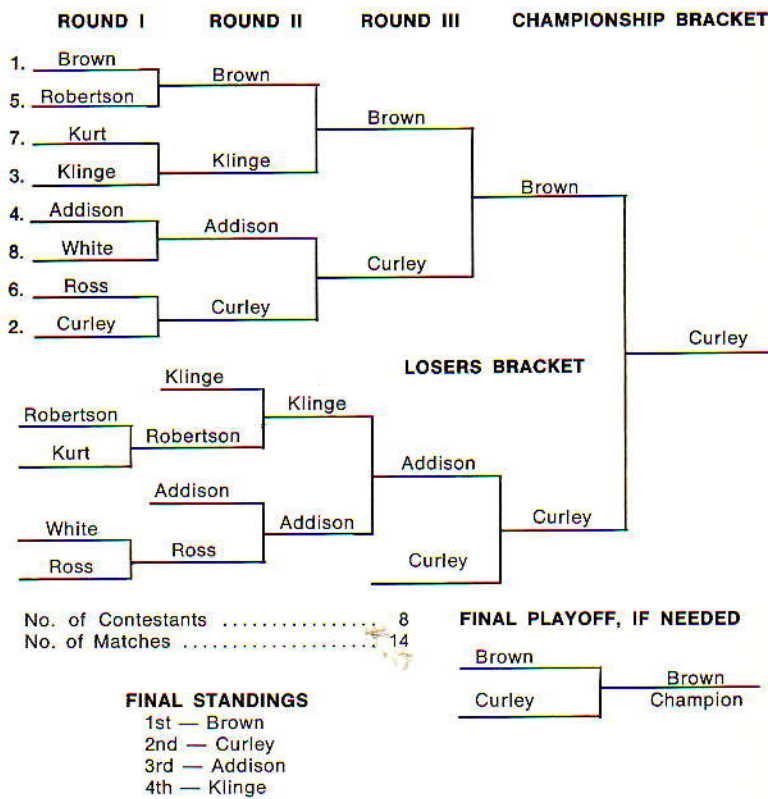
The eight competitors with the highest axial rotation ratings (based on a 12-bounce routine) qualify for the final competition.

## SEEDING

Competitors for the final competition will be seeded in respect to their axial rotation rating. (see seeding and an example of a double elimination tournament bracket illustrated below.)

### AXIAL ROTATION RATING

- |                   |                    |                      |                  |
|-------------------|--------------------|----------------------|------------------|
| 1. Brown — 144.9  | 3. Klinge — 142.8  | 5. Robertson — 139.7 | 7. Kurt — 137.2  |
| 2. Curley — 144.3 | 4. Addison — 141.6 | 6. Ross — 137.6      | 8. White — 135.8 |



No. of Contestants ..... 8  
 No. of Matches ..... 14

- FINAL STANDINGS**  
 1st — Brown  
 2nd — Curley  
 3rd — Addison  
 4th — Klinge



## JUDGING

The six competitors who are not actually competing at the moment will act as judges. No score or tariff will be assigned. The judges only decide which of the two performers executes the better overall routine (Human Computer Theory). In case of a tie, the head judge, selected by the tournament committee, will cast the deciding vote.

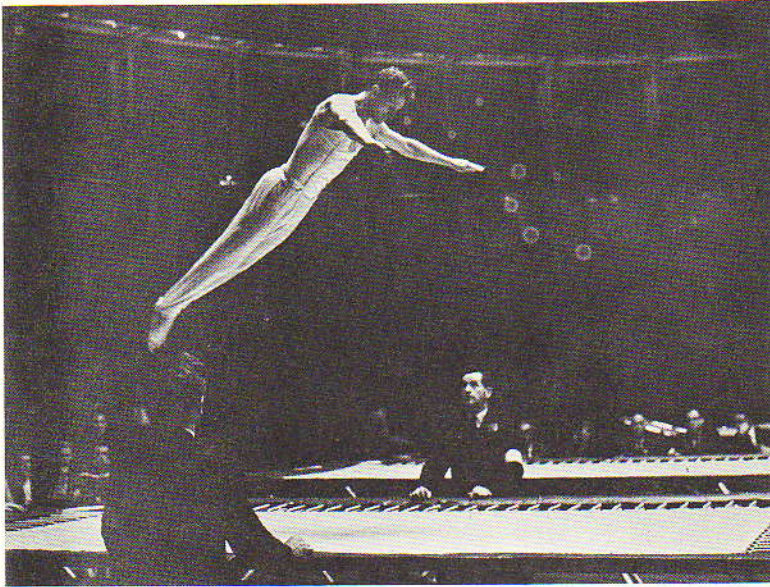
In making his decision, each competitor-judge will take into consideration the difficulty and combination rating of the routine being performed, and to what extent the performer displays grace, ease and sureness throughout his exercise (aesthetics). More comprehensive guidelines for judging, including the Axial Rotation System of evaluation can be found in the appendix.

## UNIFORMS

A complete athletic uniform must be worn by all competitors. Uniform should consist of a shirt, trunks, or long gymnastic-type trousers, and Trampoline shoes.

## EQUIPMENT

1. The Trampoline frame shall measure approximately 10' x 17' x 41" high. It shall be equipped with an auxiliary framework on both sides to accommodate four 20" x 62" safety pads which cover both the frame and 10" of the suspension system.
2. The Trampoline bed shall measure approximately 7' x 14'. It shall be constructed of 1" wide nylon webbing, sewn under tension and equipped with smooth nylon suspension bars to provide a uniform pull on the bed.
3. The bed shall be suspended by 112 nickel-chrome plated steel coil springs made from 1/8" oil-tempered steel wire and measuring approximately 1 1/8" x 9" long.
4. Protective pads on both ends of the Trampoline shall cover the frame and a minimum of 4" of the suspension system. The side pads shall be as described above in 1.



## TOURNAMENT COMPETITION for TRAMPOLINING

MAN-TO-MAN tournament competition is not really a new development. Many sports such as handball, tennis, wrestling, and fencing, to name but a few, effectively use this system to pit one competitor against another to determine which one advances toward the finals. It is inherent in this method of competition that the eventual winner must beat the "field" to come out on top.

To be sure, this type of competition for Trampolining is a marked departure from the usual gymnastic-type scoring method of judging competitors against an arbitrary perfect score. However, one must recognize the fact that Trampolining (or rebound tumbling) is not necessarily a gymnastic event, and should not have to be shackled with pure gymnastic-type scoring methods which, in some ways and in some countries, have limited its growth as a sport. Trampolining is an entirely different activity and consequently lends itself to a more accurate and more efficient method of determining winners than is possible in basic gymnastic events.

Essentially, this system is more simple to administer, fairer to all competitors and more easily understood and appreciated by spectators. Competitors compete in pairs, alternately presenting an optional 12-bounce routine. The judges then only have to de-



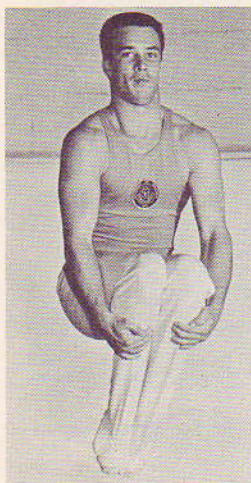
cide **which** of the pair is the winner. The decision is made immediately and flashed to the audience.

Although man-to-man or the "knock out" system of competition is not recommended for most gymnastic events, it has proved to have several important and unique advantages for Trampolining:

1. Direct confrontation between two performers makes for more vivid and keener personal competition than merely performing for points.
2. A Trampoline routine takes only about 20 seconds so that direct competition between two performers, including time for the judges' decision, can be easily completed in less than one minute. No lengthy judges' conferences are needed which delay the meet and decrease spectator interest.
3. Since skill and timing, rather than endurance and strength, are the most important factors in Trampolining, a competitor can perform his top routine several times during a short period of time. The audience is able to see the better performers several times in increasingly stiffer competition.
4. Double elimination allows each competitor to compete at least twice.
5. Because of the speed and efficiency of a meet, it is only necessary for one match or competition to be held at one time, retaining the undivided attention of the audience.
6. Only one simple decision is necessary. Judges can more quickly and accurately determine the winner. The results are less likely to be criticized since no score is assigned.
7. Since competition is concentrated within a short period of time, it eliminates the need for auxiliary warmup Trampolines.
8. More complete T.V. and press coverage is possible because the better performers and the best matches are known ahead of time.

To be completely fair, man-to-man, tournament competition must rely on proper seeding. Competitors are seeded on the basis of their axial rotation rating. The highest rated performers are "seeded" in opposite brackets so they do not meet each other in the early rounds of the tournament. If the seeding is accurate, the first four seeded performers should meet in the semi-finals.

By the very nature of the competition, the performer's enthusiasm and the spectator's interest increases as the tournament progresses, climaxing with the keenest competition and the top performance in the semi-finals and finals.



**JOHN HAMILTON**  
**Louisville, Kentucky**

Southwest AAU Trampoline Champion  
1959-60-1  
Big Ten Trampoline Co-Champion 1964  
NCAA Trampoline Runnerup 1964  
1965 World Professional Trampoline  
Ranking — 8

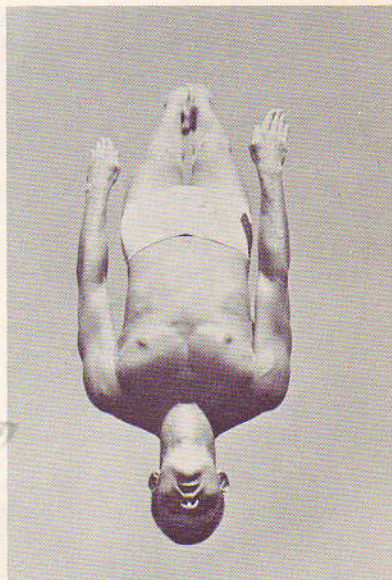
**FRED SANDERS**  
**Honolulu, Hawaii**

Jr. National AAU Champion 1962  
USGF Runnerup 1963-4-5  
Big Ten Champion 1963  
NCAA Runnerup 1963  
Big Ten Runnerup 1965  
1965 World Professional Trampoline  
Ranking — 6



**GARY ERWIN**  
**Ann Arbor, Michigan**

Jr. National AAU Champion 1961  
Midwest Open Champion 1961-2-3-4  
Big Ten Co-Champion 1964  
Big Ten Champion 1965  
NCAA Champion 1963-4  
World Amateur Runnerup 1964  
World Amateur Champion 1965  
1965 World Professional Trampoline Ranking — 4







## Frequently Used Terms in TRAMPOLINING

**BACK:** Abbreviated term for back somersault.

**BACKSTOP APRON:** An auxiliary framework, web bed and suspension system at a 72° angle on each end of the Trampoline, forming a slanting rebound wall for Trampolining and Spaceball.

**BALLOUT:** Used to describe front somersault movements originating from the back drop position.

- **BARANI:** A Trampoline movement in which the body completes a Front Somersault with a half twist in such a way that the performer can see the bed throughout the entire movement. (It is very much like the "round off" in ground tumbling, only the hands do not touch the bed and the takeoff and landing are made with both feet.)

- **BARANI OUT:** The common name of the fliffis in which the performer does a front double somersault with a half twist, the twist occurring in the second half of the second somersault.

**BLIND:** Where the performer does not see the Trampoline until the moment of contact or later.

**BREAK:** A point in a routine where the performer falls, stops bouncing, or takes free bounces instead of stunts.

**BUILD UP:** A series of free bounces used to obtain height as preparation for a stunt.

- **CODY:** A term describing back or front somersaulting movements from a front drop position take-off. (Named for Dale Coti, Alhambra, California).

- **CRASH DRIVE:** A term describing a specific somersault movement in which the body takes off from the feet, completes a Front  $\frac{3}{4}$  Somersault and lands in the Back Drop position.

**DISMOUNT:** The opposite of mount. A means of getting off the Trampoline or apparatus.

- **FLIFFIS (PLURAL: FLIFFES):** A term used to describe twisting double somersaults.

**FLIP:** Short term for somersault.

**FORM:** The grace and precision with which the performer executes a stunt or routine.

**FOOT THRUST.** The action of the feet against the bed of the Trampoline which gives the body desired torque for rotation.

**FULL:** Refers to a full twisting somersault. May be in a backward, sideward or forward direction.

**GANTRY:** A frame and net which is placed across the center of the Trampoline to form a Spaceball court. It holds the tunnel-like basket through which the ball is volleyed back and forth.

- **KABOOM:** A slang term describing a specific somersault movement in which the body starts from an almost flat back position and turns backward.

**KILL:** Flexing the knees and hips on contact to take up the spring of the Trampoline, thereby keeping the body in contact with the bed.

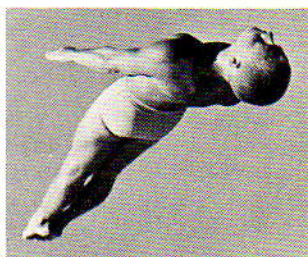
**KIP:** The action wherein one performer builds up the height of the other by depressing the bed so that it will be lower when the other performer makes contact with it. Thus, the other performer receives an added amount of lift.

**KNOCK-OUT SYSTEM:** Refers to man-to-man tournament competition where one performer must defeat another to advance toward the finals.

**LAYOUT:** A position in which the body is held straight, or slightly arched.

**LOST:** To become momentarily unaware of one's position in the air during a stunt.

**MOUNT:** Method by which the performers get on their Trampoline or apparatus.



LAYOUT POSITION

**OPEN:** To come out of a tuck or other closed position into a straight or less closed position.

**PIKE:** A position of the body in which the body is bent at the hips only. (Jackknife position)

- **PULL OVER:** A  $\frac{3}{4}$  Somersault originating from a take-off position, half way between the seat and back, which carries the gymnast backwards around to his feet.
- **RANDOLPH:** A  $2\frac{1}{2}$  Twisting Front Somersault from feet to feet. (Barani with a double twist)

**REBOUND TUMBLING:** Used interchangeably with the term Trampolining to denote the sport of bouncing on a Trampoline.

**ROLLER STANDS:** Refers to a pair of inverted "T" shaped stands with swivel casters on which the Trampoline is folded, moved and stored.

**ROUTINE:** A series of stunts usually done in swingtime.

- **RUDOLPH:** A  $1\frac{1}{2}$  Twisting Front Somersault from feet to feet. (Barani with full twist)



**SAFETY SIDES:** A term used to describe special wide, padded platforms on the side of a Trampoline for spotting, instruction and as a "ready" station between turns.

**SAVE:** Used to describe an action in which a performer makes presentable an otherwise ruined stunt or routine.

**SIDE:** A slang term meaning Side Somersault.

**SOMERSAULT:** A turning of the body about an axis running through or near the hips (lateral or anterior-posterior). Any degree of revolution about such an axis may be classed as a somersault regardless of the position of the body at takeoff. A full Somersault consists of body passage through 360°, usually, but not necessarily, feet to feet.

**SOMMY:** Slang term for somersault.

**SPOTTING:** In practice sessions, this term applies to a person protecting and assisting the performer in the proper execution of a stunt. In competition, spotters stand ready to protect the performer in case of loss of control.

**SWINGTIME:** A term used to describe the action of doing one stunt right after another without a free bounce.

**THROW:** A slang term used freely in Trampolining and diving to indicate the movement of a specific part of the body in the direction intended—i.e. to throw the arm across the chest as in the twist.

**TRAMP:** A slang term for a Trampoline.

**TRAMPOLINING:** A term referring to the sport of bouncing on a Trampoline (See rebound tumbling).

**TRAVEL:** A term used to designate movement of the whole body from one area of the bed to another. Excessive or uncontrolled traveling is a fault and should be corrected.

**TUCK:** A position of the body in which the knees and hips are tightly bent.

- **TURN TABLE:** A term describing specific somersaulting movements in which the body takes off from a front drop position and tucking, twists either to the right or left, to land again in front drop position.



TWISTING SOMERSAULT WITH  
ARMS HELD CLOSE TO BODY

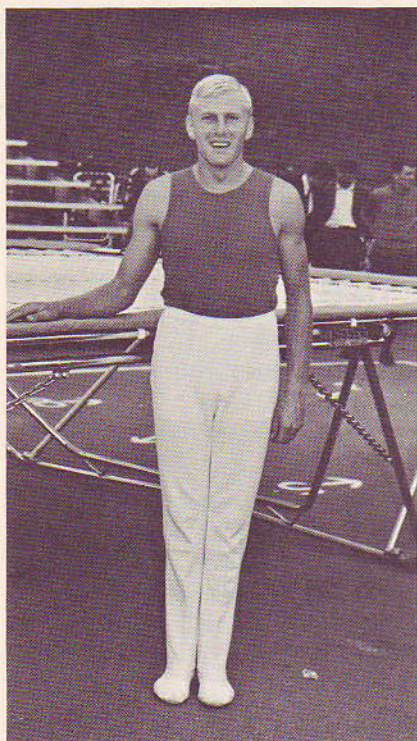
**TURN OVER:** Slang term for the somersault.

- **TWIST:** A turning of the body about an axis passing through the center of the body from head to toe (longitudinal axis). Twists are often done in conjunction with one or more somersault motions, both motions being simultaneous or not, as the case may be.

**TWISTER:** Term describing twisting somersaults.

**WRAP:** A term used to describe the action of drawing the arms and elbows in close to the body in order to spin faster.





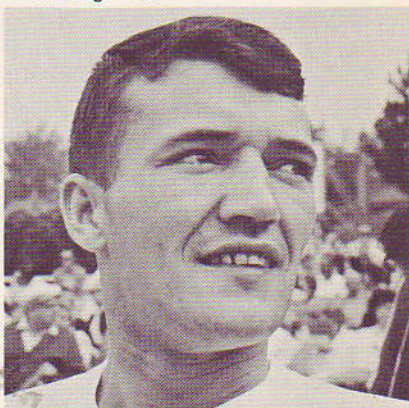
**RON MUNN**  
Amarillo, Texas

National AAU Champion 1957  
U. S. Team to Tour Africa 1960  
National Spaceball Doubles Runnerup 1965  
1965 World Professional Trampoline  
Ranking — 3



**EDDIE COLE**  
Evanston, Illinois

Big Ten Trampoline Champion 1957-8-9  
NCAA Trampoline Champion 1959  
World Professional Diving Champion 1965  
National Spaceball Doubles Champion 1964  
Eight Appearances on CBS Sports Spectacular  
National Spaceball Doubles Runnerup 1965  
1965 World Professional Trampoline  
Ranking — 5



**PAT WINKLE**  
London, England

British Amateur Trampoline Champion 1960  
National Spaceball Mixed Doubles Champion 1964  
1965 World Professional Trampoline Ranking — 7



# APPENDIX

## JUDGING GUIDELINES

In comparing one competitor with another, competitor-judges shall take into consideration these important points:

1. **CONTINUITY OR FLOW OF ROUTINE** — Does one stunt flow into the next so that the routine gives an impression of a harmonious blend of the whole exercise?
2. **FORM** — Does the aesthetics of the performance suggest grace and efficiency of motion?
3. **VARIETY** — Is there a proper balance between forward and backward skills? Are different landings used?
4. **DIFFICULTY** — Is the **overall** difficulty high or did one competitor's routine only include only a few very difficult skills and the rest of medium difficulty?
5. **CONTROL**. — Did the competitor travel excessively and/or perform precariously as to cause uneasiness or apprehension among judges and spectators?

## AXIAL ROTATION

### AN OBJECTIVE METHOD OF EVALUATING COMPETITIVE TRAMPOLINE ROUTINES

By Robert Bollinger

Elements in the competitive Trampoline exercise that should be defined and considered are:

- (1) **Difficulty** of execution of the individual stunts that comprise the competitive routine. (Difficulty of the stunts themselves).
- (2) **Difficulty** of execution of these stunts when they are put into **combination** with each other in the competitive routine. (Combination difficulty).
- (3) **The aesthetic manner** in which the complete competitive arts. (Only the first two elements above are considered when determining the rating of a routine. However, the third element is important to judges in evaluating a competitor's overall performance.)

Aside from certain variable and **uncontrollable** psychological factors, the **difficulty** of individual Trampoline stunts depend upon the following elements:

- (1) Number of rotations in the somersault. (lateral axial rotation).
- (2) Number of rotations in the twist. (longitudinal axial rotation).

- (3) Combinations of twists with somersaults. (longitudinal and lateral axial rotation combined).
- (4) Position of the body during rotation. (Tuck-Pike-Layout).
- (5) Position of the body at point of take-off. (Feet, front drop, or back drop).
- (6) Position of the body upon landing. (Feet, front drop, or back drop).

When one stunt is placed into combination with another stunt (swingtime), its difficulty **increases**. This increase in difficulty is **directly dependent upon the difficulty of the stunt which immediately preceded it**.

Taking the above **factors** into consideration, a system of evaluation has been devised for the individual stunts and combinations of stunts. It is called the 'AXIAL ROTATION SYSTEM'.

#### **AXIAL ROTATION AND HOW IT CAN BE USED TO DETERMINE A STUNT'S DIFFICULTY**

With the exception of a small group of stunts called 'ballet leaps' (Group V), all Trampoline stunts involve either partial or complete rotation about **one**, or a combination of at least **two** of the **three** body axes. These include:

1. Lateral axial rotation: (Forward & Backward Somersaults)
2. Longitudinal axial rotation: (Twists)
3. Dorso-ventral axial rotation: (Turntables and Sideward Somersaults)

**In Forward and Backward Somersaults** (lateral axial rotation), the Trampolinist is concerned only with **90 degree** rotations or  $\frac{1}{4}$  somersault progressions. Examples would be:

1. **Front Drop** = 90 degrees (lateral rotation)
2. **Forward 1 Somersault** = 360 degrees (lateral rotation)
3. **Backward  $1\frac{3}{4}$  Somersault** = 630 degrees (lateral rotation)
4. **Backward 2 Somersault** = 720 degrees (lateral rotation)

**In twisting stunts** (longitudinal axial rotation), which in most cases will be **combined** with **somersaults** (lateral axial rotation), the Trampolinist is concerned only with **180 degree** rotations or  $\frac{1}{2}$  twist progressions. Examples would be:

1. **Barani (Forward Somersault &  $\frac{1}{2}$  Twist** = 180 degrees (longitudinal rotation) **plus 360** degrees (lateral rotation).
2. **Backward Somersault & 1 Twist** = 360 degrees (longitudinal rotation) **plus 360** degrees (lateral rotation).

**In Turntables and Sideward Somersaults** (Dorso-ventral axial rotation), the Trampolinist is concerned with **both 180 degree** rotations in Turntables and **90 degree** rotations in Sideward Somersaults. Examples would be:

1.  $\frac{1}{2}$  Turntable = 180 degrees (Dorso-ventral rotation)



2. Sideward 1 Somersault = 360 degrees (Dorso-ventral rotation).

The AXIAL ROTATION method of evaluating any stunt's difficulty starts by taking the simplest stunt which involves rotation about a body axis. Examples would be:

1. **Front Drop** ( $\frac{1}{4}$  Forward Somersault) = 90 degrees of lateral rotation.
2.  $\frac{1}{2}$  **Turntable** = 180 degrees of dorso-ventral rotation.

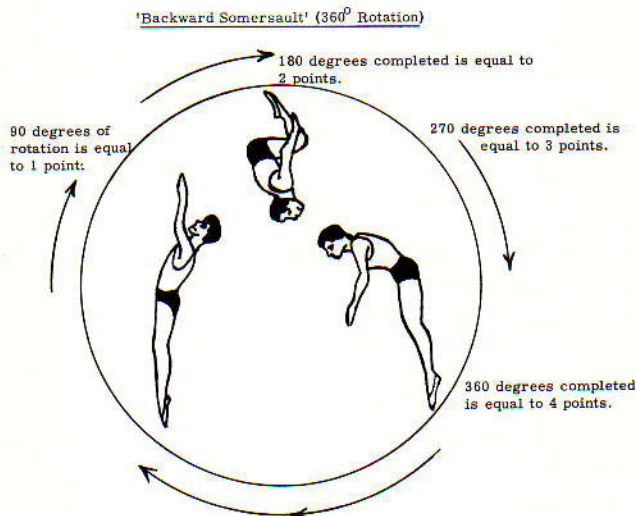
To these stunts it arbitrarily ascribes a base value of 1 point.

For each additional 90 or 180 degrees of rotation it ascribes a value increase of 1 point.

A Forward 1 Somersault (360 degrees of lateral rotation) would then receive a value of 4 points.

In like manner, a Backward 1 Somersault (360 degrees of lateral rotation) would also receive a value of 4 points)

**FIGURE I**



In **TWISTING SOMERSAULT STUNTS** (rotation about the lateral and longitudinal axis combined), we are concerned only with each  $\frac{1}{2}$  Twist or 180 degrees of longitudinal rotation combined with 90 degrees divisions of lateral rotation.

We ascribe the arbitrary value of 1 for each 180 degrees of longitudinal (twist) rotation. Examples would be:

1. **Barani (Forward Somersault &  $\frac{1}{2}$  Twist)** = 180 degrees of longitudinal rotation plus 360 degrees of lateral rotation.
 

180 degrees longitudinal rotation	=	1 point
360 degrees lateral rotation	=	4 points
<b>TOTAL ROTATION VALUE</b>	=	<b>5 points</b>

2. **Backward 2 Somersault & 1 Twist (Back Full Fliffis)** = 360 degrees longitudinal rotation **plus** 720 degrees lateral rotation.

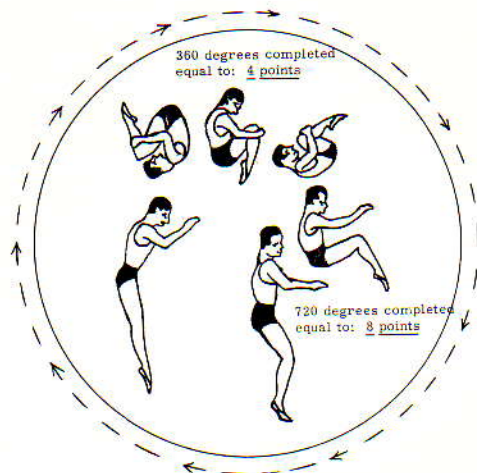
360 degrees longitudinal rotation = 2 points

720 degrees lateral rotation = 8 points

TOTAL ROTATION VALUE = 10 points

**FIGURE II**

'Forward Double Somersault' (720° Rotation)



**Body Position or Take-Off . . . An Important Factor in Determining a Stunt's Difficulty.**

The feeling is rather general throughout the world that Trampoline stunts involving **front drop** and **shoulder** take-offs are **more difficult** to execute than stunts requiring a two foot take-off. In keeping with this idea, a **BONUS POINT** addition of 1-point is attached to the base rotational value of any **CODY** or **BALL-OUT** stunt (Front Drop or Shoulder take-off stunt).

**Example:**

**A Backward 1<sup>1</sup>/<sub>4</sub> Cody Somersault** (front drop to feet) has a lateral axial rotation value of 5 for the 450 degrees of rotation it requires. **A 1 point addition** to this base value (because of the difficulty in take-off) establishes the total value of this stunt at 6 points. The same 1 point addition is also added to the base rotational value of Ball-Out stunts because of the difficulty in take-off.

**Body Position on Landing . . . Another Factor in Determining Difficulty.**

The feeling is also rather general that some Trampoline stunts (because of a particularly difficult landing position), should receive a **BONUS POINT** addition over and above its base axial rotation value.



A survey conducted in 1961 in which the opinions of 123 expert Trampolinists were polled revealed the fact that 97% of them considered the BACKWARD 1<sup>3</sup>/<sub>4</sub> SOMERSAULT to a front drop landing more difficult to perform than the BACKWARD 2 (Double) SOMERSAULT to a foot landing.

**This fact was revealed even though the BACKWARD 2 SOMERSAULT involves 90 degrees more lateral rotation.**

A Backward 2 Somersault (to foot landing) has a base axial rotation value of 8 points.

As a result of the above survey, the Backward 1<sup>3</sup>/<sub>4</sub> Somersault has been arbitrarily assigned a value of 9 points.

This point addition also holds true for the Backward 2<sup>3</sup>/<sub>4</sub> Somersault (to front drop landing) which has a value of 11 points.

### **THE CONSTRUCTION OF AXIAL ROTATION DIFFICULTY RATES FOR 82 TRAMPOLINE STUNTS SEEN IN COMPETITION**

These 82 stunts, along with their individual difficulty rates (according to the Axial Rotation System) are listed on the following pages in five groups. They are:

#### **GROUP I (STRAIGHT FORWARD & BACKWARD SOMERSAULTS)**

Group I involves all stunts that require a **two-foot** take off and involve only lateral (somersault) rotation.

#### **GROUP II (BALL-OUT AND KABOOM SOMERSAULTS)**

Group II considers all stunts that require a shoulder or back take-off and involve either lateral or combinations of lateral and longitudinal rotation.

#### **GROUP III (STRAIGHT CODY SOMERSAULTS & TWISTING CODY SOMERSAULTS)**

Group III considers all stunts that require a **front drop** take-off and involve either lateral or combinations of lateral and longitudinal rotation, and dorso-ventral rotation (Turntables).

#### **GROUP IV (TWISTING SOMERSAULTS from the FEET)**

Group IV considers all stunts that require a two-foot take-off and involve combinations of lateral and longitudinal rotation.

#### **GROUP V (BALLET LEAPS)**

Group V is a special group that involves ballet leaps and **does not** involve axial rotation.

AXIAL ROTATION DIFFICULTY RATES  
FOR 82 'PRACTICAL' TRAMPOLINE STUNTS

**CHART I**

GROUP I (STRAIGHT SOMERSAULTS) Two-Foot Takeoff:

NO.	DESCRIPTION OF STUNT	A. R. RATE
1	FRONT DROP (feet-stomach)	1
2	BACK DROP (feet-back)	1
3	FORWARD 3/4 SOMERSAULT (feet-shoulders)	3
4	FORWARD 1 SOMERSAULT (feet-feet)	4
5	FORWARD 1-1/4 SOMERSAULT (feet-stomach)	5
6	FORWARD 1-3/4 SOMERSAULT (feet-shoulders)	7
7	FORWARD 2 SOMERSAULT (feet-feet)	8
8	FORWARD 2-1/4 SOMERSAULT (feet-stomach)	9
9	FORWARD 2-3/4 SOMERSAULT (feet-shoulders)	11
10	FORWARD 3 SOMERSAULT (feet-feet)	12
11	SIDEWARD 1 SOMERSAULT (feet-feet)	4
12	SIDEWARD 2 SOMERSAULT (feet-feet)	8
13	BACKWARD 3/4 SOMERSAULT (feet-stomach)	4*
14	BACKWARD 1 SOMERSAULT (feet-feet)	4
15	BACKWARD 1-1/4 SOMERSAULT (feet-back or shoulders)	5
16	BACKWARD 1-3/4 SOMERSAULT (feet-stomach)	9*
17	BACKWARD 2 SOMERSAULT (feet-feet)	8
18	BACKWARD 2-1/4 SOMERSAULT (feet-back or shoulders)	9
19	BACKWARD 2-3/4 SOMERSAULT (feet-stomach)	13*
20	BACKWARD 3 SOMERSAULT (feet-feet)	12

GROUP II (BALL-OUT & KABOOM SOMERSAULTS) Shoulder or back Takeoff:

NO.	DESCRIPTION OF STUNT	A. R. RATE
21	FORWARD 1-1/4 BALL-OUT SOMERSAULT (to feet)	6*
22	FORWARD 2 BALL-OUT SOMERSAULT (to shoulders)	9*
23	FORWARD 2-1/4 BALL-OUT SOMERSAULT (to feet)	10*
24	FORWARD 1-1/4 BALL-OUT SOMERSAULT & 1/2 TWIST	7*
25	FORWARD 1-1/4 BALL-OUT SOMERSAULT & 1-1/2 TWIST	9*
26	FORWARD 1-1/4 BALL-OUT SOMERSAULT & 2-1/2 TWIST	11*
27	BACKWARD 3/4 PULLOVER OR KABOOM SOMERSAULT	4*
28	BACKWARD 1-3/4 PULLOVER OR KABOOM SOMERSAULT	7*

\* Indicates that stunt has been given a BONUS POINT addition of 1 point for increased difficulty in either takeoff or landing.



AXIAL ROTATION DIFFICULTY RATES  
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**CHART II**

GROUP III (CODY SOMERSAULTS & TURNTABLES) Front-Drop Takeoff:

NO.	DESCRIPTION OF STUNT	A. R. RATE
29	1/2 TURNTABLE Front-Drop-Front-Drop)	2*
30	1 TURNTABLE " "	3*
31	1-1/2 TURNTABLE " "	4*
32	2 TURNTABLE " "	5*
33	2-1/2 TURNTABLE " "	6*
34	FORWARD 3/4 CODY SOMERSAULT (F. D. -Feet)	5**
35	FORWARD 1-3/4 CODY SOMERSAULT " "	9**
36	FORWARD 3/4 CODY SOMERSAULT & 1/2 TWIST	6**
37	FORWARD 3/4 CODY SOMERSAULT & 1-1/2 TWIST	8**
38	FORWARD 3/4 CODY SOMERSAULT & 2-1/2 TWIST	10**
39	FORWARD 1-3/4 CODY SOMERSAULT & 1/2 TWIST	10**
40	BACKWARD 1 CODY SOMERSAULT (F. D. -F. D.)	6***
41	BACKWARD 1-1/4 CODY SOMERSAULT (F. D. -Feet)	6***
42	BACKWARD 2 CODY SOMERSAULT (F. D. -F. D.)	10***
43	BACKWARD 2-1/4 CODY SOMERSAULT (F. D. -Feet)	10***
44	BACKWARD 3-1/4 CODY SOMERSAULT " "	14***
45	BACKWARD 1-1/4 CODY SOMERSAULT & 1 TWIST	8*
46	BACKWARD 1-1/4 CODY SOMERSAULT & 2 TWIST	10*
47	BACKWARD 1-1/4 CODY SOMERSAULT & 3 TWIST	12*

\*Indicates that skill has been given a 1 point bonus addition for increased difficulty in takeoff position.

\*\* Indicates an upgrading of 2 points due to recent research concerning that group of skills known as 'Front Cody Somersaults.'

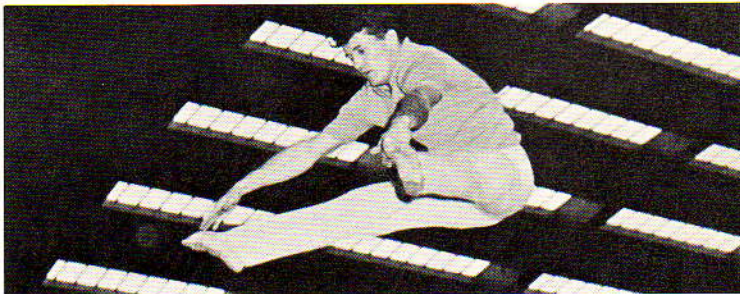
\*\*\* Indicates that skill has been given a 2 point bonus addition for increased difficulty in both takeoff and landing positions.

AXIAL ROTATION DIFFICULTY RATES  
FOR 82 'PRACTICAL' TRAMPOLINE STUNTS

CHART III

GROUP IV (TWISTING SOMERSAULTS) Two-Foot Takeoff:

NO.	DESCRIPTION OF STUNT	A. R. RATE
48	FORWARD 1 SOMERSAULT & 1/2 TWIST (BARANI)	5
49	FORWARD 1 SOMERSAULT & 1 TWIST	6
50	FORWARD 1 SOMERSAULT & 1-1/2 TWISTS (RUDOLPH)	7
51	FORWARD 1 SOMERSAULT & 2 TWISTS	8
52	FORWARD 1 SOMERSAULT & 2-1/2 TWISTS (RANDOLPH)	9
53	FORWARD 1 SOMERSAULT & 3 TWISTS	10
54	FORWARD 1 SOMERSAULT & 3-1/2 TWISTS (ADOLPH)	11
55	FORWARD 1-1/4 SOMERSAULT & 1/2 TWIST (to back)	6
56	FORWARD 1-1/4 SOMERSAULT & 1 TWIST (to stomach)	7
57	FORWARD 1-1/4 SOMERSAULT & 2 TWISTS	9
58	FORWARD 1-1/4 SOMERSAULT & 3 TWISTS	11
59	FORWARD 1-3/4 SOMERSAULT & 1/2 TWIST (to stomach)	8
60	FORWARD 1-3/4 SOMERSAULT & 1 TWIST (to shoulders)	9
61	FORWARD 1-3/4 SOMERSAULT & 2 TWISTS (to shoulders)	11
62	FORWARD 1-3/4 SOMERSAULT & 3 TWISTS (to shoulders)	13
63	FORWARD 2 SOMERSAULT & 1/2 TWIST (FLIFFIS)	9
64	FORWARD 2 SOMERSAULT & 1-1/2 TWISTS	11
65	FORWARD 2 SOMERSAULT & 2-1/2 TWISTS	13
66	FORWARD 3 SOMERSAULT & 1/2 TWIST (TRIFFLIS)	13
67	FORWARD 3 SOMERSAULT & 1-1/2 TWISTS	15
68	BACKWARD 1 SOMERSAULT & 1/2 TWIST	5
69	BACKWARD 1 SOMERSAULT & 1 TWIST	6
70	BACKWARD 1 SOMERSAULT & 1-1/2 TWISTS	7
71	BACKWARD 1 SOMERSAULT & 2 TWISTS	8
72	BACKWARD 1 SOMERSAULT & 3 TWISTS	10
73	BACKWARD 1 SOMERSAULT & 4 TWISTS	12
74	BACKWARD 1-1/4 SOMERSAULT & 1/2 TWIST (to stomach)	6
75	BACKWARD 1-1/4 SOMERSAULT & 1-1/2 TWISTS	8
76	BACKWARD 1-3/4 SOMERSAULT & 1/2 TWIST (to shoulders)	8
77	BACKWARD 1-3/4 SOMERSAULT & 1 TWIST (to stomach)	11*
78	BACKWARD 1-3/4 SOMERSAULT & 1-1/2 TWISTS (to shoulders)	10
79	BACKWARD 2 SOMERSAULT & 1 TWIST (FLIFFIS)	10
80	BACKWARD 2 SOMERSAULT & 2 TWISTS	12
81	BACKWARD 2 SOMERSAULT & 3 TWISTS	14
82	BACKWARD 3 SOMERSAULT & 1 TWIST (TRIFFLIS)	14



An example of a Straddle Jump described on page 25



## STUNTS THAT DO NOT INVOLVE AXIAL ROTATION: HOW SHOULD THEY BE RATED?

There are a small group of stunts (frequently seen in classical ballet) that are performed on the Trampoline but **do not** involve any type of axial rotation. These stunts are expressed in the form of 'leaps' and are, in themselves, quite attractive from the aesthetic viewpoint.

How should stunts in this category be rated? Certainly, they are more difficult to perform than a 'free bounce' . . . yet, they do not require the type of directional changes seen in somersault or twisting movements. They can, by the more proficient performers, be used as 'CONTROL MOVES' in the middle or any part of a competitive routine.

Discussions with several performers (including many Europeans), revealed the fact that these stunts should be given a base value higher than the FRONT DROP (1 point), but less than a <sup>3</sup>/<sub>4</sub> FORWARD SOMERSAULT (3 points). This would arbitrarily place the value of 'ballet leaps' at 2 points on the axial rotation chart.

**Some of these stunts with a value of 2 points are listed in a special group.**

GROUP V (BALLET LEAPS) Two-Foot Takeoff:

NO.	DESCRIPTION OF STUNT	A. R. RATE
83	SWAN ARCH	2
84	STAG LEAP	2
85	STRADDLE JUMP	2
86	SPLIT JUMP	2

## HOW TO EVALUATE THE COMBINATION FACTOR

Difficulty as such and combination as such **cannot be isolated as separate factors for evaluation**. This reasoning is based upon the following:

1. **The difficulty of any individual stunt is increased in direct proportion to the difficulty of the stunt which immediately preceded it.**
2. **Because of this fact, difficulty and combination are soluble within each other and must be evaluated as a total entity.**

The writer experimented with many different Trampoline routines which included a wide variety of stunt combinations. A mathematical formula was sought that could be used to figure combination values on a **reasonable** basis. This reasoning might be expressed as follows:

1. When placed into combination the value of Stunt B is influenced by the value of Stunt A which immediately preceded it.
2. A Backward 2 Somersault has an axial rotation value of **8 points** when executed from a 'free bounce'. A Backward 1 Somersault has an axial rotation value of **4** when it is executed from a 'free bounce'.
3. A Backward 2 Somersault (with value of 8) is certainly more difficult to perform **from** a Backward 1 Somersault (with a value of 4) than it is from a **free bounce** (with a value of 0).
4. How much more difficult? . . . is the question.

The most practical means that will provide a consistent and accurate appraisal of one stunt's **mathematical influence** over another is through the process of **multiplication**.

**The following formula illustrates this fact:**

**COMBINATION** plus **INDIVIDUAL DIFFICULTY** of STUNT B (when executed from STUNT A) is equal to:

$$\text{STUNT B} + (\text{STUNT A} \times \text{STUNT B})$$

10

**EXAMPLE:**

The total difficulty plus combination of a three-stunt routine is figured as follows:

1. Back 1 Somersault        = 4 + 0        = 4.0
  2. Back 2 Somersault       = 8 + 3.2       = 11.2
  3. Back 2 Somersault       = 8 + 6.4       = 14.4
- Total Difficulty plus Combination        = 29.6**

**EXAMPLE:**

A 12-bounce competitive Trampoline routine could be figured for **difficulty plus combination** as follows:

NO.	DESCRIPTION OF STUNT	A. R. V.	C. V.	T. D. C. V.
1	FWD. 2 SOMERSAULT & 1/2 TWIST	9	0	9.0
2	BKWD. 1 SOMERSAULT	4	3.6	7.6
3	BKWD. 1 SOMERSAULT & 1 TWIST	6	2.4	8.4
4	BKWD. 1 SOMERSAULT & 2 TWISTS	8	4.8	12.8
5	RUDOLPH	7	5.6	12.6
6	BKWD. 1 SOMERSAULT & 1 TWIST	6	4.2	10.2
7	BKWD 2 SOMERSAULT	8	4.8	12.8
8	BARANI	5	4.0	9.0
9	BKWD. 1 SOMERSAULT	4	2.0	6.0
10	BKWD. 1 SOMERSAULT & 2 TWISTS	8	3.2	11.2
11	BKWD. 1-3/4 SOMERSAULT	9	7.2	16.2
12	BKWD. 2-1/4 CODY SOMERSAULT	10	9.0	19.0
<b>TOTALS:</b>		<b>84.0</b>	<b>50.8</b>	<b>134.8</b>

The **TOTAL COMBINATION** plus **DIFFICULTY** value of the above 12-stunt routine is found to be 134.8 points.



CROSS REFERENCE TABLE FOR COMPUTING COMBINATION PRODUCTS

COLUMN A

B	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1.0	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5
2	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0
3	3.3	3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.7	6.0	6.3	6.6	6.9	7.2	7.5
4	4.4	4.8	5.2	5.6	6.0	6.4	6.8	7.2	7.6	8.0	8.4	8.8	9.2	9.6	10.0
5	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5
6	6.6	7.2	7.8	8.4	9.0	9.6	10.2	10.8	11.4	12.0	12.6	13.2	13.8	14.4	15.0
7	7.7	8.4	9.1	9.8	10.5	11.2	11.9	12.6	13.3	14.0	14.7	15.4	16.1	16.8	17.5
8	8.8	9.6	10.4	11.2	12.0	12.8	13.6	14.4	15.2	16.0	16.8	17.6	18.4	19.2	20.0
9	9.9	10.8	11.7	12.6	13.5	14.4	15.3	16.2	17.1	18.0	18.9	19.8	20.7	21.6	22.5
10	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0
11	12.1	13.2	14.3	15.4	16.5	17.6	18.7	19.8	20.9	22.0	23.1	24.2	25.3	26.4	27.5
12	13.2	14.4	15.6	16.8	18.0	19.2	20.4	21.6	22.8	24.0	25.2	26.4	27.6	28.8	30.0
13	14.3	15.6	16.9	18.2	19.5	20.8	22.1	23.4	24.7	26.0	27.3	28.6	29.9	31.2	32.5
14	15.4	16.8	18.2	19.6	21.0	22.4	23.8	25.2	26.6	28.0	29.4	30.8	32.2	33.6	35.0
15	16.5	18.0	19.5	21.0	22.5	24.0	25.5	27.0	28.5	30.0	31.5	33.0	34.5	36.0	37.5

The above table can be used quickly and efficiently to compute the combination value of any combination of stunts. To find value of 2<sup>nd</sup> stunt in combination, find value (A. R. Difficulty) in Column B and move across horizontal line until square is found which is directly under preceding stunt's value in Column A. The value in the square is the total combination plus difficulty of 2<sup>nd</sup> stunt.

